

# ETSI TR 125 993 V8.3.0 (2009-10)

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*Technical Report*

**Universal Mobile Telecommunications System (UMTS);  
Typical examples of Radio Access Bearers (RABs)  
and Radio Bearers (RBs) supported by Universal  
Terrestrial Radio Access (UTRA)  
(3GPP TR 25.993 version 8.3.0 Release 8)**

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# Contents

Intellectual Property Rights .....	2
Foreword.....	2
Foreword.....	21
1 Scope .....	22
2 References .....	22
3 Abbreviations and Terms .....	23
3.1 Abbreviations .....	23
3.2 Terms.....	23
4 QoS Architecture and RAB attributes .....	23
5 List of RABs and SRBs.....	25
5.1 Interactive or background class Radio Access Bearers (PS domain) .....	25
5.2 Streaming class Radio Access Bearers.....	26
5.2.1 CS domain .....	26
5.2.2 PS domain.....	26
5.3 Conversational class Radio Access Bearers .....	27
5.3.1 CS domain .....	27
5.3.2 PS domain.....	28
5.4 Signalling Radio Bearers (Control Plane) .....	28
6 Combinations of RABs .....	28
7 Examples of Radio Bearers and Signalling Radio Bearers for FDD.....	29
7.1 Combinations on DPCH.....	29
7.1.1 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH .....	29
7.1.2 Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH .....	29
7.1.2a Stand-alone UL:6.8 DL:6.8 kbps SRBs for DCCH .....	29
7.1.3 Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH .....	31
7.1.3a Stand-alone UL:27.2 DL:27.2 kbps SRBs for DCCH .....	31
7.1.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	32
7.1.5 Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	33
7.1.6 Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	33
7.1.7 Conversational / speech / UL:(10.2, 6.7, 5.9, 4.75) DL:(10.2, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	33
7.1.8 Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	33
7.1.9 Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH.....	33
7.1.10 Conversational / speech / UL:(7.4, 6.7, 5.9, 4.75) DL:(7.4, 6.7, 5.9, 4.75) kbps / CS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH.....	33
7.1.11 Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	33
7.1.12 Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	34
7.1.12a Conversational / speech / UL:(5.9, 4.75) DL:(5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	34
7.1.12b Conversational / speech / UL:5.9 DL:5.9 (SF=128) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	36
7.1.13 Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH.....	36
7.1.14 Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH.....	36
7.1.15 Conversational / unknown / UL:28.8/DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	36
7.1.16 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	37
7.1.16a Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	37
7.1.16b Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH+ DL:0.15 kbps SRB#5 for DCCH .....	38
7.1.17 Conversational / unknown / UL:32 DL:32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	40

7.1.18	Streaming / unknown / UL:14.4 DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	40
7.1.19	Streaming / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	40
7.1.20	Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	40
7.1.21	Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	40
7.1.22	Streaming / unknown / UL:64 DL:0 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	42
7.1.23	Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	43
7.1.24	Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	44
7.1.25	Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	44
7.1.26	Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	45
7.1.27	Interactive or background / UL:32 DL:32 kbps / PS RAB (20 ms TTI)+ UL:3.4 DL:3.4 kbps SRBs for DCCH .....	45
7.1.28	Interactive or background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	46
7.1.29	Interactive or background / UL:32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	48
7.1.30	Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	48
7.1.31	Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	49
7.1.32	Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	49
7.1.33	Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH .....	49
7.1.34	Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH .....	50
7.1.35	Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH .....	50
7.1.36	Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH .....	52
7.1.37	Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	53
7.1.38	Interactive or background / UL:384 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	53
7.1.39	Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	53
7.1.40	Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	54
7.1.41	Interactive or background / UL:384 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	54
7.1.42	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	55
7.1.43	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	55
7.1.44	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	56
7.1.45	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	56
7.1.45a	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB (20ms TTI)+ UL:3.4 DL:3.4 kbps SRBs for DCCH .....	57
7.1.46	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	58
7.1.47	Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	58
7.1.48	Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	59
7.1.49	Conversational / speech / UL: (12.2 7.95 5.9 4.75) kbps DL: (12.2 7.95 5.9 4.75) / CS RAB + Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	59
7.1.50	Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	60
7.1.51	Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	60
7.1.52	Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	61
7.1.53	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH.....	61
7.1.54	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH.....	62
7.1.55	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	62
7.1.56	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	63
7.1.57	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	64

7.1.58	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	65
7.1.59	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	65
7.1.60	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	66
7.1.61	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	66
7.1.62	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	67
7.1.63	Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	67
7.1.64	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	67
7.1.65	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	67
7.1.66	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	68
7.1.67	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	69
7.1.68	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	69
7.1.69	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	69
7.1.70	Interactive or background / UL:64 DL:128 kbps / PS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	70
7.1.71	Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	71
7.1.72	Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	71
7.1.73	Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	72
7.1.73a	Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH – Alternative.....	72
7.1.74	Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	74
7.1.75	Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	74
7.1.76	Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	76
7.1.77	Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	79
7.1.78	Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	81
7.1.79	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or Background / UL:0 DL:0 kbps / PS RAB + Interactive or Background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	83
7.1.79a	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (L1 multiplexing) (FDD) .....	85
7.1.80	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	87
7.1.81	Streaming / unknown / UL:8 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	88
7.1.82	Streaming / unknown / UL:8 DL:32 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	90
7.1.83	Streaming / unknown / UL:32 DL:256 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	93
7.1.84	Interactive or background / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	95

7.1.85	Interactive or background / UL:64 DL:8 kbps / PS RAB + Interactive or Background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	97
7.1.86	Interactive or Background / UL:64 DL:128 kbps / PS RAB + Interactive or Background / UL:64 DL:128 kbps / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH.....	97
7.1.87	Interactive or Background / UL:64 DL:384 kbps / PS RAB + Interactive or Background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	98
7.1.88	Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or Background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	99
7.1.89	Interactive or background / UL:128 DL:32 kbps / PS RAB + Interactive or Background / UL:128 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	101
7.1.90	Streaming / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	103
7.1.91	Streaming / unknown / UL:16 DL:32 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	103
7.1.92	Interactive or background / UL:16 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	103
7.1.93	Interactive or background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	103
7.1.94	Interactive or background / UL:16 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	104
7.1.95	Conversational / speech / UL:12.2 DL:12.2 kbps + Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	104
7.1.96	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	106
7.1.97	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH.....	108
7.1.98	Interactive or background / UL:32 DL:64 kbps / PS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH (L1 multiplexing) (FDD).....	109
7.1.99	Interactive or background / UL:128 DL: 64k / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH .....	110
7.1.100	Interactive or background / UL:384 DL: 64k / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH .....	111
7.1.101	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	112
7.1.102	Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kb/s Signalling Radio Bearers for DCCH .....	113
7.1.103	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 64kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH.....	114
7.1.104	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH.....	115
7.1.105	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 384kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH.....	116
7.1.106	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	117
7.1.107	Conversational / speech / UL:(15.85 12.65 8.85 6.6) DL:(15.85 12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	119
7.1.108	Conversational / speech / UL:(23.85 12.65 8.85 6.6) DL:(23.85 12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	121
7.1.109	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	124
7.1.110	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH.....	126
7.1.111	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH.....	128
7.1.112	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	131
7.1.113	Conversational / speech / UL:12.2 DL:12.2 kbps + Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	133

7.1.113a	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:64 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	134
7.1.114	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:32 DL:256 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	136
7.1.115	Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH.....	137
7.1.116	Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	139
7.1.117	Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	141
7.1.118	Conversational / speech / UL:38.8 DL:38.8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH [Rel-6 onwards].....	141
7.1.119	Conversational / speech / UL:16.8 DL:16.8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH [Rel-6 onwards].....	144
7.1.120	Conversational / speech / UL: 40 DL: 40 kbps / PS RAB + Interactive or Background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH [Rel-5 only] .....	149
7.1.121	Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:27.2 DL:27.2 kbps SRBs for DCCH ...	152
7.1.122	Conversational / speech / UL:39.6 DL:39.6 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH [Rel-5] .....	153
7.1.123	Conversational / speech / UL:17.6 DL:17.6 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH [Rel-5] .....	157
7.1.124	Conversational / speech / UL: 39.2 DL: 39.2 kbps / PS RAB + Interactive or Background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	162
7.1.125	Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	165
7.1.126	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH – Alternative.....	167
7.1.127	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	169
7.1.128	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	171
7.1.129	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH.....	174
7.1.130	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	177
7.1.131	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 13.6 DL: 13.6 kbps SRBs for DCCH .....	179
7.1.132	Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL: 13.6 DL: 13.6 kbps SRBs for DCCH.....	181
7.1.133	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:13.6 DL:13.6 kbps SRBs for DCCH..	182
7.1.134	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + UL: 13.6 DL: 13.6 kbps SRBs for DCCH .....	184
7.1.135	Void .....	185
7.1.136	Void .....	185
7.1.137	Interactive or Background / UL:32 DL:64 kbps / PS RAB + Interactive or Background / UL:32 DL:64 kbps / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH.....	185
7.1.138	Interactive or background / UL:128 DL:384 kbps / PS RAB + Interactive or Background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	186



7.1.139	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	187
7.1.140	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH.....	189
7.1.141	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	192
7.1.142	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB (20ms TTI) + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	195
7.1.143	Conversational / speech / UL:6.6 DL:6.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	197
7.1.144	Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	200
7.2	Combinations on S-CCPCH.....	201
7.2.1	Stand-alone signalling RB for PCCH .....	201
7.2.2	Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH .....	201
7.2.3	Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH.....	202
7.2.4	Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH.....	202
7.2.5	16 kbps RB for CTCH + SRB for CCCH + SRB for BCCH.....	202
7.2.6	RB for CTCH + Interactive/Background 32 kbps PS RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH.....	202
7.2.7	Interactive/Background 16 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH .....	204
7.2.8	8 kbps RB for CTCH + SRB for CCCH + SRB for BCCH.....	205
7.2.9	Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH.....	206
7.2.10	258.4 kbps RB for MTCH with 40 ms TTI.....	208
7.2.11	129.2 kbps RB for MTCH with 40 ms TTI.....	210
7.2.12	129.2 kbps RB for MTCH with 80 ms TTI.....	211
7.2.13	64.6 kbps RB for MTCH with 80 ms TTI.....	213
7.2.14	64.8kbps RB for MTCH with 80 ms TTI (alternative config).....	214
7.2.15	129.6 kbps RB for MTCH with 80 ms TTI (alternative config).....	214
7.2.16	259.2 kbps RB for MTCH with 40 ms TTI (alternative config).....	214
7.2.17	7.6 kbps signalling RB for MCCH .....	214
7.2.18	6.4 kbps SRB for MCCH.....	215
7.3	Combinations on PRACH .....	215
7.3.1	Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH .....	215
7.3.2	Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH .....	216
7.3.3	Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH .....	216
7.3.4	Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH.....	216
7.4	Radio Bearer and Radio Bearer Combinations on DPCH and HS-PDSCH .....	216
7.4.1	RB for Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	216
7.4.1b	Void .....	217
7.4.2	RB for Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	217
7.4.3	RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	218
7.4.3a	RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	218
7.4.4	RB for Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	219
7.4.4a	RB for Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	220

7.4.5 RB for Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....221

7.4.5a RB for Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....221

7.4.6 Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....222

7.4.7 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....223

7.4.8 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Interactive or background / UL:128 DL: [Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....223

7.4.9 Void .....225

7.4.10 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL:128 DL: [Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....225

7.4.11 Void .....225

7.4.12 RB for Conversational / unknown / UL:64 DL:64 kbps / CS RAB + RB for Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....226

7.4.14 RB for Streaming / unknown / UL:16 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....228

7.4.15 RB for Streaming / unknown / UL:64 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL: [max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....230

7.4.16 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Streaming / unknown / UL:16 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL: [max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....232

7.4.17 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Streaming / unknown / UL:128 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL: [max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....234

7.4.18 RB for Streaming / unknown / UL:64 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....237

7.4.19 RB for Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH.....238

7.4.20 RB for Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....239

7.4.21 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....240

7.4.22 Conversational / unknown / UL:38.8 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH. ....241

7.4.23	Conversational / unknown / UL:16.8 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH. ....	243
7.4.24	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or Background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	245
7.4.25	RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or Background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH .....	246
7.4.26	RB for Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:6.8 DL:6.8 kbps SRBs for DCCH.....	247
7.4.27	RB for Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:6.8 DL:6.8 kbps SRBs for DCCH.....	247
7.4.28	RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or Background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + RB for Interactive or Background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH.....	248
7.4.29	RB for Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	251
7.4.30	RB for Interactive or background / UL:16 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	252
7.4.31	RB for Streaming MBMS PTP / unknown / UL:16 DL:[max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	253
7.4.32	RB for Streaming MBMS PTP / unknown / UL:16 DL:[max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	253
7.5	Radio Bearer and Radio Bearer Combinations on E-DPDCH and HS-PDSCH.....	254
7.5.1	RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH .....	254
7.5.2	RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL:3.4 kbps SRBs for DCCH on E-DCH and DL on DCH.....	255
7.5.3	RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	256
7.5.4	RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH .....	256
7.5.5	Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL:3.4 kbps SRBs for DCCH on E-DCH and DL DCH .....	257
7.5.6	Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....	258
7.5.7	Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH + DL:0.15 kbps SRB#5 for DCCH .....	259
7.5.8	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....	260

7.5.9 Conversational / speech / UL:(5.9, 4.75) DL:( 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH .....260

7.5.10 UL: [max bit rate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH .....261

7.5.11 RB for interactive or background / UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB + UL: [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH .....262

7.5.12 RB for Conversational / unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB + UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH.....263

7.5.13 RB for Conversational / Unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB + UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH .....265

7.5.14 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....266

7.5.15 RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH + DL:0.15 kbps SRB#5 for DCCH.....267

7.5.16 RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH .....268

7.5.17 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....268

7.5.18 RB for Conversational / Speech UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for Conversational / Unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB + UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH.....270

7.5.19 RB for Conversational / Speech UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for Conversational / Unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB + UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH.....271

7.5.20 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH .....272

7.5.21	RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....	273
7.5.22	RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....	274
7.5.23	RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....	275
7.5.24	RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....	276
7.5.25	RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category and TTI] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH.....	277
7.5.26	UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH + DCH 3.4kbps.....	278
7.5.27	Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:13.6 DL:13.6kbps SRBs for DCCH on DCH.....	280
7.5.28	Conversational / speech / UL: 12.2 kbps DL: 12.2 kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	280
7.5.29	Conversational / speech / UL:(5.9, 4.75) kbps DL: (5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	282
7.5.30	Conversational / speech / UL:(12.2, 7.95, 5.9, 4.75) kbps DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	284
7.5.31	Conversational / speech / UL:(12.65, 8.85, 6.6) kbps DL: (12.65, 8.85, 6.6) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	286
7.5.32	Conversational / speech / UL:(23.85 12.65 8.85 6.6) DL:(23.85 12.65 8.85 6.6) kbps / CS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	287
7.5.33	Conversational / speech / UL:12.2 kbps DL: 12.2 kbps / CS RAB on E-DCH and HS-DSCH + (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH....	289
7.5.34	Conversational / speech / UL:12.2 kbps DL: 12.2 kbps / CS RAB on E-DCH and HS-DSCH + Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	290

7.5.35	Conversational / speech / UL:(12.2, 7.95, 5.9, 4.75) kbps DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	291
7.5.36	Conversational / speech / UL:(12.2, 7.95, 5.9, 4.75) kbps DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	292
7.5.37	Conversational / speech / UL:(5.9, 4.75) kbps DL: (5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH .....	293
7.5.38	Conversational / speech / UL:(5.9, 4.75) kbps DL: (5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	294
7.5.39	Conversational / speech / UL:( 12.65 8.85 6.6) kbps DL: (12.65 8.85 6.6) kbps / CS RAB on E-DCH and HS-DSCH + (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH .....	296
7.5.40	Conversational / speech / UL:( 12.65 8.85 6.6) kbps DL: (12.65 8.85 6.6) kbps / CS RAB on E-DCH and HS-DSCH + Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH.....	297
7.6	Void.....	298
8	Examples of Radio Bearers and Signalling Radio Bearers for 3.84 Mcps TDD.....	298
8.1	Combinations on DPCH.....	298
8.1.1	Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH .....	298
8.1.2	Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH .....	298
8.1.3	Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH .....	298
8.1.4	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH...	299
8.1.5	Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 kbps SRBs for DCCH.....	299
8.1.6	Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH....	299
8.1.7	Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	299
8.1.8	Conversational / speech / UL:6.7 DL: 6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	299
8.1.9	Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	299
8.1.10	Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH....	299
8.1.11	Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH....	300
8.1.12	Conversational / unknown / UL:28.8 DL:28.8kbps / CS RAB + UL:3.4 DL:3.4kbps SRBs for DCCH..	300
8.1.13	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	300
8.1.14	Conversational / unknown / UL:32 DL: 32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	300
8.1.15	Streaming / unknown / UL:14.4 DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	300
8.1.16	Streaming / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	300
8.1.17	Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH.....	301
8.1.18	Streaming / unknown / UL:0 DL: 64 kbps / CS or PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH.....	301
8.1.19	Streaming / unknown / UL: 64 DL:0 kbps / CS or PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH.....	301
8.1.20	Interactive or background / UL: 32 DL:8 kbps / PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH .....	301
8.1.21	Interactive or background / UL: 64 DL: 8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	301
8.1.22	Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	301
8.1.23	Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH .....	301
8.1.24	Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	302
8.1.25	Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH ...	302

8.1.26	Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	302
8.1.27	Interactive or background / UL: 144 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH .....	302
8.1.28	Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	302
8.1.29	Interactive or background / UL: 64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	302
8.1.30	Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	303
8.1.31	Interactive or background / UL:384 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	303
8.1.32	Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	303
8.1.33	Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	303
8.1.34	Interactive or background / UL: 384 DL:2048 kbps / PS RAB+UL:3.4 DL:3.4 kbps SRBs for DCCH .....	303
8.1.35	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	303
8.1.36	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	304
8.1.37	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	304
8.1.38	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	304
8.1.39	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	304
8.1.40	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	304
8.1.41	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	305
8.1.42	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	305
8.1.43	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	305
8.1.44	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	305
8.1.45	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	305
8.1.46	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	305
8.1.47	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	306
8.1.48	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	306
8.1.49	Interactive or background / UL:64 DL:128 kbps / PS RAB + streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	306
8.1.50	Conversational / Speech UL:(12.2-7.95-5.9-4.75) & DL:(12.2-7.95-5.9-4.75) CS RAB + UL:3.4 & DL 3.4kbps SRBs for DCCH.....	306
8.1.51	Conversational / Speech UL:(10.2-6.7-5.9-4.75) & DL:(10.2-7.95-5.9-4.75) CS RAB + UL:3.4 & DL 3.4kbps SRBs for DCCH.....	306
8.1.52	Conversational / Speech UL:(7.4-6.7-5.9-4.75) & DL:(7.4-6.7-5.9-4.75) CS RAB + UL:3.4 & DL 3.4kbps SRBs for DCCH .....	306
8.1.53	Interactive or Background UL:8 & DL:8kbps PS RAB + UL:3.4 & DL:3.4 SRBs for DCCH.....	307
8.1.54	Interactive or Background UL:16 & DL:16kbps PS RAB + UL:3.4 & DL:3.4 SRBs for DCCH .....	307
8.1.55	Interactive or Background UL:32 & DL:32kbps PS RAB + UL:3.4 & DL:3.4 SRBs for DCCH.....	307
8.1.56	Interactive or Background UL:32 & DL:32kbps PS RAB (20msTTI) + UL:3.4 & DL:3.4 SRBs for DCCH .....	307
8.1.57	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	307
8.1.58	Conversational / Speech UL:12.2 & DL:12.2kbps CS RAB + Interactive or Background UL:8 & DL:8kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH .....	307
8.1.59	Conversational / Speech UL:12.2 & DL:12.2kbps CS RAB + Interactive or Background UL:32 & DL:32kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH .....	308
8.1.60	Conversational / Speech UL:12.2 & DL:12.2kbps CS RAB + Interactive or Background UL:64 & DL:64kbps PS RAB + Interactive or Background UL:64 & DL:64kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH .....	308

8.1.61	Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:0 & DL:0kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH .....	308
8.1.62	Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:8 & DL:8kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH .....	308
8.1.63	Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:16 & DL:16kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH ....	308
8.1.64	Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:32 & DL:32kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH ....	309
8.1.65	Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:64 & DL:64kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH ....	309
8.1.66	Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:64 & DL:128kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH ..	309
8.1.67	Conversational / speech / UL:(12.2 7.95 5.9 4.75) kbps DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH....	309
8.1.68	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH. ....	309
8.1.69	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	310
8.1.70	Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH. ....	310
8.1.71	Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	310
8.1.72	Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH. ....	310
8.1.72a	Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH – Alternative.....	310
8.1.73	Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	312
8.1.74	Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH (Multiframe).....	312
8.1.75	Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	312
8.1.76	Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	313
8.1.77	Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	316
8.1.78	Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	318
8.1.79	Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	320
8.1.80	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or Background / UL:0 DL:0 kbps / PS RAB + Interactive or Background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	322
8.1.81	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	324
8.1.82	Streaming / unknown / UL:8 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	326
8.1.83	Streaming / unknown / UL:8 DL:32 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	328
8.1.84	Streaming / unknown / UL:32 DL:256 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	330
8.1.85	Interactive or background / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	332
8.1.86	Interactive or background / UL:64 DL:8 kbps / PS RAB + Interactive or Background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	334
8.1.87	Interactive or Background / UL:64 DL:128 kbps / PS RAB + Interactive or Background / UL:64 DL:128 kbps / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH.....	334
8.1.88	Interactive or Background / UL:64 DL:384 kbps / PS RAB + Interactive or Background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	335
8.1.89	Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or Background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	336



8.1.90	Interactive or background / UL:128 DL:32 kbps / PS RAB + Interactive or Background / UL:128 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	339
8.1.91	Streaming / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	340
8.1.92	Streaming / unknown / UL:16 DL:32 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	341
8.1.93	Interactive or background / UL:16 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	341
8.1.94	Interactive or background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	341
8.1.95	Interactive or background / UL:16 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	341
8.1.96	Conversational / speech / UL:12.2 DL:12.2 kbps + Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	342
8.1.97	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH .....	344
8.2	Combinations on PDSCH, SCCH, PUSCH and PRACH.....	347
8.2.1	Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH.....	347
8.2.2	Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH.....	347
8.2.3	Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH.....	347
8.2.4	Interactive or background / UL: 384 DL: 2048 kbps / PS RAB + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH.....	348
8.3	Combinations on PDSCH, SCCPCH, DPCH, PUSCH and PRACH .....	348
8.3.1	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH.....	348
8.3.2	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH.....	348
8.3.3	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH.....	349
8.4	Combinations on SCCPCH .....	349
8.4.1	Stand – alone signalling RB for PCCH .....	349
8.4.2	Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH .....	349
8.4.3	Interactive / Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH .....	349
8.4.4	Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH.....	349
8.4.5	SRBs for CCCH + SRB for DCCH + SRB for BCCH .....	349
8.4.6	SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH .....	350
8.4.7	RB for CTCH + SRB for CCCH + SRB for BCCH .....	350
8.5	Combinations on PRACH .....	350
8.5.1	SRB for CCCH + SRB for DCCH.....	350
8.5.2	Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRB for DCCH .....	350
8.5.3	Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRB for DCCH .....	350
9	Examples of Radio Bearers and Signalling Radio Bearers for 1.28 Mcps TDD.....	350
9.1	Combinations on DPCH.....	350
9.1.1	Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH .....	350
9.1.1a	Stand-alone UL: 1.7 DL: 1.7 kbps SRBs for DCCH (multiframe) .....	350
9.1.2	Stand-alone UL: 3.4 DL: 3.4 kbps SRBs for DCCH .....	351
9.1.3	Stand-alone UL: 13.6 DL: 13.6 kbps SRBs for DCCH .....	351
9.1.4	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH .....	351
9.1.4a	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2 kbps, 7.95, 5.9, 4.75) / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH .....	351
9.1.5	Conversational / speech / UL: 10.2 DL: 10.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH .....	351

9.1.5a	Conversational / speech / UL: (10.2, 6.7, 5.9, 4.75) DL: (10.2, 6.7, 5.9, 4.75) kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	351
9.1.6	Conversational / speech / UL: 7.95 DL: 7.95 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	352
9.1.7	Conversational / speech / UL: 7.4 DL: 7.4 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH....	352
9.1.7a	Conversational / speech / UL: (7.4, 6.7, 5.9, 4.75) DL: (7.4, 6.7, 5.9, 4.75) kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	352
9.1.8	Conversational / speech / UL: 6.7 DL: 6.7 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH....	352
9.1.9	Conversational / speech / UL: 5.9 DL: 5.9 kbps / CS rab + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	352
9.1.10	Conversational / speech / UL: 5.15 DL: 5.15 kbps / CS RAB + UL: 1.7 DL: 1.7 kbps SRBs for DCCH.....	352
9.1.11	Conversational / speech / UL: 4.75 DL: 4.75 kbps / CS RAB + UL: 1.7 DL: 1.7 kbps SRBs for DCCH.....	352
9.1.12	Conversational / unknown / UL: 28.8 DL: 28.8 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	353
9.1.13	Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH..	353
9.1.14	Conversational / unknown / UL: 32 DL: 32 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH..	353
9.1.15	Streaming / unknown / UL: 14.4 DL: 14.4 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH....	353
9.1.16	Streaming / unknown / UL: 28.8 DL: 28.8 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH....	353
9.1.17	Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH....	353
9.1.18	Void.....	354
9.1.19	Void.....	354
9.1.20	Void.....	354
9.1.21	Void.....	354
9.1.22	Void.....	354
9.1.23	Interactive or background / UL: 32 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	354
9.1.23a	Interactive or background / UL: 8DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	354
9.1.23b	Interactive or background / UL: 16 DL: 16 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH...	354
9.1.23c	Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH...	354
9.1.23d	Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH (20 ms TTI).....	355
9.1.24	Void.....	355
9.1.25	Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH...	355
9.1.26	Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH...	355
9.1.27	Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	355
9.1.28	Interactive or background / UL: 128 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	355
9.1.29	Interactive or background / UL: 64 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	355
9.1.30	Interactive or background / UL: 144 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	356
9.1.31	Interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	356
9.1.32	Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	356
9.1.33	Interactive or background / UL: 128 DL: 384 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	356
9.1.34	Interactive or background / UL: 384 DL: 384 kbps / PS RAB +UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	356
9.1.35	Interactive or background / UL: 64 DL: 2048 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	356
9.1.36	Void.....	356
9.1.37	Void.....	357
9.1.38	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 32 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	357
9.1.38a	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 0 DL: 0 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	357
9.1.38b	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	357
9.1.38c	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	357

9.1.38d	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	357
9.1.38e	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 0 DL: 0 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	358
9.1.38f	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	358
9.1.38g	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 16 DL: 16 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH ...	358
9.1.38h	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH ...	358
9.1.38i	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH ...	358
9.1.38j	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	358
9.1.39	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	359
9.1.40	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	359
9.1.41	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	359
9.1.42	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	359
9.1.43	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	359
9.1.44	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 128 DL: 2048 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	360
9.1.45	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	360
9.1.46	Void.....	360
9.1.47	Void.....	360
9.1.48	Void.....	360
9.1.49	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	360
9.1.49a	Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH..	360
9.1.50	Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	361
9.1.51	Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	361
9.1.51a	Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	361
9.1.51b	Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + Interactive or background / UL: 16 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	361
9.1.52	Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	361
9.1.53	Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + Interactive or background / UL: 128 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH.....	361
9.1.54	Void.....	362
9.1.55	Void.....	362
9.1.56	Interactive or background / UL: 8 DL: 8 kbps / PS RAB + Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	362
9.1.57	Interactive or background / UL: 64 DL: 64 kbps / PS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	362
9.1.58	Streaming / Unknown / UL: 16 DL: 64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	362
9.1.59	Reserved for future use.....	362
9.1.60	Reserved for future use.....	362
9.1.61	Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.....	362
9.2	Combinations on PDSCH, SCCH, PUSCH and PRACH.....	363

9.2.1	Interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH.....	363
9.2.2	Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH.....	363
9.2.3	Interactive or background / UL: 64 DL: 2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH .....	363
9.3	Combinations on PDSCH, SCCPCH, DPCH, PUSCH and PRACH .....	363
9.3.1	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH + interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL: 16.8 kbps SRBs for CCCH and SHCCH + DL: 33.6 kbps SRBs for CCCH, SHCCH and BCCH .....	363
9.3.2	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH + Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL: 16.8 kbps SRBs for CCCH and SHCCH + DL: 33.6 kbps SRBs for CCCH, SHCCH and BCCH .....	363
9.3.3	Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH + Interactive or background / UL: 64 DL: 2048 kbps / PS RAB + UL: 16.8 kbps SRBs for CCCH and SHCCH + DL: 33.6 kbps SRBs for CCCH, SHCCH and BCCH .....	364
9.4	Combinations on SCCPCH .....	364
9.4.1	Stand – alone signalling RB for PCCH .....	364
9.4.2	Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH .....	364
9.4.2a	Interactive / Background 32 kbps PS RAB + Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH.....	364
9.4.2b	SRBs for CCCH + SRB for DCCH + SRB for BCCH .....	364
9.4.3	Interactive / Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH .....	364
9.4.3a	SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH.....	365
9.4.4	RB for CTCH + SRB for CCCH + SRB for BCCH .....	365
9.5	Combinations on PRACH .....	365
9.5.1	SRB for CCCH + SRB for DCCH.....	365
9.5.2	Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRBs for DCCH.....	365
9.5.3	Interactive/Background 12.8 kbps PS RAB + Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRBs for DCCH .....	365
9.6	Radio Bearer and Radio Bearer Combinations on DPCH and HS-PDSCH .....	365
9.6.1	Interactive or background / UL:8 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	366
9.6.1a	Interactive or background / UL:8 (multiframe) DL: [max bit rate depending on UE category] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH (multiframe) (REL-5) .....	366
9.6.2	Interactive or background / UL:16 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	367
9.6.2a	Interactive or background / UL:16(multiframe) DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH(multiframe) (REL-5) .....	367
9.6.3	Interactive or background / UL:32 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	368
9.6.3a	Interactive or background / UL:32(multiframe) DL: [max bit rate depending on UE category] / PS RAB +UL:3.4 DL:3.4 kbps SRBs for DCCH(multiframe) (REL-5) .....	369
9.6.4	Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	369
9.6.5	Interactive or background / UL:128 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	370
9.6.6	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	370
9.6.7	Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	371
9.6.8	Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5).....	372
<b>Annex A:</b>	<b>Service scenarios.....</b>	<b>373</b>

A.1	Common characteristics of scenarios .....	374
A.1.1	RTP and RTCP streams .....	374
A.1.2	Signalling stream .....	375
A.1.3	Data stream .....	375
A.2	Scenarios .....	375
A.2.1	Speech.....	375
A.2.2	Audio .....	376
A.2.3	Video .....	376
A.2.4	Text.....	376
A.2.5	Speech and video .....	376
A.2.6	Audio and video.....	376
A.2.7	Video, audio, or speech with text.....	376
<b>Annex B:</b>	<b>Mapping of service scenarios to Radio Access Bearers .....</b>	<b>377</b>
B.1	Common requirements .....	377
B.2	Bearer characteristics .....	377
B.3	RAB Scenarios .....	378
<b>Annex C:</b>	<b>Change history .....</b>	<b>379</b>
History .....		381

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# Foreword

This Technical Report (TR) has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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# 1 Scope

The present document provides a list of examples of RABs and RAB combinations which are supported by UTRA with examples of radio interface mapping for these RABs onto Radio Bearers and Signalling Radio Bearers.

This list of examples describes typical parameters, and should only be understood as possible configurations i.e. any other configuration supported by the Core Specifications and consistent with a given UE capability shall also be supported by this UE.

The present document addresses the FDD mode as well as the TDD mode.

This report is a release independent report. This means that the latest release applicable to 3GPP is the reference that this TR is defined upon, and contains information on all previous releases. Actual release where a given example applies is indicated in the relevant section.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 34.108: "Common Test Environments for User Equipment (UE) Conformance Testing"
- [2] 3GPP TS 23.107: "Quality of Service (QoS) concept and architecture".
- [3] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".
- [4] 3GPP TS 25.322: "RLC Protocol Specification".
- [5] 3GPP TS 25.323: "PDCP Protocol Specification".
- [6] 3GPP TS 25.331: "Radio Resource Control (RRC); protocol specification".
- [7] IETF RFC 2507: "IP Header Compression".
- [8] 3GPP TS 25.306: "UE Radio Access Capabilities"
- [9] IETF RFC 3095: "RObust Header Compression (ROHC): Framework and four profiles: RTP, UDP, ESP, and uncompressed".
- [10] 3GPP TS 26.236: "Packet switched conversational multimedia applications; Transport protocols"
- [11] 3GPP TS 26.234: "Transparent end-to-end packet switched streaming service (PSS); Protocols and codecs"
- [12] IETF RFC1889: "RTP: A Transport Protocol for Real-Time Applications"
- [13] IETF RFC3267: "Real-Time Transport Protocol (RTP) Payload Format and File Storage Format for the Adaptive Multi-Rate (AMR) and Adaptive Multi-Rate Wideband (AMR-WB) Audio Codecs"
- [14] 3GPP TR 26.937: "Transparent end-to-end packet switched streaming service (PSS); RTP usage model"

- [15] 3GPP TS 26.235: "Packet switched conversational multimedia applications; Default codecs"
- [16] IETF RFC2793: "RTP Payload for Text Conversation"

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## 3 Abbreviations and Terms

### 3.1 Abbreviations

For the purposes of the present document, the abbreviations contained in TR 21.905 apply, as well as the following:

DL	Downlink
HC	Header Compression
IETF	Internet Engineering Task Force
I/B	Interactive / Background
IP	Internet Protocol
kbps	kilo-bits per second
RAB	Radio Access Bearer
RB	Radio Bearer
RNC	Radio Network Controller
ROHC	Robust Header Compression
RT	Real-time
RTP	Real-time Transport Protocol
RTCP	Real-time Transport Control Protocol
RTSP	Real-time Streaming Protocol
SIP	Session Initiation Protocol
SRB	Signalling Radio Bearer
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
UL	Uplink

### 3.2 Terms

<b>Bearer</b>	Common term used to refer to RAB, RB, and/or SRB, when there is no need to distinguish between these terms.
<b>Radio Access Bearer</b>	Bearer between UE and CN.
<b>Radio Bearer</b>	User plane bearer on RAN level between RNC/NodeB and UE.
<b>Signalling Radio Bearer</b>	RAN level bearer for RRC and NAS signalling between RNC and UE. User plane signalling bearer (e.g., the bearer for SIP signalling) is not SRB, but RB.

NOTE: In [1] also the RAN level bearers are called as RABs. In order to maintain consistency with [1], the term RAB is partly used instead of RB also in this document in similar contexts as in [1].

For the Radio Access Bearers mapped on HS-PDSCH in the downlink, or E-PDCH in the uplink, the terminology was enhanced so that the above mentioned terms are used correctly in the document except for subclauses 7.1, 7.2, 7.3 and the complete clauses 8 and 9.

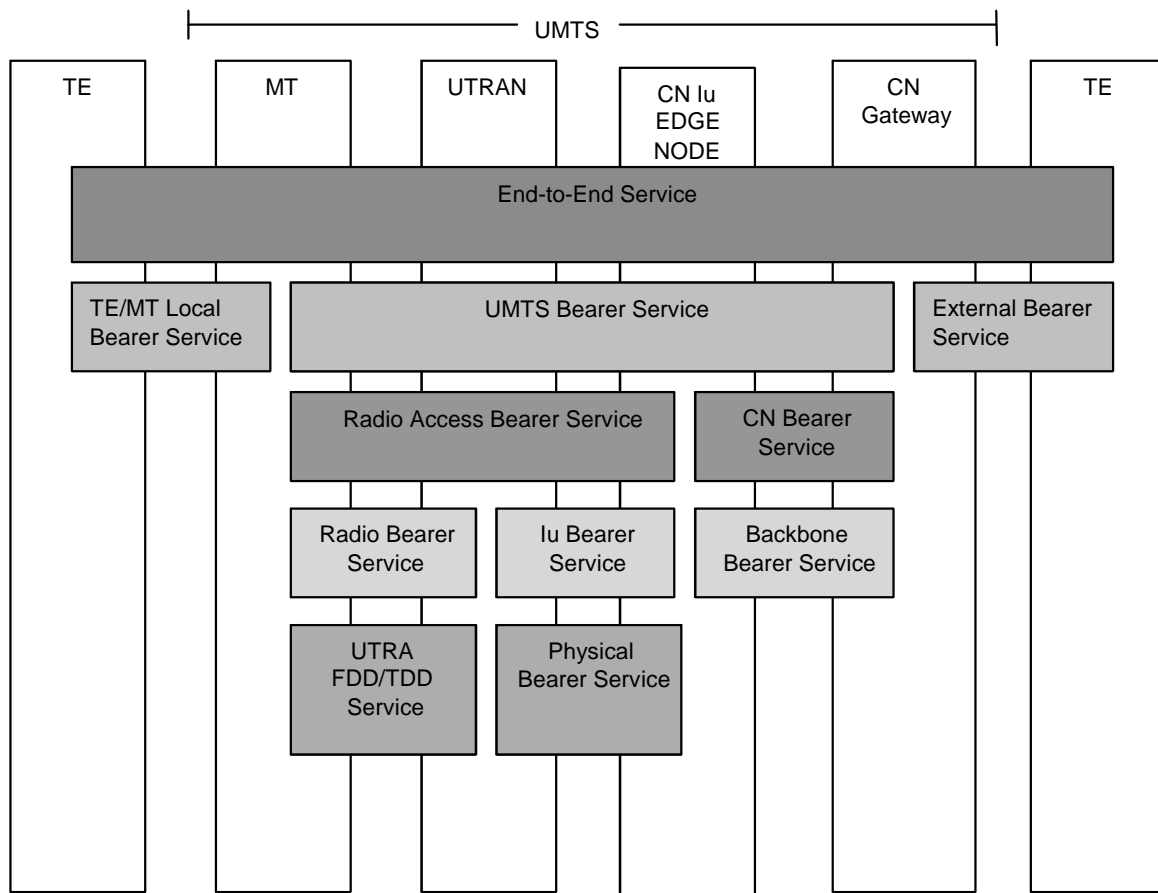
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## 4 QoS Architecture and RAB attributes

From a user point-of-view services are considered end-to-end, this means from a Terminal Equipment (TE) to another TE. An End-to-End Service may have a certain Quality of Service (QoS) which is provided for the user through the different networks. In UMTS, it is the UMTS Bearer Service that provides the requested QoS through the use of different QoS classes as defined in [2].

The UMTS Bearer Service consists of two parts, the Radio Access Bearer (RAB) Service and the Core Network Bearer Service. The Radio Access Bearer Service is realised by a Radio Bearer (RB) Service and an Iu-Bearer Service. The relationship between the services is illustrated in figure 4.1.





**Figure 4.1: UMTS QoS Architecture**

The Radio Access Bearer (RAB) Service is characterised by a number of attributes such as Traffic class, Maximum bit rate, Guaranteed bit rate, SDU error ratio, Residual BER, Transfer Delay etc. As a first approach the four following attributes have been considered to come up with the parameter settings in clause 7 for FDD mode and 8 for TDD mode:

- Traffic class;
- SSD;
- Maximum bit rate;
- Residual BER.

The Traffic classes are explained in table 4-1. The Maximum bit rate has been considered at RLC layer and Physical Layer for the acknowledged and unacknowledged modes respectively. The Residual BER is understood as BER at RLC layer and Transport BLER for the acknowledged and unacknowledged modes respectively.

Table 4-1: Traffic classes

Traffic class	Conversational class conversational RT	Streaming class streaming RT	Interactive class Interactive best effort	Background Background best effort
<b>Fundamental characteristics</b>	- Preserve time relation (variation) between information entities of the stream  Conversational pattern (stringent and low delay)	- Preserve time relation (variation) between information entities of the stream (i.e. some but constant delay)	Request response pattern  Preserve payload content	Destination is not expecting the data within a certain time  Preserve payload content
<b>Example of the application</b>	- speech, video, ...	- facsimile (NT)  - streaming audio and video	- Web browsing	- background download of emails

## 5 List of RABs and SRBs

The following tables provide examples of Radio Access Bearers (RABs) which can be realised by various Radio Bearers (RBs) as defined in clauses 7 and 8. The data rate given for each RAB is the maximum data rate that can be supported by that RAB in case of non real-time RABs. For real-time RABs the given datarate are the guaranteed and maximum bit rates.

The mapping between Radio Access Bearer and Radio Bearer is internal to UTRAN Radio Resource Management and not standardised. Based on certain Radio Access Bearer attributes, resource utilisation or radio conditions, different Radio Bearers can fulfill the Radio Access Bearer requirements.

Table 5.1: Void

### 5.1 Interactive or background class Radio Access Bearers (PS domain)

The following table lists typical maximum RAB data rates independently for uplink and downlink. These maximum bit rates are part of the "RAB parameters" received by the RNC in the RANAP: RAB ASSIGNMENT messages and must be mandatorily provided from the CN (SGSN) to the UTRAN (RNC). Any combination of the listed example data rates is possible.

**Table 5.1-1: Interactive or Background / UL: [m] kbps DL: [m] kbps / PS RAB**

Max UL bitrate [m] kbps	Max DL bitrate [m] kbps
0	0
8	8
16	16
24	24
32	32
64	64
128	128
144	144
256	256
384	384
512	512
1024	1024
2048	2048
3072	3072
4096	4096
	6144
	7168
	8192
	10240
	12288
	14336

## 5.2 Streaming class Radio Access Bearers

### 5.2.1 CS domain

The following table lists typical guaranteed and maximum RAB data rates independently for uplink and downlink which can be used by CS streaming applications for example. These guaranteed and maximum bitrates are part of the "RAB parameters" received by the RNC in the RANAP: RAB ASSIGNMENT messages and must be mandatorily provided from the CN (SGSN) to the UTRAN (RNC) for the streaming traffic class. Any combination of the listed example datarates is possible. It should be noted that the requested maximum bit rate should always be equal to the requested guaranteed bit rate for a given connection.

**Table 5.2.1-1: Streaming / unknown / UL: [g] [m] kbps DL: [g] [m] kbps / CS RAB**

Guaranteed UL bitrate [g] kbps for streaming	Max UL bitrate [m] kbps for streaming	Guaranteed DL bitrate [g] kbps for streaming	Max DL bitrate [m] kbps for streaming
0	0	0	0
14.4	14.4	14.4	14.4
28.8	28.8	28.8	28.8
57.6	57.6	57.6	57.6
64	64	64	64

NOTE: The requested max. bit rate shall always be equal to the requested guaranteed bit rate.

### 5.2.2 PS domain

The following table lists typical guaranteed and maximum RAB data rates independently for uplink and downlink which can be used by PS streaming applications for example. These guaranteed and maximum bit rates are part of the "RAB parameters" received by the RNC in the RANAP: RAB ASSIGNMENT messages and must be mandatorily provided from the CN (SGSN) to the UTRAN (RNC) for the streaming traffic class. Any combination of the listed example data rates is possible. It should be noted that the requested maximum bit rate should always be equal or higher than the requested guaranteed bit rate for a given connection.

Table 5.2.2-1: Streaming / unknown / UL: [g] [m] kbps DL: [g] [m] kbps / PS RAB

Guaranteed UL bitrate [g] kbps for streaming	Max UL bitrate [m] kbps for streaming	Guaranteed DL bitrate [g] kbps for streaming	Max DL bitrate [m] kbps for streaming
0	0	0	0
8	8	8	8
16	16	16	16
32	32	32	32
64	64	64	64
128	128	128	128
256	256	256	256
384	384	384	384
		512	512
		1024	1024
			2048
			3072
			4096
			6144
			7168
			8192
			10240
			12288
			14336

NOTE: The requested maximum bit rate shall always be equal or higher than the requested guaranteed bit rate.

## 5.3 Conversational class Radio Access Bearers

### 5.3.1 CS domain

Table 5.3.1-1: Conversational / speech / UL: [Y] kbps DL: [Y] kbps / CS RAB

UL [Y] kbps for CS voice	DL [Y] kbps for CS voice
4.75	4.75
5.15	5.15
5.9	5.9
6.7	6.7
7.4	7.4
7.95	7.95
10.2	10.2
12.2	12.2

NOTE: It is understood that for speech service the AMR mode may be operated asymmetrically for the uplink and downlink. Multirate AMR can apply a set of UL and DL datarate out of the entire set of NB-AMR rates, where the set is the same for UL and DL, while the RAB configuration is always set up symmetrically (e.g. same rates in the UL and DL).

Table 5.3.1-2: Conversational / speech / UL: [Y] kbps DL: [Y] kbps / CS RAB

UL [Y] kbps for CS voice (WB-AMR)	DL [Y] kbps for CS voice (WB-AMR)
6.60	6.60
8.85	8.85
12.65	12.65
14.25	14.25
15.85	15.85
18.25	18.25
19.25	19.25
23.05	23.05
23.85	23.85

NOTE: It is understood that for speech service the AMR mode may be operated asymmetrically for the uplink and downlink. Multirate AMR can apply a set of UL and DL datarate out of the entire set of WB-AMR rates, where the set is the same for UL and DL, while the RAB configuration is always set up symmetrically (e.g. same rates in the UL and DL).

**Table 5.3.1-3: Conversational / unknown / UL: [Y] kbps DL: [Y] kbps / CS RAB**

UL [Y] kbps for CS video or data	DL [Y] kbps for CS video or data
28.8	28.8
32	32
64	64
NOTE: The data rates selected must be symmetrically for the uplink and downlink.	

## 5.3.2 PS domain

**Table 5.3.2-1: Conversational / speech / UL: [Y] kbps DL: [Y] kbps / PS RAB**

UL [Y] kbps for PS voice	DL [Y] kbps for PS voice
16.8	16.8
17.6	17.6
27.6	27.6
38.8	38.8
39.2	39.2
39.6	39.6
40	40
42.8	42.8

**Table 5.3.2-2: Conversational / unknown / UL: [Y] kbps DL: [Y] kbps / PS RAB**

UL [Y] kbps for PS voice	DL [Y] kbps for PS voice
8	8
16	16

## 5.4 Signalling Radio Bearers (Control Plane)

Table 5.4-1 provides examples of Signalling Radio Bearers (SRBs) which can use configurations as defined in clauses 7, 8 and 9.

**Table 5.4-1: Signalling Radio Bearers (SRBs)**

#	Maximum rate, kbps	Logical channel	PhyCh onto which SRBs are mapped
1	UL:1.7 DL:1.7	DCCH	DPCH
2	UL:3.4 DL:3.4	DCCH	DPCH
3	UL:13.6 DL:13.6	DCCH	DPCH
4	DL:27.2 (alt. 40.8)	DCCH	SCCPCH
5	UL:16.6	CCCH	PRACH
6	DL:30.4 (alt. 45.6)	CCCH	SCCPCH
7	DL:33.2 (alt. 49.8)	BCCH:	SCCPCH
8	DL:24 (alt. 6.4)	PCCH	SCCPCH
9	UL:16.8 (TDD)	SHCCH	PRACH
10	UL:16.8 (TDD)	SHCCH	PRACH or PUSCH
11	DL:16 (TDD)	SHCCH	SCCPCH
12	DL:16 (TDD)	SHCCH	SCCPCH or PUSCH
13	DL: 0.15	DCCH	DPCH
14	UL:27.2 DL:27.2	DCCH	DPCH
15	UL:6.8 DL:6.8	DCCH	DPCH

## 6 Combinations of RABs

Any combination of the listed RABs in clause 5 is possible. Based on the selected RAB or RAB combination, the Radio Resource Management (RRM) inside the RNC selects appropriate Radio Bearers (RB) from clauses 7, 8 or 9.

For a valid configuration the Signalling Radio Bearer listed in subclause 5.4. is existing alone or it is combined with one or multiple RABs of subclause 5.1, 5.2, 5.3. Configuration limitations are defined in clause 5.

## 7 Examples of Radio Bearers and Signalling Radio Bearers for FDD

### 7.1 Combinations on DPCH

#### 7.1.1 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.2.4.1.1 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps with support of DL SF = 512.

This is supported in Release '99.

#### 7.1.2 Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

#### 7.1.2a Stand-alone UL:6.8 DL:6.8 kbps SRBs for DCCH

##### 7.1.2a.1 Uplink

##### 7.1.2a.1.1 Transport channel parameters

##### 7.1.2a.1.1.1 Transport channel parameters for UL:6.8 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	6800	6400	6400	6400
	AMD/UMD PDU header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (alt 0, 148)			
	TFS	TF0, bits	0x148 (alt 1x0)		
		TF1, bits	1x148		
	TTI, ms	20			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
Uplink: Max number of bits/radio frame before rate matching	258				

## 7.1.2a.1.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

## 7.1.2a.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	128
	Max number of DPDCH data bits/radio frame	300
	Puncturing Limit	1

## 7.1.2a.2 Downlink

## 7.1.2a.2.1 Transport channel parameters

## 7.1.2a.2.1.1 Transport channel parameters for DL:6.8 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	6 800	6 400	6 400	6 400
	AMD/UMD PDU header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (alt 0, 148) (note)			
	TFS	TF0, bits	0x148 (alt 1x0) (note)		
		TF1, bits	1x148		
	TTI, ms	20			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
RM attribute	155 to 230				

NOTE: Alternative parameters enable the measurement "transport channel BLER" in the UE.

## 7.1.2a.2.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

## 7.1.2a.2.2 Physical channel parameters

DPCH Downlink	DTX position	Fixed	
	Spreading factor	256	
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	14
		Number of data bits/frame	210

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.3 Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH

See subclause 6.10.2.4.1.3 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.3a Stand-alone UL:27.2 DL:27.2 kbps SRBs for DCCH

#### 7.1.3a.1 Uplink

#### 7.1.3a.1.1 Transport channel parameters

#### 7.1.3a.1.1.1 Transport channel parameters for UL:27.2 kbps SRBs for DCCH

Higher layer	RAB/signalling RB User of Radio Bearer	SRB#1	SRB#2	SRB#3	SRB#4	
		RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH	
	RLC mode	UM	AM	AM	AM	
	Payload sizes, bit	136	128	128	128	
	Max data rate, bps	13600	12800	12800	12800	
	AMD/UMD PDU header, bit	8	16	16	16	
MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148 (alt 0, 148)				
	TFS	TF0, bits	0x148 (alt 1x0)			
		TF1, bits	1x148			
		TF2, bits	2x148			
	TTI, ms	10				
	Coding type	CC 1/3				
	CRC, bit	16				
	Max number of bits/TTI before rate matching	1008				
	Uplink; Max number of bits/radio frame before rate matching	1008				
RM attribute	155 to 185					

#### 7.1.3a.1.1.2 TFCS

TFCS size	3
TFCS	SRBs for DCCH = TF0, TF1, TF2

#### 7.1.3a.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1



## 7.1.3a.2 Downlink

## 7.1.3a.2.1 Transport channel parameters

## 7.1.3a.2.1.1 Transport channel parameters for DL:27.2 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	13600	12800	12800	12800
	AMD/UMD PDU header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (alt 0, 148) (note)			
	TFS	TF0, bits	0x148 (alt 1x0) (note)		
		TF1, bits	1x148		
		TF2, bits	2x148		
	TTI, ms	10			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	1008			
RM attribute	155 to 230				
NOTE: alternative parameters enable the measurement "transport channel BLER" in the UE.					

## 7.1.3a.2.1.2 TFCS

TFCS size	3
TFCS	SRBs for DCCH = TF0, TF1, TF2

## 7.1.3a.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

The minimum UE classes supporting this combination are UL: 12 kbps plus support for 'Maximum number of DPDCH bits transmitted per 10 ms' = 1200, DL: 12 kbps.

This is supported in Release '99.

## 7.1.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.4 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.5 Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.4a of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.6 Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.5 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.7 Conversational / speech / UL:(10.2, 6.7, 5.9, 4.75) DL:(10.2, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.5a of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.8 Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.6 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.9 Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.7 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.10 Conversational / speech / UL:(7.4, 6.7, 5.9, 4.75) DL:(7.4, 6.7, 5.9, 4.75) kbps / CS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.7a of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.11 Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.8 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.12 Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.9 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.12a Conversational / speech / UL:(5.9, 4.75) DL:(5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

#### 7.1.12a.1 Uplink

##### 7.1.12a.1.1 Transport channel parameters

##### 7.1.12a.1.1.1 Transport channel parameters for Conversational / speech / UL:(5.9, 4.75) kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	39, 42, 55 (alt. 0, 39, 42, 55)	53, 63	60	
	Max data rate, bps	5900			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	39, 42, 55 (alt. 0, 39, 42, 55)	53, 63	60	
	TFS	TF0, bits	0x55 (alt. 1x0) (note)	0x63	0x60
		TF1, bits	1x39	1x53	N/A
		TF2, bits	1x42	1x63	N/A
		TF3, bits	1x55	N/A	N/A
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	N/A	N/A	
	Max number of bits/TTI after channel coding	225	213	0	
	Uplink: Max number of bits/radio frame before rate matching	113	107	0	
RM attribute	180-220	170-210	215-256		
NOTE:	In case of using this alternative, CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see subclause 4.2.1.1 in TS 25.212).				

##### 7.1.12a.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.12a.1.1.3 TFCS

TFCS size	8
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF0, TF0), (TF3, TF2, TF0, TF0) (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF0, TF1), (TF3, TF2, TF0, TF1)

7.1.12a.1.2 Physical channel parameters

See subclause 6.10.2.4.1.9.1.2 of [1].

7.1.12a.2 Downlink

7.1.12a.2.1 Transport channel parameters

7.1.12a.2.1.1 Transport channel parameters for Conversational / speech / DL:(5.9, 4.75) kbps / CS RAB

Higher Layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	0, 39, 42, 55	53, 63	60	
	Max data rate, bps	5900			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	0, 39, 42, 55	53, 63	60	
	TFS (note 1)	TF0, bits	1x0 (note 2)	0x63	0x60
		TF1, bits	1x39	1x53	N/A
		TF2, bits	1x42	1x63	N/A
		TF3, bits	1x55	N/A	N/A
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	N/A	0	
	Max number of bits/TTI after channel coding	225	213	0	
RM attribute	180-220	170-210	215-256		
NOTE 1: The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH, (see subclause 4.3 in TS 25.212).					
NOTE 2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBIs are 1 even if there is no data on RAB subflow#1 (see subclause 4.2.1.1 in TS 25.212).					

7.1.12a.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.12a.2.1.3 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF0, TF0), (TF3, TF2, TF0, TF0) (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF0, TF1), (TF3, TF2, TF0, TF1)

7.1.12a.2.2 Physical channel parameters

See subclause 6.10.2.4.1.9.2.2 of [1].

### 7.1.12b Conversational / speech / UL:5.9 DL:5.9 (SF=128) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

#### 7.1.12b.1 Uplink

See subclause 6.10.2.4.1.9.1 of [1].

#### 7.1.12b.2 Downlink

##### 7.1.12b.2.1 Transport channel parameters

See subclause 6.10.2.4.1.9.2.1 of [1].

##### 7.1.12b.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

### 7.1.13 Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.2.4.1.10 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.14 Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.2.4.1.11 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

### 7.1.15 Conversational / unknown / UL:28.8/DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.12 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

### 7.1.16 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.13 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

### 7.1.16a Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 5.

7.1.16a.1 Uplink

7.1.16a.1.1 Transport channel parameters

7.1.16a.1.1.1 Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB subflow #1	RAB subflow #2 (note)	RAB subflow #3 (note)
RLC	Logical channel type		DTCH		
	RLC mode		TM	TM	TM
	Payload sizes, bit		640	60	60
	Max data rate, bps		64 000		
	TrD PDU header, bit		0		
MAC	MAC header, bit		0		
	MAC multiplexing		N/A		
Layer 1	TrCH type		DCH	DCH	DCH
	TB sizes, bit		640	60	60
	TFS	TF0, bits	0x640	0x60	0x60
		TF1, bits	2x640(alt. 4x640)	N/A	N/A
	TTI, ms		20(alt. 40)	20(alt. 40)	20(alt. 40)
	Coding type		TC	TC	TC
	CRC, bit		16	N/A	N/A
	Max number of bits/TTI after channel coding		3 948(alt. 7 884)	0	0
	Uplink: Max number of bits/radio frame before rate matching		1 974(alt. 1 971)	0	0
RM attribute		150 to 195	256	256	
NOTE: RAB subflow #2 and RAB subflow #3 do not exist in Iu interface. UTRAN establishes this additional "dummy" subflows when the RAB is assigned.					

7.1.16a.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.16a.1.1.3 TFCS

TFCS size	4
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow #3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1)

7.1.16a.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2 400
	Puncturing Limit	0.88

## 7.1.16a.2 Downlink

## 7.1.16a.2.1 Transport channel parameters

## 7.1.16a.2.1.1 Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2 (note)	RAB subflow #3 (note)	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	640	60	60	
	Max data rate, bps	64 000			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	640	60	60	
	TFS	TF0, bits	0x640	0x60	0x60
		TF1, bits	2x640(alt. 4x640)	N/A	N/A
	TTI, ms	20(alt. 40)	20(alt. 40)	20(alt. 40)	
	Coding type	TC	TC	TC	
	CRC, bit	16	N/A	N/A	
	Max number of bits/TTI after channel coding	3 948(alt. 7 884)	0	0	
	RM attribute	150 to 195	256	256	
NOTE: RAB subflow #2 and RAB subflow #3 do not exist in lu interface. UTRAN establishes this additional "dummy" subflows when the RAB is assigned.					

## 7.1.16a.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.16a.2.1.3 TFCS

TFCS size	4
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow #3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1)

## 7.1.16a.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2 100

### 7.1.16b Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH+ DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 5.

### 7.1.16b.1 Uplink

#### 7.1.16b.1.1 Transport channel parameters

##### 7.1.16b.1.1.1 Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See subclause 7.1.16a.1.1.1

##### 7.1.16b.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.1.1.1 of [1].

##### 7.1.16b.1.1.3 TFCS

See subclause 7.1.16a.1.1.1

#### 7.1.16b.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2 400
	Puncturing Limit	0.88

### 7.1.16b.2 Downlink

#### 7.1.16b.2.1 Transport channel parameters

##### 7.1.16b.2.1.1 Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See subclause 7.1.16a.2.1.1

##### 7.1.16b.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

##### 7.1.16b.2.1.3 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

##### 7.1.16b.2.1.4 TFCS

TFCS size	4
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow #3, DCCH, DCCH 0.15)=(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0)

#### 7.1.16b.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2 100



### 7.1.17 Conversational / unknown / UL:32 DL:32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.14 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

### 7.1.18 Streaming / unknown / UL:14.4 DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.15 of [1].

The minimum UE classes supporting this combination are UL: 32 kbps with support of turbo encoding and 'Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant' = 1280, DL: 32 kbps.

This is supported in Release '99.

### 7.1.19 Streaming / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.16 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

### 7.1.20 Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.17 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

### 7.1.21 Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.21.1 Uplink

##### 7.1.21.1.1 Transport channel parameters

##### 7.1.21.1.1.1 Transport channel parameters for Streaming / unknown / UL:0 kbps / CS RAB

N/A

##### 7.1.21.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

##### 6.10.2.4.1.18.1.1.3 TFCS

See subclause 6.10.2.4.1.2.1.1.2 of [1].

## 7.1.21.1.2 Physical channel parameters

See subclause 6.10.2.4.1.2.1.2 of [1].

## 7.1.21.2 Downlink

## 7.1.21.2.1 Transport channel parameters

## 7.1.21.2.1.1 Transport channel parameters for Streaming / unknown / DL:64 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	320	
	Max data rate, bps	64000	
	TrD PDU header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	320	
	TFS	TF0, bits	0x320 (alt. 1x0) (note)
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
RM attribute	125-165		

NOTE: Alternative 1x0 is used to have CRC present in all transport formats.

## 7.1.21.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.21.2.1.3 TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

## 7.1.21.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	32	
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 64 kbps plus support for 'Maximum total number of transport blocks received within TTIs that end at the same time' = 16.

This is supported in Release '99.

## 7.1.22 Streaming / unknown / UL:64 DL:0 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.22.1 Uplink

#### 7.1.22.1.1 Transport channel parameters

##### 7.1.22.1.1.1 Transport channel parameters for Streaming / unknown / UL:64 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	320	
	Max data rate, bps	64000	
	TrD PDU header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	320	
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
	Uplink: Max number of bits/radio frame before rate matching	2019	
RM attribute	125-165		

##### 7.1.22.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

##### 7.1.22.1.1.3 TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

##### 7.1.22.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

## 7.1.22.2 Downlink

### 7.1.22.2.1 Transport channel parameters

7.1.22.2.1.1 Transport channel parameters for Streaming / unknown / DL:0 kbps / CS RAB  
N/A.

7.1.22.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH  
See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.22.2.1.3 TFCS  
See subclause 6.10.2.4.1.2.2.1.2 of [1].

### 7.1.22.2.2 Physical channel parameters

See subclause 6.10.2.4.1.2.2.2 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 12 kbps.

This is supported in Release '99.

## 7.1.23 Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.23.1 Uplink

See subclause 6.10.2.4.1.23.1 of [1].

### 7.1.23.2 Downlink

#### 7.1.23.2.1 Transport channel parameters

See subclause 6.10.2.4.1.23.2.1 of [1].

#### 7.1.23.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot		2
	Number of TPC bits/slot		2
	Number of Pilot bits/slot		4
DPDCH	Number of data bits/slot		32
	Number of data bits/frame		480

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps. For the alternative UL configuration, the minimum UE class supporting this combination is UL: 32 kbps.

This is supported in Release '99.

## 7.1.24 Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.24.1 Uplink

See subclause 6.10.2.4.1.23a.1 of [1].

### 7.1.24.2 Downlink

#### 7.1.24.2.1 Transport channel parameters

See subclause 6.10.2.4.1.23a.2.1 of [1].

#### 7.1.24.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		128
DPCCH	Number of TFCI bits/slot	2	
	Number of TPC bits/slot	2	
	Number of Pilot bits/slot	4	
DPDCH	Number of data bits/slot	32	
	Number of data bits/frame	480	

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

## 7.1.25 Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.25.1 Uplink

See subclause 6.10.2.4.1.23b.1 of [1].

### 7.1.25.2 Downlink

#### 7.1.25.2.1 Transport channel parameters

See subclause 6.10.2.4.1.23b.2.1 of [1].

#### 7.1.25.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		128
DPCCH	Number of TFCI bits/slot	2	
	Number of TPC bits/slot	2	
	Number of Pilot bits/slot	4	
DPDCH	Number of data bits/slot	32	
	Number of data bits/frame	480	

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

## 7.1.26 Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.26.1 Uplink

See subclause 6.10.2.4.1.23c.1 of [1].

### 7.1.26.2 Downlink

#### 7.1.26.2.1 Transport channel parameters

See subclause 6.10.2.4.1.23c.2.1 of [1].

#### 7.1.26.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
DPCCH	Number of TFCl bits/slot	8	
	Number of TPC bits/slot	4	
	Number of Pilot bits/slot	8	
DPDCH	Number of data bits/slot	60	
	Number of data bits/frame	900	

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

## 7.1.27 Interactive or background / UL:32 DL:32 kbps / PS RAB (20 ms TTI)+ UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.27.1 Uplink

See subclause 6.10.2.4.1.23d.1 of [1].

## 7.1.27.2 Downlink

## 7.1.27.2.1 Transport channel parameters

## 7.1.27.2.1.1 Transport channel parameters for Interactive or background / DL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320 alt.640	
	Max data rate, bps	32000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336 alt. 656	
	TFS	TF0, bits	0x336 alt. 0x656
		TF1, bits	1x336 alt. 1x656
		TF2, bits	2x336 alt. none
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2124 alt. 2028	
	RM attribute	135-175 alt. tbd	

## 7.1.27.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.27.2.1.3 TFCS

TFCS size	6 alt. 4
TFCS	(32 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1) alt. (32 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF0,TF1), (TF1,TF1)

## 7.1.27.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible or fixed
	Spreading factor	64
DPCCH	Number of TFCI bits/slot	8
	Number of TPC bits/slot	4
	Number of Pilot bits/slot	8
DPDCH	Number of data bits/slot	60
	Number of data bits/frame	900

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99, the alt. is supported in Release 5.

## 7.1.28 Interactive or background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

## 7.1.28.1 Uplink

### 7.1.28.1.1 Transport channel parameters

#### 7.1.28.1.1.1 Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	64000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	3x336
		TF4, bits	4x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4236	
	Uplink: Max number of bits/radio frame before rate matching	2118	
	RM attribute	130-170	

#### 7.1.28.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

#### 7.1.28.1.1.3 TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

### 7.1.28.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.96

## 7.1.28.2 Downlink

### 7.1.28.2.1 Transport channel parameters

See subclause 6.10.2.4.1.23.2.1 of [1].



## 7.1.28.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot	2	
	Number of TPC bits/slot	2	
	Number of Pilot bits/slot	4	
DPDCH	Number of data bits/slot	32	
	Number of data bits/frame	480	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 12 plus support for turbo decoding and 'Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant' = 640. The minimum UE class to support the alternative DL configuration is DL: 12kbps.

This is supported in Release '99.

## 7.1.29 Interactive or background / UL:32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

## 7.1.29.1 Uplink

See subclause 6.10.2.4.1.25.1 of [1].

## 7.1.29.2 Downlink

## 7.1.29.2.1 Transport channel parameters

See subclause 6.10.2.4.1.25.2.1 of [1].

## 7.1.29.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot	8	
	Number of TPC bits/slot	4	
	Number of Pilot bits/slot	8	
DPDCH	Number of data bits/slot	140	
	Number of data bits/frame	2100	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps. The minimum UE class to support the alternative UL configuration (10ms TTI) is UL: 32kbps.

This is supported in Release '99.

## 7.1.30 Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

## 7.1.30.1 Uplink

See subclause 6.10.2.4.1.26.1 of [1].

## 7.1.30.2 Downlink

See subclause 7.1.29.2.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

## 7.1.31 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.31.1 Uplink

See subclause 6.10.2.4.1.27.1 of [1].

### 7.1.31.2 Downlink

#### 7.1.31.2.1 Transport channel parameters

See subclause 6.10.2.4.1.27.2.1 of [1].

#### 7.1.31.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
DPCCH	Number of TFCI bits/slot	8	
	Number of TPC bits/slot	8	
	Number of Pilot bits/slot	16	
DPDCH	Number of data bits/slot	288	
	Number of data bits/frame	4320	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

## 7.1.32 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.32.1 Uplink

See subclause 6.10.2.4.1.28.1 of [1].

### 7.1.32.2 Downlink

See subclause 7.1.31.2.

The minimum UE classes supporting this combination are UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 128kbps.

This is supported in Release '99.

## 7.1.33 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

### 7.1.33.1 Uplink

See subclause 6.10.2.4.1.29.1 of [1].

### 7.1.33.2 Downlink

#### 7.1.33.2.1 Transport channel parameters

See subclause 6.10.2.4.1.29.2.1 of [1].

#### 7.1.33.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

### 7.1.34 Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

#### 7.1.34.1 Uplink

See subclause 6.10.2.4.1.30.1 of [1].

#### 7.1.34.2 Downlink

See subclause 7.1.33.2.

The minimum UE classes supporting this combination are UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 128kbps.

This is supported in Release '99.

### 7.1.35 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

#### 7.1.35.1 On DPCH

##### 7.1.35.1.1 Uplink

See subclause 6.10.2.4.1.31.1 of [1].

##### 7.1.35.1.2 Downlink

###### 7.1.35.1.2.1 Transport channel parameters

See subclause 6.10.2.4.1.31.2.1 of [1].

## 7.1.35.1.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		8
	Number of DPDCH		1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
Number of data bits/frame		9120	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps plus support for 'Maximum number of physical channel bits received in any 10ms interval' = 9600. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 384kbps.

This is supported in Release '99.

## 7.1.35.2 On PDSCH and DPCH

## 7.1.35.2.1 Uplink

See subclause 6.10.2.4.1.24.1 of [1].

## 7.1.35.2.2 Downlink

## 7.1.35.2.2.1 Transport channel parameters

## 7.1.35.2.2.1.1 Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	384000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	18	
	MAC multiplexing	Logical channel multiplexing on a frame by frame basis	
Layer 1	TrCH type	DSCH	
	TB sizes, bit	354	
	TFS	TF0, bits	0x354
		TF1, bits	1x354
		TF2, bits	2x354
		TF3, bits	4 x354
		TF4, bits	8 x354
		TF5, bits	N/A (alt. 12x354)
	TF6, bits	N/A (alt. 16x354)	
	TTI, ms	10(alt. 20)	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8892(alt. 17784)	
RM attribute	135-175		

## 7.1.35.2.2.1.2 Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.35.2.2.1.3 TFCS

PDSCH	TFCS size	5 (alt.7)
	TFCS	256 kbps RAB =TF0, TF1, TF2, TF3, TF4 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6)
DPCH Downlink associated with PDSCH	TFCS size	2
	TFCS	SRBs for DCCH = TF0, TF1

## 7.1.35.2.2.2 Physical channel parameters

PDSCH	RAB or SRB, TrCh		Interactive or background / 256 kbps / PS RAB, DSCH
	DTX position		N/A (SingleTrCH)
	Minimum spreading factor		8
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh		3.4 kbps SRB for DCCH, DCH
	DTX position		N/A (SingleTrCH)
	Spreading factor		256
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	12
Number of data bits/frame		180	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps plus support for PDSCH plus support for 'Maximum number of physical channel bits received in any 10ms interval' = 9600. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 384kbps plus support for PDSCH.

This is supported in Release '99.

## 7.1.36 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

## 7.1.36.1 On DPCH

## 7.1.36.1.1 Uplink

See subclause 6.10.2.4.1.32.1 of [1].

## 7.1.36.1.2 Downlink

## 7.1.36.1.2.1 Transport channel parameters

See subclause 6.10.2.4.1.32.2.1 of [1].

## 7.1.36.1.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		8
	Number of DPDCH		1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
Number of data bits/frame		9120	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 768kbps.

This is supported in Release '99.

#### 7.1.36.2 On PDSCH and DPCH

See subclause 6.10.2.4.2.2 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps plus support for PDSCH. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 768kbps.

This is supported in Release '99.

#### 7.1.37 Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 7.1.37.1 Uplink

See subclause 6.10.2.4.1.33.1 of [1].

##### 7.1.37.2 Downlink

See subclause 7.1.36.1.2.

The minimum UE classes supporting this combination are UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 384kbps. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 768kbps.

This is supported in Release '99.

#### 7.1.38 Interactive or background / UL:384 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 7.1.38.1 Uplink

See subclause 6.10.2.4.1.34.1 of [1].

##### 7.1.38.2 Downlink

See subclause 7.1.36.1.2.

The minimum UE classes supporting this combination are UL: 384kbps, DL: 384kbps. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 768kbps.

This is supported in Release '99.

#### 7.1.39 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 7.1.39.1 On DPCH

##### 7.1.39.1.1 Uplink

See subclause 6.10.2.4.1.35.1 of [1].

### 7.1.39.1.2 Downlink

#### 7.1.39.1.2.1 Transport channel parameters

See subclause 6.10.2.4.1.35.2.1 of [1].

#### 7.1.39.1.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		4
Number of DPCH			3
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		8
	Number of Pilot bits/slot		16
DPDCH	Number of data bits/slot		1248
	Number of data bits/frame		18720

The minimum UE classes supporting this combination are UL: 64kbps, DL: 2048kbps plus support for 'Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative) and 'Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative).

This is supported in Release '99.

### 7.1.39.2 On PDSCH and DPCH

See subclause 6.10.2.4.2.3 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 2048kbps plus support for 'Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative) and 'Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative).

This is supported in Release '99.

### 7.1.40 Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.40.1 Uplink

See subclause 6.10.2.4.1.28.1 of [1].

#### 7.1.40.2 Downlink

See subclause 7.1.39.1.2.

The minimum UE classes supporting this combination are UL: 128 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 2048 kbps plus support for 'Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative) and 'Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative).

This is supported in Release '99.

### 7.1.41 Interactive or background / UL:384 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.41.1 Uplink

See subclause 6.10.2.4.1.34.1 of [1].

### 7.1.41.2 Downlink

See subclause 7.1.39.1.2.

The minimum UE classes supporting this combination are UL: 384 kbps, DL: 2048 kbps plus support for 'Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative) and 'Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative).

This is supported in Release '99.

## 7.1.42 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.42.1 Uplink

See subclause 6.10.2.4.1.38.1 of [1].

### 7.1.42.2 Downlink

#### 7.1.42.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38.2.1 of [1].

#### 7.1.42.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
		Spreading factor	
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		60
	Number of data bits/frame		900

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps.

This is supported in Release '99.

## 7.1.43 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.38a of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 12 kbps plus support for 'Maximum number of simultaneous transport channels' = 5.

This is supported in Release '99.



### 7.1.44 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.44.1 Uplink

See subclause 6.10.2.4.1.38b.1 of [1].

#### 7.1.44.2 Downlink

##### 7.1.44.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38b.2.1 of [1].

##### 7.1.44.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

The minimum UE classes supporting this combination are UL: 64kbps, DL: 32 kbps.

This is supported in Release '99.

### 7.1.45 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.45.1 Uplink

See subclause 6.10.2.4.1.38c.1 of [1].

#### 7.1.45.2 Downlink

##### 7.1.45.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38c.2.1 of [1].

##### 7.1.45.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

**7.1.45a Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:32 DL:32 kbps / PS RAB (20ms TTI)+  
UL:3.4 DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

**7.1.45a.1 Uplink**

**7.1.45a.1.1 Transport channel parameters**

**7.1.45a.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB**

See subclause 6.10.2.4.1.4.1.1.1 of [1]

**7.1.45a.1.1.2 Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB**

See subclause 6.10.2.4.1.23d.1.1.1 of [1]

**7.1.45a.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.1.1.1 of [1]

**7.1.45a.1.1.4 TFCS**

TFCS size	18
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 32 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF1,TF2,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF1,TF2,TF1)

**7.1.45a.1.2 Physical channel parameters**

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1.0

**7.1.45a.2 Downlink**

**7.1.45a.2.1 Transport channel parameters**

**7.1.45a.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB**

See subclause 6.10.2.4.1.4.2.1.1 of [1]

**7.1.45a.2.1.2 Transport channel parameters for Interactive or background / DL:32 kbps / PS RAB**

See subclause 6.10.2.4.1.23d.2.1.1 of [1]

**7.1.45a.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.45a.2.1.4 TFCS

TFCS size	18
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 32 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF1,TF2,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF1,TF2,TF1)

## 7.1.45a.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

7.1.46 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:64 DL:64 kbps / PS RAB +  
Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

## 7.1.46.1 Uplink

See subclause 6.10.2.4.1.38d.1 of [1].

## 7.1.46.2 Downlink

## 7.1.46.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38d.2.1 of [1].

## 7.1.46.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

7.1.47 Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95  
5.9 4.75) kbps / CS RAB + Interactive or background / UL:0 DL:0  
kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.38e of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 12 kbps plus support for 'Maximum number of simultaneous transport channels' = 5.

This is supported in Release '99.

### 7.1.48 Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.48.1 Uplink

See subclause 6.10.2.4.1.38f.1 of [1].

#### 7.1.48.2 Downlink

##### 7.1.48.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38f.2.1 of [1].

##### 7.1.48.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

The minimum UE classes supporting this combination are UL: 64kbps, DL: 32 kbps.

This is supported in Release '99.

### 7.1.49 Conversational / speech / UL: (12.2 7.95 5.9 4.75) kbps DL: (12.2 7.95 5.9 4.75) / CS RAB + Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.49.1 Uplink

See subclause 6.10.2.4.1.38g.1 of [1].

#### 7.1.49.2 Downlink

##### 7.1.49.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38g.2.1 of [1].

## 7.1.49.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
Number of data bits/frame		900	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

**7.1.50 Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

## 7.1.50.1 Uplink

See subclause 6.10.2.4.1.38h.1 of [1].

## 7.1.50.2 Downlink

## 7.1.50.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38h.2.1 of [1].

## 7.1.50.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
Number of data bits/frame		2100	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

**7.1.51 Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

## 7.1.51.1 Uplink

See subclause 6.10.2.4.1.38i.1 of [1].

## 7.1.51.2 Downlink

## 7.1.51.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38i.2.1 of [1].

## 7.1.51.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
Number of data bits/frame		2100	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

**7.1.52 Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL: (12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

## 7.1.52.1 Uplink

See subclause 6.10.2.4.1.38j.1 of [1].

## 7.1.52.2 Downlink

## 7.1.52.2.1 Transport channel parameters

See subclause 6.10.2.4.1.38j.2.1 of [1].

## 7.1.52.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
Number of data bits/frame		4320	

The minimum UE classes supporting this combination are UL: 64kbp, DL: 128kbps.

This is supported in Release '99.

**7.1.53 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH**

## 7.1.53.1 Uplink

See subclause 6.10.2.4.1.39.1 of [1].

## 7.1.53.2 Downlink

## 7.1.53.2.1 Transport channel parameters

See subclause 6.10.2.4.1.39.2.1 of [1].

## 7.1.53.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
Number of data bits/frame		2100	

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

### 7.1.54 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH

## 7.1.54.1 Uplink

See subclause 6.10.2.4.1.40.1 of [1].

## 7.1.54.2 Downlink

See subclause 7.1.53.2.

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

### 7.1.55 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

## 7.1.55.1 Uplink

See subclause 6.10.2.4.1.41.1 of [1].

## 7.1.55.2 Downlink

## 7.1.55.2.1 Transport channel parameters

See subclause 6.10.2.4.1.41.2.1 of [1].

## 7.1.55.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
Number of data bits/frame		4320	

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in Release '99.

### 7.1.56 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.56.1 On DPCH

##### 7.1.56.1.1 Uplink

See subclause 6.10.2.4.1.42.1 of [1].

##### 7.1.56.1.2 Downlink

###### 7.1.56.1.2.1 Transport channel parameters

See subclause 6.10.2.4.1.42.2.1 of [1].

###### 7.1.56.1.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		8
	Number of DPDCH		1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
Number of data bits/frame		9120	

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 384 kbps.

This is supported in Release '99.

#### 7.1.56.2 On PDSCH and DPCH

##### 7.1.56.2.1 Uplink

See subclause 6.10.2.4.1.40.1 of [1].

##### 7.1.56.2.2 Downlink

###### 7.1.56.2.2.1 Transport channel parameters

###### 7.1.56.2.2.1.1 Transport channel parameters for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

###### 7.1.56.2.2.1.2 Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See subclause 6.10.2.4.2.1.2.1.1 of [1].



## 7.1.56.2.2.1.3 Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1. of [1].

## 7.1.56.2.2.1.4 TFCS

PDSCH	TFCS size	5 (alt.7)
	TFCS	256 kbps RAB = TF0, TF1, TF2, TF3, TF4 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6)
DPCH Downlink associated with PDSCH	TFCS size	6
	TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH) = (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1)

## 7.1.56.2.2.2 Physical channel parameters

PDSCH	RAB or SRB, TrCh		Interactive or background / 256 kbps / PS RAB, DSCH
	DTX position		N/A (SingleTrCH)
	Minimum spreading factor		4
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh		Conversational / speech / 12.2 kbps / CS RAB, DCH + 3.4 kbps SRBs for DCCH. DCH
	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
Number of data bits/frame		480	

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 384 kbps plus support of PDSCH.

This is supported in Release '99.

### 7.1.57 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

## 7.1.57.1 On DPCH

## 7.1.57.1.1 Uplink

See subclause 6.10.2.4.1.43.1 of [1].

## 7.1.57.1.2 Downlink

## 7.1.57.1.2.1 Transport channel parameters

See subclause 6.10.2.4.1.43.2.1 of [1].

## 7.1.57.1.2.2 Physical channel parameters

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 384. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 768kbps.

This is supported in Release '99.

### 7.1.57.2 On PDSCH and DPCH

See subclause 6.10.2.4.2.5 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 384 kbps plus support for PDSCH. The minimum UE class to support the alternative DL configuration (20ms TTI) is DL: 768kbps.

This is supported in Release '99.

### 7.1.58 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.58.1 Uplink

See subclause 6.10.2.4.2.6.1 of [1].

#### 7.1.58.2 Downlink

##### 7.1.58.2.1 Transport channel parameters

See subclause 6.10.2.4.1.44.2.1 of [1].

##### 7.1.58.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		4
	Number of DPDCH		3
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	1248
		Number of data bits/frame	18720

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 2048 kbps plus support for 'Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative) and 'Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative).

This is supported in Release '99.

### 7.1.59 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.59.1 Uplink

See subclause 6.10.2.4.1.44.1 of [1].

#### 7.1.59.2 Downlink

See subclause 7.1.58.2.

The minimum UE classes supporting this combination are UL: 384 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 2048 kbps plus support for 'Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant' = 40960 (81920 for the

TTI=20ms alternative) and 'Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant' = 40960 (81920 for the TTI=20ms alternative).

This is supported in Release '99.

**7.1.60 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

**7.1.60.1 Uplink**

See subclause 6.10.2.4.1.45.1 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

**7.1.61 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

**7.1.61.1 Uplink**

See subclause 6.10.2.4.1.4.1 of [1].

**7.1.61.2 Downlink**

**7.1.61.2.1 Transport channel parameters**

**7.1.61.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB**

See subclause 6.10.2.4.1.4.2.1.1 of [1].

**7.1.61.2.1.2 Transport channel parameters for Streaming / unknown / DL:64 kbps / CS RAB**

See subclause 7.1.21.2.1.1.

**7.1.61.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.2.1.1 of [1].

**7.1.61.2.1.4 TFCS**

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB , DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)

## 7.1.61.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

The minimum UE classes supporting this combination are UL: 12 kbps plus support for 'Maximum number of simultaneous transport channels' = 5, DL: 128kbps.

This is supported in Release '99.

### 7.1.62 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.49 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

### 7.1.63 Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.49a of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

### 7.1.64 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.50 of [1].

The minimum UE classes supporting this combination are UL: 128kbps, DL: 128kbps. The minimum UE class to support the alternative UL combination (40ms TTI) is UL: 384kbps.

This is supported in Release '99.

### 7.1.65 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.65.1 Uplink

See subclause 6.10.2.4.1.51.1 of [1].

## 7.1.65.2 Downlink

### 7.1.65.2.1 Transport channel parameters

See subclause 6.10.2.4.1.51.2.1 of [1].

### 7.1.65.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot	8	
	Number of TPC bits/slot	8	
	Number of Pilot bits/slot	16	
DPDCH	Number of data bits/slot	288	
	Number of data bits/frame	4320	

The minimum UE classes supporting this combination are UL: 128kbps, DL: 128kbps. The minimum UE class to support the alternative UL combination (40ms TTI) is UL: 384kbps.

This is supported in Release '99.

## 7.1.66 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

### 7.1.66.1 Uplink

See subclause 6.10.2.4.1.51a.1 of [1].

### 7.1.66.2 Downlink

#### 7.1.66.2.1 Transport channel parameters

See subclause 6.10.2.4.1.51a.2.1 of [1].

#### 7.1.66.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot	8	
	Number of TPC bits/slot	4	
	Number of Pilot bits/slot	8	
DPDCH	Number of data bits/slot	140	
	Number of data bits/frame	2100	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

### 7.1.67 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.67.1 Uplink

See subclause 6.10.2.4.1.51b.1 of [1].

#### 7.1.67.2 Downlink

See subclause 7.1.65.2.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

### 7.1.68 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.68.1 Uplink

See subclause 6.10.2.4.1.52.1 of [1].

#### 7.1.68.2 Downlink

##### 7.1.68.2.1 Transport channel parameters

See subclause 6.10.2.4.1.52.2.1 of [1].

##### 7.1.68.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

The minimum UE classes supporting this combination are UL: 128kbps, DL: 384kbps. The minimum UE class to support the alternative UL combination (40ms TTI) is UL: 384kbps.

This is supported in Release '99.

### 7.1.69 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.69.1 Uplink

See subclause 6.10.2.4.1.53.1 of [1].

7.1.69.2 Downlink

See subclause 7.1.68.2.

The minimum UE classes supporting this combination are UL: 384kbps, DL: 384kbps.

This is supported in Release '99.

7.1.70 Interactive or background / UL:64 DL:128 kbps / PS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

7.1.70.1 Uplink

See subclause 6.10.2.4.1.27.1 of [1].

7.1.70.2 Downlink

7.1.70.2.1 Transport channel parameters

7.1.70.2.1.1 Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See subclause 6.10.2.4.1.27.2.1.1 of [1].

7.1.70.2.1.2 Transport channel parameters for Streaming / unknown / DL:64 kbps / CS RAB

See subclause 7.1.21.2.1.1.

7.1.70.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.70.2.1.4 TFCS

TFCS size	50
TFCS	(I/B 128 kbps RAB, Str. 64 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF3, TF2, TF0), (TF4, TF2, TF0), (TF0, TF3, TF0), (TF1, TF3, TF0), (TF2, TF3, TF0), (TF3, TF3, TF0), (TF4, TF3, TF0), (TF0, TF4, TF0), (TF1, TF4, TF0), (TF2, TF4, TF0), (TF3, TF4, TF0), (TF4, TF4, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1), (TF3, TF2, TF1), (TF4, TF2, TF1), (TF0, TF3, TF1), (TF1, TF3, TF1), (TF2, TF3, TF1), (TF3, TF3, TF1), (TF4, TF3, TF1), (TF0, TF4, TF1), (TF1, TF4, TF1), (TF2, TF4, TF1), (TF3, TF4, TF1), (TF4, TF4, TF1)

7.1.70.2.2 Physical channel parameters

DPCH	DTX position	Flexible or fixed	
Downlink	Spreading factor	8	
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
DPDCH	Number of data bits/slot	608	
	Number of data bits/frame	9120	

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps.

This is supported in Release '99.

### 7.1.71 Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.71.1 Uplink

See subclause 6.10.2.4.1.56.1 of [1].

#### 7.1.71.2 Downlink

##### 7.1.71.2.1 Transport channel parameters

See subclause 6.10.2.4.1.56.2.1 of [1].

##### 7.1.71.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
		Number of data bits/frame	480

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo encoding, DL: 32kbps plus support for 5 AM entities.

This is supported in Release '99.

### 7.1.72 Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### 7.1.72.1 Uplink

See subclause 6.10.2.4.1.57.1 of [1].

#### 7.1.72.2 Downlink

##### 7.1.72.2.1 Transport channel parameters

See subclause 6.10.2.4.1.57.2.1 of [1].



## 7.1.72.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps plus support for 5 AM entities.

This is supported in Release '99.

### 7.1.73 Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: This RAB combination is also applicable for Streaming MBMS PTP.

## 7.1.73.1 Uplink

See subclause 6.10.2.4.1.58.1 of [1].

## 7.1.73.2 Downlink

## 7.1.73.2.1 Transport channel parameters

See subclause 6.10.2.4.1.58.2.1 of [1].

## 7.1.73.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps plus support for 5 AM entities.

This is supported in Release '99.

### 7.1.73a Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH – Alternative

This configuration optimises the flexibility of the Transport Format Selection by adding an omitted Transport Format, to the transport channel parameters given in the reference subclause 6.10.2.4.1.58 of [1], for the downlink, transport channel Streaming / unknown / DL:64 kbps PS RAB.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps plus support for 5 AM entities.

This is supported in Release '99.

NOTE: This RAB combination is also applicable for Streaming MBMS PTP.

7.1.73a.1 Uplink

See subclause 6.10.2.4.1.58.1 of [1]

7.1.73a.2 Downlink

7.1.73a.2.1 Transport channel parameters

7.1.73a.2.1.1 Transport channel parameters for Streaming / unknown / DL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	64000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	3x656
		TF4, bits	4x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	8076		
RM attribute	125-165		

7.1.73a.2.1.2 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1].

7.1.73a.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.73a.2.1.4 TFCS

TFCS size	20
TFCS	(64 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF4,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF4,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF4,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1), (TF4,TF1,TF1),

## 7.1.73a.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
Number of data bits/frame		2100	

## 7.1.74 Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

NOTE: This RAB combination is also applicable for Streaming MBMS PTP.

## 7.1.74.1 Uplink

See subclause 6.10.2.4.1.58a.1 of [1].

## 7.1.74.2 Downlink

## 7.1.74.2.1 Transport channel parameters

See subclause 6.10.2.4.1.58a.2.1 of [1].

## 7.1.74.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
Number of data bits/frame		4320	

## 7.1.75 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:8 kbps / PS RAB – TF0 contains zero Transport Blocks .

NOTE: Conversational / unknown / DL:8 kbps / PS RAB – TF0 contains zero Transport Blocks.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

## 7.1.75.1 Uplink

## 7.1.75.1.1 Transport channel parameters

## 7.1.75.1.1.1 Transport channel parameters for Conversational / unknown / UL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	<b>RAB</b>	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Uplink: Max number of bits/radio frame before rate matching	261	
	RM attribute	135-175	

## 7.1.75.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1]

## 7.1.75.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

## 7.1.75.1.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

## 7.1.75.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

## 7.1.75.2 Downlink

## 7.1.75.2.1 Transport channel parameters

## 7.1.75.2.1.1 Transport channel parameters for Conversational / unknown / DL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	RM attribute	135-175	

## 7.1.75.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1].

## 7.1.75.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.75.2.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

## 7.1.75.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

## 7.1.76 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size.

NOTE: Conversational / unknown / DL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64 kbps.

This is supported in Release '99.

7.1.76.1 Uplink

7.1.76.1.1 Transport channel parameters

7.1.76.1.1.1 Transport channel parameters for Conversational / unknown / UL:8 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Uplink: Max number of bits/radio frame before rate matching	261	
	RM attribute	135-175	

7.1.76.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1]

7.1.76.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

7.1.76.1.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

7.1.76.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

## 7.1.76.2 Downlink

## 7.1.76.2.1 Transport channel parameters

## 7.1.76.2.1.1 Transport channel parameters for Conversational / unknown / DL:8 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	RM attribute	135-175	

## 7.1.76.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1].

## 7.1.76.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.76.2.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

## 7.1.76.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible or fixed
	Spreading factor	64
DPCCH	Number of TFCI bits/slot	8
	Number of TPC bits/slot	4
	Number of Pilot bits/slot	8
DPDCH	Number of data bits/slot	60
	Number of data bits/frame	900

**7.1.77 Conversational / unknown / UL:16 DL:16 kbps / PS RAB +  
Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

NOTE: Conversational / unknown / UL:16 kbps / PS RAB – TF0 contains zero Transport Blocks.

NOTE: Conversational / unknown / DL:16 kbps / PS RAB – TF0 contains zero Transport Blocks.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

**7.1.77.1 Uplink**

**7.1.77.1.1 Transport channel parameters**

**7.1.77.1.1.1 Transport channel parameters for Conversational / unknown / UL:16 kbps / PS RAB**

Higher layer	RAB/Signalling RB	<b>RAB</b>	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Uplink: Max number of bits/radio frame before rate matching	519	
RM attribute	135-175		

**7.1.77.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB**

See subclause 6.10.2.4.1.38b.1.1.2 of [1]

**7.1.77.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.1.1.1 of [1]

**7.1.77.1.1.4 TFCS**

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)



## 7.1.77.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

## 7.1.77.2 Downlink

## 7.1.77.2.1 Transport channel parameters

## 7.1.77.2.1.1 Transport channel parameters for Conversational / unknown / DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
RM attribute	135-175		

## 7.1.77.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1. 38b.2.1.2 of [1]

## 7.1.77.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.77.2.1.4 TFCS

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

## 7.1.77.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

### 7.1.78 Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size.

NOTE: Conversational / unknown / DL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

## 7.1.78.1 Uplink

## 7.1.78.1.1 Transport channel parameters

## 7.1.78.1.1.1 Transport channel parameters for Conversational / unknown / UL:16 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	<b>RAB</b>	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Uplink: Max number of bits/radio frame before rate matching	519	
RM attribute	135-175		

## 7.1.78.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1]

7.1.78.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

7.1.78.1.1.4 TFCS

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

7.1.78.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

7.1.78.2 Downlink

7.1.78.2.1 Transport channel parameters

7.1.78.2.1.1 Transport channel parameters for Conversational / unknown / DL:16 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	2076		
RM attribute	135-175		

7.1.78.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1]

7.1.78.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.78.2.1.4 TFCS

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

## 7.1.78.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
Number of data bits/frame		900	

**7.1.79 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or Background / UL:0 DL:0 kbps / PS RAB + Interactive  
or Background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps  
SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

## 7.1.79.1 Uplink

## 7.1.79.1.1 Transport channel parameters

## 7.1.79.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

7.1.79.1.1.2 Transport channel parameters for Interactive or Background / UL:0 + UL:0 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB
RLC	Logical channel type	DTCH	DTCH
	RLC mode	AM	AM
	Payload sizes, bit	320	320
	Max data rate, bps	0	0
	AMD PDU header, bit	16	16
MAC	MAC header, bit	4	4
	MAC multiplexing	2 logical channel multiplexing	
Layer 1	TrCH type	DCH	
	TB sizes, bit	340	
	TFS	TF0, bits	
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	0	
	Uplink: Max number of bits/radio frame before rate matching	0	
	RM attribute	130-170	

7.1.79.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.79.1.1.4 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1)

7.1.79.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.84

7.1.79.2 Downlink

7.1.79.2.1 Transport channel parameters

7.1.79.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

7.1.79.2.1.2 Transport channel parameters for Interactive or Background / DL:0 + DL:0 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB
RLC	Logical channel type	DTCH	DTCH
	RLC mode	AM	AM
	Payload sizes, bit	320	320
	Max data rate, bps	0	0
	AMD PDU header, bit	16	16
MAC	MAC header, bit	4	4
	MAC multiplexing	2 logical channel multiplexing	
Layer 1	TrCH type	DCH	
	TB sizes, bit	340	
	TFS	TF0, bits	0x340
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	0	
	RM attribute	130-170	

7.1.79.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.79.2.1.4 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1)

7.1.79.2.2 Physical channel parameters

DPCH Downlink	DTX position	Fixed
	Spreading factor	128
DPCCH	Number of TFCI bits/slot	0
	Number of TPC bits/slot	2
	Number of Pilot bits/slot	4
DPDCH	Number of data bits/slot	34
	Number of data bits/frame	510

- 7.1.79a Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
- + Interactive or background / UL:0 DL:0 kbps / PS RAB
- + Interactive or background / UL:0 DL:0 kbps / PS RAB
- + UL:3.4 DL:3.4 kbps SRBs for DCCH (L1 multiplexing) (FDD)

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in Release '99.

7.1.79a.1 Uplink

7.1.79a.1.1 Transport channel parameters

7.1.79a.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

7.1.79a.1.1.2 Transport channel parameters for Interactive or background / UL:0 kbps / PS RAB

See subclause 6.10.2.4.1.38a.1.1.2 of [1].

7.1.79a.1.1.3 Transport channel parameters for Interactive or background / UL:0 kbps / PS RAB

See subclause 6.10.2.4.1.38a.1.1.2 of [1].

7.1.79a.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.79a.1.1.5 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0 kbps RAB, 0 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0, TF0), (TF0, TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF0, TF1)

7.1.79a.1.2 Physical channel parameters

See subclause 6.10.2.4.1.38a.1.2 of [1].

7.1.79a.2 Downlink

7.1.79a.2.1 Transport channel parameters

7.1.79a.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

7.1.79a.2.1.2 Transport channel parameters for Interactive or background / DL:0 kbps / PS RAB

See subclause 6.10.2.4.1.38a.2.1.2 of [1].

7.1.79a.2.1.3 Transport channel parameters for Interactive or background / DL:0 kbps / PS RAB

See subclause 6.10.2.4.1.38a.2.1.2 of [1].

7.1.79a.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.79a.2.1.5 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0 kbps RAB, 0 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0, TF0), (TF0, TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF0, TF1)

7.1.79a.2.2 Physical channel parameters

See subclause 6.10.2.4.1.38a.2.2 of [1].

**7.1.80 Conversational / unknown / UL:64 DL:64 kbps / CS RAB +  
Interactive or Background / UL:8 DL:8 kbps / PS RAB + Interactive  
or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps  
SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

7.1.80.1 Uplink

7.1.80.1.1 Transport channel parameters

7.1.80.1.1.1 Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See subclause 6.10.2.4.1.13.1.1.1 of [1].

7.1.80.1.1.2 Transport channel parameters for Interactive or Background / UL:8 + UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.1.1.1 of [1]

7.1.80.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.80.1.1.4 TFCS

TFCS size	8
TFCS	(64 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

7.1.80.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.72



## 7.1.80.2 Downlink

### 7.1.80.2.1 Transport channel parameters

#### 7.1.80.2.1.1 Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See subclause 6.10.2.4.1.13.2.1.1 of [1].

#### 7.1.80.2.1.2 Transport channel parameters for Interactive or Background / DL:8 + DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.2.1.1 of [1].

#### 7.1.80.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

#### 7.1.80.2.1.4 TFCS

TFCS size	8
TFCS	(64 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

### 7.1.80.2.2 Physical channel parameters

DPCH	DTX position		Flexible or fixed
Downlink	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
DPDCH	Number of data bits/slot	140	
	Number of data bits/frame	2100	

## 7.1.81 Streaming / unknown / UL:8 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

## 7.1.81.1 Uplink

## 7.1.81.1.1 Transport channel parameters

## 7.1.81.1.1.1 Transport channel parameters for Streaming / unknown / UL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Uplink: Max number of bits/radio frame before rate matching	267	
	RM attribute	135-175	

## 7.1.81.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1]

## 7.1.81.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

## 7.1.81.1.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

## 7.1.81.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

## 7.1.81.2 Downlink

## 7.1.81.2.1 Transport channel parameters

## 7.1.81.2.1.1 Transport channel parameters for Streaming / unknown / DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	16000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2028	
RM attribute	125-165		

## 7.1.81.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1]

## 7.1.81.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.81.2.1.4 TFCS

TFCS size	8
TFCS	(16 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

## 7.1.81.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible or fixed
DPCCH	Spreading factor	64
	Number of bits/slot	8
		4
		8
DPDCH	Number of data bits/slot	60
	Number of data bits/frame	900

## 7.1.82 Streaming / unknown / UL:8 DL:32 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

## 7.1.82.1 Uplink

### 7.1.82.1.1 Transport channel parameters

#### 7.1.82.1.1.1 Transport channel parameters for Streaming / unknown / UL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	<b>RAB</b>	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Uplink: Max number of bits/radio frame before rate matching	267	
	RM attribute	135-175	

#### 7.1.82.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1]

#### 7.1.82.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

#### 7.1.82.1.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

### 7.1.82.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

7.1.82.2 Downlink

7.1.82.2.1 Transport channel parameters

7.1.82.2.1.1 Transport channel parameters for Streaming / unknown / DL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	32000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4044	
RM attribute	125-165		

7.1.82.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1. 38b.2.1.2 of [1]

7.1.82.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

7.1.82.2.1.4 TFCS

TFCS size	12
TFCS	(32 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

7.1.82.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

### 7.1.83 Streaming / unknown / UL:32 DL:256 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps.

This is supported in Release '99.

NOTE: This RAB combination is also applicable for Streaming MBMS PTP.

#### 7.1.83.1 Uplink

##### 7.1.83.1.1 Transport channel parameters

###### 7.1.83.1.1.1 Transport channel parameters for Streaming / unknown / UL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	32000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2124	
	Uplink: Max number of bits/radio frame before rate matching	1062	
RM attribute	135-175		

###### 7.1.83.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1]

###### 7.1.83.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

###### 7.1.83.1.1.4 TFCS

TFCS size	12
TFCS	(32 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1)

## 7.1.83.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1.0

## 7.1.83.2 Downlink

## 7.1.83.2.1 Transport channel parameters

## 7.1.83.2.1.1 Transport channel parameters for Streaming / unknown / DL:256 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	256000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	3x656
		TF4, bits	4x656
	TTI, ms	10	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	8076		
RM attribute	125-165		

## 7.1.83.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1. 38b.2.1.2 of [1]

## 7.1.83.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.83.2.1.4 TFCS

TFCS size	20
TFCS	(256 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)=  (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF4,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF4,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF4,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1), (TF4,TF1,TF1),

## 7.1.83.2.2 Physical channel parameters

DPCCH Downlink	DTX position		Flexible or fixed
	Spreading factor		8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

### 7.1.84 Interactive or background / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

## 7.1.84.1 Uplink

## 7.1.84.1.1 Transport channel parameters

## 7.1.84.1.1.1 Transport channel parameters for Interactive or Background / UL:16 + UL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	16000	16000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
	TTI, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	2148		
	Uplink: Max number of bits/radio frame before rate matching	537		
RM attribute	135-175			

## 7.1.84.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

## 7.1.84.1.1.3 TFCS

TFCS size	6
TFCS	(16 kbps RAB + 16 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)



## 7.1.84.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

## 7.1.84.2 Downlink

## 7.1.84.2.1 Transport channel parameters

## 7.1.84.2.1.1 Transport channel parameters for Interactive or background / DL:16 + DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	16000	16000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
	TTI, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	2148		
RM attribute	135-175			

## 7.1.84.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

## 7.1.84.2.1.3 TFCS

TFCS size	6
TFCS	(16 kbps RAB + 16 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)

## 7.1.84.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
		Number of data bits/frame	480

### 7.1.85 Interactive or background / UL:64 DL:8 kbps / PS RAB + Interactive or Background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

#### 7.1.85.1 Uplink

See subclause 6.10.2.4.1.57.1 of [1].

#### 7.1.85.2 Downlink

See subclause 7.1.71.2.

### 7.1.86 Interactive or Background / UL:64 DL:128 kbps / PS RAB + Interactive or Background / UL:64 DL:128 kbps / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 128kbps.

This is supported in Release '99.

#### 7.1.86.1 Uplink

See subclause 6.10.2.4.1.57.1 of [1]

#### 7.1.86.2 Downlink

##### 7.1.86.2.1 Transport channel parameters

##### 7.1.86.2.1.1 Transport channel parameters for Interactive or background / DL:128 + DL:128 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
Max number of bits/TTI after channel coding	8556			
RM attribute	120-160			

7.1.86.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.86.2.1.3 TFCS

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF3,TF0), (TF4,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF3,TF1), (TF4,TF1)

7.1.86.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		8
	Number of Pilot bits/slot		16
DPDCH	Number of data bits/slot		288
	Number of data bits/frame		4320

7.1.87 Interactive or Background / UL:64 DL:384 kbps / PS RAB +  
Interactive or Background / UL:64 DL:384 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps.

This is supported in Release '99.

7.1.87.1 Uplink

See subclause 6.10.2.4.1.57.1 of [1].

## 7.1.87.2 Downlink

## 7.1.87.2.1 Transport channel parameters

## 7.1.87.2.1.1 Transport channel parameters for Interactive or background / DL:384 + DL:384 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	384000	384000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
		TF5, bits	12x340	
	TTI, ms	10		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	12828		
RM attribute	110-150			

## 7.1.87.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.87.2.1.3 TFCS

TFCS size	12
TFCS	(384 kbps RAB + 384 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1)

## 7.1.87.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible or fixed
	Spreading factor	8
DPCCH	Number of TFCI bits/slot	8
	Number of TPC bits/slot	8
	Number of Pilot bits/slot	16
DPDCH	Number of data bits/slot	608
	Number of data bits/frame	9120

### 7.1.88 Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or Background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps, DL: 128kbps.

This is supported in Release '99.

## 7.1.88.1 Uplink

### 7.1.88.1.1 Transport channel parameters

#### 7.1.88.1.1.1 Transport channel parameters for Interactive or Background / UL:128 + UL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	8556		
	Uplink: Max number of bits/radio frame before rate matching	4278		
RM attribute	120-160			

#### 7.1.88.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

#### 7.1.88.1.1.3 TFCS

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

### 7.1.88.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.96

7.1.88.2 Downlink

7.1.88.2.1 Transport channel parameters

7.1.88.2.1.1 Transport channel parameters for Interactive or background / DL:128 + DL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	8556		
RM attribute	120-160			

7.1.88.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.88.2.1.3 TFCS

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF3,TF0), (TF4,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF3,TF1), (TF4,TF1)

7.1.88.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible or fixed
	Spreading factor	16
DPCCH	Number of TFCI bits/slot	8
	Number of TPC bits/slot	8
	Number of Pilot bits/slot	16
DPDCH	Number of data bits/slot	288
	Number of data bits/frame	4320

7.1.89 Interactive or background / UL:128 DL:32 kbps / PS RAB +  
Interactive or Background / UL:128 DL:32 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps, DL: 32kbps.

This is supported in Release '99.

### 7.1.89.1 Uplink

See subclause 7.1.88.1

### 7.1.89.2 Downlink

#### 7.1.89.2.1 Transport channel parameters

##### 7.1.89.2.1.1 Transport channel parameters for Interactive or background / DL:32 + DL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	32000	32000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	3x340	
		TF4, bits	4x340	
	TTI, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	4284		
RM attribute	135-175			

##### 7.1.89.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

##### 7.1.89.2.1.3 TFCS

TFCS size	10
TFCS	(32 kbps RAB + 32 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

#### 7.1.89.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

### 7.1.90 Streaming / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in Release '99.

#### 7.1.90.1 Uplink

See subclause 6.10.2.4.1.58.1 of [1].

#### 7.1.90.2 Downlink

See subclause 7.1.81.2.

### 7.1.91 Streaming / unknown / UL:16 DL:32 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in Release '99.

#### 7.1.91.1 Uplink

See subclause 6.10.2.4.1.58.1 of [1].

#### 7.1.91.2 Downlink

See subclause 7.1.82.2.

### 7.1.92 Interactive or background / UL:16 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

#### 7.1.92.1 Uplink

See subclause 6.10.2.4.1.23b.1 of [1].

#### 7.1.92.2 Downlink

See subclause 7.1.26.2.

### 7.1.93 Interactive or background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.



### 7.1.93.1 Uplink

See subclause 6.10.2.4.1.23b.1 of [1].

### 7.1.93.2 Downlink

See subclause 7.1.29.2.

## 7.1.94 Interactive or background / UL:16 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in Release '99.

### 7.1.94.1 Uplink

See subclause 6.10.2.4.1.23b.1 of [1].

### 7.1.94.2 Downlink

See subclause 7.1.31.2.

## 7.1.95 Conversational / speech / UL:12.2 DL:12.2 kbps + Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in release '99.

NOTE: This RAB combination is also applicable for Streaming MBMS PTP.

### 7.1.95.1 Uplink

#### 7.1.95.1.1 Transport channel parameters

##### 7.1.95.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

##### 7.1.95.1.1.2 Transport channel parameters for Streaming / unknown / UL:16 kbps

See subclause 6.10.2.4.1.58.1.1.1 of [1].

##### 7.1.95.1.1.3 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1].

##### 7.1.95.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

## 7.1.95.1.1.5 TFCS

TFCS size	24
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 16 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1)

## 7.1.95.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1.0

## 7.1.95.2 Downlink

## 7.1.95.2.1 Transport channel parameters

## 7.1.95.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1]

## 7.1.95.2.1.2 Transport channel parameters for Streaming / unknown / DL:128 kbps / PS RAB

See subclause 6.10.2.4.1.58a.2.1.1 of [1].

## 7.1.95.2.1.3 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1]

## 7.1.95.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.95.2.1.5 TFCS

TFCS size	60
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF1,TF4,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF1,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF1,TF4,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF1,TF4,TF1,TF1)

7.1.95.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

7.1.96 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128 kbps, DL: 64 kbps.

This is supported in release '99.

7.1.96.1 Uplink

7.1.96.1.1 Transport channel parameters

7.1.96.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1]

7.1.96.1.1.2 Transport channel parameters for Streaming / unknown / UL:128 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	128000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	4x656
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
	Uplink: Max number of bits/radio frame before rate matching	4038	
	RM attribute	125-165	

7.1.96.1.1.3 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1].

7.1.96.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.96.1.1.5 TFCS

TFCS size	48
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1)

7.1.96.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.92

7.1.96.2 Downlink

7.1.96.2.1 Transport channel parameters

7.1.96.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1]

7.1.96.2.1.2 Transport channel parameters for Streaming / unknown / DL:16 kbps / PS RAB

See subclause 7.1.81.2.1.1

7.1.96.2.1.3 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1].

7.1.96.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

7.1.96.2.1.5 TFCS

TFCS size	24
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 16 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1)

7.1.96.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		64
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

7.1.97 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62 of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps plus support for 'Maximum number of TFC' = 32.

This is supported in Release 5.

**7.1.98 Interactive or background / UL:32 DL:64 kbps / PS RAB +  
Interactive or background / UL:32 DL:64 kbps / PS RAB + UL:3.4  
DL: 3.4 kbps SRBs for DCCH (L1 multiplexing) (FDD)**

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in Release '99.

**7.1.98.1 Uplink**

**7.1.98.1.1 Transport channel parameters**

**7.1.98.1.1.1 Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB**

See subclause 6.10.2.4.1.23.1.1.1 of [1].

**7.1.98.1.1.2 Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB**

See subclause 6.10.2.4.1.23.1.1.1 of [1].

**7.1.98.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.1.1.1 of [1].

**7.1.98.1.1.4 TFCS**

TFCS size	18 (alt. 8)
TFCS	(I/B 32 kbps RAB, I/B 32 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1)  (alt. (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1))

**7.1.98.1.2 Physical channel parameters**

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

**7.1.98.2 Downlink**

**7.1.98.2.1 Transport channel parameters**

**7.1.98.2.1.1 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB**

See subclause 6.10.2.4.1.25.2.1.1 of [1].

**7.1.98.2.1.2 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB**

See subclause 6.10.2.4.1.25.2.1.1 of [1].

7.1.98.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.98.2.1.4 TFCS

TFCS size	50
TFCS	(I/B 64 kbps RAB, I/B 64 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF3, TF2, TF0), (TF4, TF2, TF0), (TF0, TF3, TF0), (TF1, TF3, TF0), (TF2, TF3, TF0), (TF3, TF3, TF0), (TF4, TF3, TF0), (TF0, TF4, TF0), (TF1, TF4, TF0), (TF2, TF4, TF0), (TF3, TF4, TF0), (TF4, TF4, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1), (TF3, TF2, TF1), (TF4, TF2, TF1), (TF0, TF3, TF1), (TF1, TF3, TF1), (TF2, TF3, TF1), (TF3, TF3, TF1), (TF4, TF3, TF1), (TF0, TF4, TF1), (TF1, TF4, TF1), (TF2, TF4, TF1), (TF3, TF4, TF1), (TF4, TF4, TF1)

7.1.98.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

7.1.99 Interactive or background / UL:128 DL: 64k / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 64kbps.

7.1.99.1 Uplink

7.1.99.1.1 Transport channel parameters

7.1.99.1.1.1 Transport channel parameters for Interactive or background / UL:128 kbps / PS RAB

See subclause 6.10.2.4.1.28.1.1.1 of [1]

7.1.99.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1. of [1]

7.1.99.1.1.3 TFCS

See subclause 6.10.2.4.1.28.1.1.3 of [1]

7.1.99.1.2 Physical channel parameters

See subclause 6.10.2.4.1.28.1.2 of [1]

## 7.1.99.2 Downlink

### 7.1.99.2.1 Transport channel parameters

#### 7.1.99.2.1.1 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.25.2.1.1 of [1]

#### 7.1.99.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1. of [1]

#### 7.1.99.2.1.3 TFCS

See subclause 6.10.2.4.1.25.2.1.3 of [1].

### 7.1.99.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		140
	Number of data bits/frame		2100

## 7.1.100 Interactive or background / UL:384 DL: 64k / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 384kbps, DL: 64kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

### 7.1.100.1 Uplink

#### 7.1.100.1.1 Transport channel parameters

##### 7.1.100.1.1.1 Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

See subclause 6.10.2.4.1.34.1.1.1 of [1]

##### 7.1.100.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

##### 7.1.100.1.1.3 TFCS

See subclause 6.10.2.4.1.34.1.1.3 of [1]

#### 7.1.100.1.2 Physical channel parameters

See subclause 6.10.2.4.1.34.1.2 of [1]



## 7.1.100.2 Downlink

### 7.1.100.2.1 Transport channel parameters

#### 7.1.100.2.1.1 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.25.2.1.1 of [1]

#### 7.1.100.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1. of [1]

#### 7.1.100.2.1.3 TFCS

See subclause 6.10.2.4.1.25.2.1.3 of [1].

### 7.1.100.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		140
	Number of data bits/frame		2100

## 7.1.101 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 64kbps.

## 7.1.101.1 Uplink

### 7.1.101.1.1 Transport channel parameters

#### 7.1.101.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

#### 7.1.101.1.1.2 Transport channel parameters for Interactive or background / UL:128 kbps / PS RAB

See subclause 6.10.2.4.1.28.1.1.1 of [1].

#### 7.1.101.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

#### 7.1.101.1.1.4 TFCS

See subclause 6.10.2.4.1.44.1.1.4 of [1]

### 7.1.101.1.2 Physical channel parameters

See subclause 6.10.2.4.1.44.1.2 of [1]

## 7.1.101.2 Downlink

### 7.1.101.2.1 Transport channel parameters

#### 7.1.101.2.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

#### 7.1.101.2.1.2 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.25.2.1.1 of [1]

#### 7.1.101.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

#### 7.1.101.2.1.4 TFCS

See subclause 6.10.2.4.1.39.2.1.4 of [1].

### 7.1.101.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCl bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		140
	Number of data bits/frame		2100

## 7.1.102 Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kb/s Signalling Radio Bearers for DCCH

The minimum UE classes supporting this combination are UL: 384kbps, DL: 128kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

### 7.1.102.1 Uplink

#### 7.1.102.1.1 Transport channel parameters

##### 7.1.102.1.1.1 Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

See subclause 6.10.2.4.1.34.1.1.1 of [1].

##### 7.1.102.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

##### 7.1.102.1.1.3 TFCS

See subclause 6.10.2.4.1.34.1.1.3 of [1].

### 7.1.102.1.2 Physical channel parameters

See subclause 6.10.2.4.1.34.1.2 of [1].

## 7.1.102.2 Downlink

### 7.1.102.2.1 Transport channel parameters

#### 7.1.102.2.1.1 Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See subclause 6.10.2.4.1.27.2.1.1 of [1].

#### 7.1.102.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1. of [1].

#### 7.1.102.2.1.3 TFCS

See subclause 6.10.2.4.1.27.2.1.3 of [1].

### 7.1.102.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		8
	Number of Pilot bits/slot		16
DPDCH	Number of data bits/slot		288
	Number of data bits/frame		4320

## 7.1.103 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 64kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

The minimum UE classes supporting this combination are UL: 384kbps, DL: 64kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

## 7.1.103.1 Uplink

### 7.1.103.1.1 Transport channel parameters

#### 7.1.103.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1. of [1].

#### 7.1.103.1.1.2 Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

See subclause 6.10.2.4.1.34.1.1.1 of [1].

#### 7.1.103.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

#### 7.1.103.1.1.4 TFCS

See subclause 6.10.2.4.5.3.1.1.4 of [1].

### 7.1.103.1.2 Physical channel parameters

See subclause 6.10.2.4.5.3.1.2 of [1].

## 7.1.103.2 Downlink

### 7.1.103.2.1 Transport channel parameters

#### 7.1.103.2.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

#### 7.1.103.2.1.2 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.25.2.1.1 of [1].

#### 7.1.103.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

#### 7.1.103.2.1.3 TFCS

See subclause 6.10.2.4.1.39.2.1.4 of [1].

### 7.1.103.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCI bits/slot	8	
	Number of TPC bits/slot	4	
	Number of Pilot bits/slot	8	
DPDCH	Number of data bits/slot	140	
	Number of data bits/frame	2100	

## 7.1.104 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

The minimum UE classes supporting this combination are UL: 384kbps, DL: 128kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

### 7.1.104.1 Uplink

#### 7.1.104.1.1 Transport channel parameters

##### 7.1.104.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

##### 7.1.104.1.1.1 Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

See subclause 6.10.2.4.1.34.1.1.1 of [1].

##### 7.1.104.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

## 7.1.104.1.1.3 TFCS

See subclause 6.10.2.4.5.3.1.1.4 of [1].

## 7.1.104.1.2 Physical channel parameters

See subclause 6.10.2.4.5.3.1.2 of [1].

## 7.1.104.2 Downlink

## 7.1.104.2.1 Transport channel parameters

## 7.1.104.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

## 7.1.104.2.1.2 Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See subclause 6.10.2.4.1.27.2.1.1 of [1].

## 7.1.104.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1. of [1].

## 7.1.104.2.1.4 TFCS

See subclause 6.10.2.4.1.41.2.1.4 of [1].

## 7.1.104.2.2 Physical channel parameters

DPCH	DTX position		Flexible or fixed
Downlink	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

### 7.1.105 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 384kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

The minimum UE classes supporting this combination are UL: 384kbps, DL: 384kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

## 7.1.105.1 Uplink

## 7.1.105.1.1 Transport channel parameters

## 7.1.105.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

## 7.1.105.1.1.2 Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

See subclause 6.10.2.4.1.34.1.1.1 of [1].

7.1.105.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.105.1.1.3 TFCS

See subclause 6.10.2.4.5.3.1.1.4 of [1].

7.1.105.1.2 Physical channel parameters

See subclause 6.10.2.4.5.3.1.2 of [1].

7.1.105.2 Downlink

7.1.105.2.1 Transport channel parameters

7.1.105.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

7.1.105.2.1.2 Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

See subclause 6.10.2.4.1.32.2.1.1 of [1].

7.1.105.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1. of [1].

7.1.105.2.1.4 TFCS

See subclause 6.10.2.4.1.43.2.1.4. of [1].

7.1.105.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		8
	Number of DPDCH		1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

7.1.106 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release 5.

## 7.1.106.1 Uplink

## 7.1.106.1.1 Transport channel parameters

## 7.1.106.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

## 7.1.106.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

## 7.1.106.1.1.3 TFCS

TFCS size	10
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1)

## 7.1.106.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.84

## 7.1.106.2 Downlink

## 7.1.106.2.1 Transport channel parameters

## 7.1.106.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

## 7.1.106.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.106.2.1.3 TFCS

TFCS size	10
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0),(TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1)

## 7.1.106.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
Number of data bits/frame		510	

## 7.1.107 Conversational / speech / UL:(15.85 12.65 8.85 6.6) DL:(15.85 12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 32 kbps, DL: 32 kbps.

This is supported in Release 5.

## 7.1.107.1 Uplink

## 7.1.107.1.1 Transport channel parameters

## 7.1.107.1.1.1 Transport channel parameters for Conversational / speech / UL: (15.85 12.65 8.85 6.6) kbps / CS RAB

Higher Layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3 (note 2)	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	40, 54, 64, 72 (alt. 0, 40, 54, 64, 72)	78, 113, 181, 245	60	
	Max data rate, bps	15 850			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	40, 54, 64, 72 (alt. 0, 40, 54, 64, 72)	78, 113, 181, 245	60	
	TFS	TF0, bits	0x72(alt. 1x0) (note)	0x245	0x60
		TF1, bits	1x40	1x78	N/A
		TF2 bits	1x54	1x113	N/A
		TF3, bits	1x64	1x181	N/A
		TF4, bits	1x72	1x245	N/A
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	N/A	
	Max number of bits/TTI after channel coding	276	759	0	
	Uplink: Max number of bits/radio frame before rate matching	138	380	0	
RM attribute	180-220	170-210	256		
NOTE 1: In case of using this alternative, CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see subclause 4.2.1.1 in TS 25.212).					
NOTE 2: RAB subflow #3 does not exist in Iu interface. UTRAN establishes this additional "dummy" subflow when the RAB for Wideband AMR is assigned.					



## 7.1.107.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

## 7.1.107.1.1.3 TFCS

TFCS size	12
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF4,TF4,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF4,TF4,TF0TF1)

## 7.1.107.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.76

## 7.1.107.2 Downlink

## 7.1.107.2.1 Transport channel parameters

## 7.1.107.2.1.1 Transport channel parameters for Conversational / speech / DL: (15.85 12.65 8.85 6.6) kbps / CS RAB

Higher Layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3 (note 3)	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	0, 40, 54, 64, 72	78, 113, 181, 245	60	
	Max data rate, bps	15 850			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	0, 40, 54, 64, 72	78, 113, 181, 245	60	
	TFS (note 1)	TF0, bits	1x0 (note 2)	0x245	0x60
		TF1, bits	1x40	1x78	N/A
		TF2, bits	1x54	1x113	N/A
		TF3, bits	1x64	1x181	N/A
		TF4, bits	1x72	1x245	N/A
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	N/A	
Max number of bits/TTI after channel coding	276	759	0		
RM attribute	180-220	170-210	256		

NOTE 1: The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH, (see subclause 4.3 in TS 25.212).

NOTE 2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see subclause 4.2.1.1 in TS 25.212).

NOTE 3: RAB subflow #3 does not exist in lu interface. UTRAN establishes this additional "dummy" subflow when the RAB for Wideband AMR is assigned.

## 7.1.107.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.107.2.1.3 TFCS

TFCS size	12
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF4,TF4,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF4,TF4,TF0,TF1)

## 7.1.107.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCl bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

## 7.1.108 Conversational / speech / UL:(23.85 12.65 8.85 6.6) DL:(23.85 12.65 8.85 6.6) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 32 kbps, DL: 32 kbps.

This is supported in Release 5.

## 7.1.108.1 Uplink

## 7.1.108.1.1 Transport channel parameters

## 7.1.108.1.1.1 Transport channel parameters for Conversational / speech / UL: (23.85 12.65 8.85 6.6) kbps / CS RAB

Higher Layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3 (note 2)	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	40, 54, 64, 72 (alt. 0, 40, 54, 64, 72)	78, 113, 181, 405	60	
	Max data rate, bps	23 850			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	40, 54, 64, 72 (alt. 0, 40, 54, 64, 72)	78, 113, 181, 405	60	
	TFS	TF0, bits	0x72(alt. 1x0) (note)	0x405	0x60
		TF1, bits	1x40	1x78	N/A
		TF2 bits	1x54	1x113	N/A
		TF3, bits	1x64	1x181	N/A
		TF4, bits	1x72	1x405	N/A
	TTL, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/3	
CRC, bit	12	N/A	N/A		

	Max number of bits/TTI after channel coding	276	1239	0
	Uplink: Max number of bits/radio frame before rate matching	138	620	0
	RM attribute	180-220	170-210	256
NOTE 1: In case of using this alternative, CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see subclause 4.2.1.1 in TS 25.212).				
NOTE 2: RAB subflow #3 does not exist in Lu interface. UTRAN establishes this additional "dummy" subflow when the RAB for Wideband AMR is assigned.				

#### 7.1.108.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

#### 7.1.108.1.1.3 TFCS

TFCS size	12
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF4,TF4,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF4,TF4,TF0,TF1)

#### 7.1.108.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1

7.1.108.2 Downlink

7.1.108.2.1 Transport channel parameters

7.1.108.2.1.1 Transport channel parameters for Conversational / speech / DL: (23.85 12.65 8.85 6.6) kbps / CS RAB

Higher Layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3 (note 3)	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	0, 40, 54, 64, 72	78, 113, 181, 405	60	
	Max data rate, bps	23 850			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	0, 40, 54, 64, 72	78, 113, 181, 405	60	
	TFS (note 1)	TF0, bits	1x0 (note 2)	0x405	0x60
		TF1, bits	1x40	1x78	N/A
		TF2, bits	1x54	1x113	N/A
		TF3, bits	1x64	1x181	N/A
		TF4, bits	1x72	1x405	N/A
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	N/A	
	Max number of bits/TTI after channel coding	276	1239	0	
	RM attribute	180-220	170-210	256	
	NOTE 1: The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH, (see subclause 4.3 in TS 25.212).				
NOTE 2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see subclause 4.2.1.1 in TS 25.212).					
NOTE 3: RAB subflow #3 does not exist in lu interface. UTRAN establishes this additional "dummy" subflow when the RAB for Wideband AMR is assigned.					

7.1.108.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.108.2.1.3 TFCS

TFCS size	12
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF4,TF4,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF4,TF4,TF0,TF1)

7.1.108.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		64
	DPCCH	Number of TFCl bits/slot	0
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

**7.1.109 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of TFC' = 64, DL: 64 kbps plus support for 'Maximum number of TFC' = 128.

This is supported in Release 5.

**7.1.109.1 Uplink**

**7.1.109.1.1 Transport channel parameters**

**7.1.109.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB**

See subclause 6.10.2.4.1.62.1.1.1 of [1].

**7.1.109.1.1.2 Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB**

See subclause 6.10.2.4.1.26.1.1.1 of [1].

**7.1.109.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.1.1.1 of [1].

**7.1.109.1.1.4 TFCS**

TFCS size	50
TFCS	(RAB subflow#1, RAB subflow#2,RAB subflow#3, 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)

**7.1.109.1.1.5 TFC subset list**

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0),

	<p>(TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1)),</p> <p>1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1)},</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)}</p>
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7.1.109.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.76

7.1.109.2 Downlink

7.1.109.2.1 Transport channel parameters

7.1.109.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.109.2.1.2 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.25.2.1.1 of [1].

7.1.109.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.109.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.109.2.1.5 TFCS

TFCS size	100
TFCS	((RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0), (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0), (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF0,TF3,TF0,TF0), (TF3,TF2,TF0,TF3,TF0,TF0), (TF4,TF3,TF0,TF3,TF0,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF0,TF3,TF1,TF0), (TF3,TF2,TF0,TF3,TF1,TF0), (TF4,TF3,TF0,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF0,TF4,TF0,TF0), (TF3,TF2,TF0,TF4,TF0,TF0), (TF4,TF3,TF0,TF4,TF0,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF0,TF4,TF1,TF0), (TF3,TF2,TF0,TF4,TF1,TF0), (TF4,TF3,TF0,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF0,TF4,TF0,TF1), (TF3,TF2,TF0,TF4,TF0,TF1), (TF4,TF3,TF0,TF4,TF0,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF0,TF4,TF1,TF1), (TF3,TF2,TF0,TF4,TF1,TF1), (TF4,TF3,TF0,TF4,TF1,TF0)

7.1.109.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

7.1.110 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of TFC' = 64, DL: 128 kbps plus support for 'Maximum number of TFC' = 128.

This is supported in Release 5.

## 7.1.110.1 Uplink

### 7.1.110.1.1 Transport channel parameters

#### 7.1.110.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

#### 7.1.110.1.1.2 Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

See subclause 6.10.2.4.1.26.1.1.1 of [1].

#### 7.1.110.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

#### 7.1.110.1.1.4 TFCS

See subclause 7.1.109.1.1.4.

#### 7.1.110.1.1.5 TFC subset list

See subclause 7.1.109.1.1.5.

### 7.1.110.1.2 Physical channel parameters

See subclause 7.1.109.1.2.

## 7.1.110.2 Downlink

### 7.1.110.2.1 Transport channel parameters

#### 7.1.110.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

#### 7.1.110.2.1.2 Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See subclause 6.10.2.4.1.27.2.1.1 of [1].

#### 7.1.110.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

#### 7.1.110.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].



7.1.110.2.1.5 TFCS

TFCS size	100
TFCS	((RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, DCCH, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0), (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0), (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF0,TF3,TF0,TF0), (TF3,TF2,TF0,TF3,TF0,TF0), (TF4,TF3,TF0,TF3,TF0,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF0,TF3,TF1,TF0), (TF3,TF2,TF0,TF3,TF1,TF0), (TF4,TF3,TF0,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF0,TF4,TF0,TF0), (TF3,TF2,TF0,TF4,TF0,TF0), (TF4,TF3,TF0,TF4,TF0,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF0,TF4,TF1,TF0), (TF3,TF2,TF0,TF4,TF1,TF0), (TF4,TF3,TF0,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF0,TF4,TF0,TF1), (TF3,TF2,TF0,TF4,TF0,TF1), (TF4,TF3,TF0,TF4,TF0,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF0,TF4,TF1,TF1), (TF3,TF2,TF0,TF4,TF1,TF1), (TF4,TF3,TF0,TF4,TF1,TF0)

7.1.110.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		16
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

7.1.111 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of TFC' = 64, DL: 384 kbps.

This is supported in Release 5.

7.1.111.1 Uplink

7.1.111.1.1 Transport channel parameters

7.1.111.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

7.1.111.1.1.2 Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

See subclause 6.10.2.4.1.26.1.1.1 of [1].

7.1.111.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.111.1.1.4 TFCS

See subclause 7.1.109.1.1.4.

7.1.111.1.1.5 TFC subset list

TFC subset list size	3
TFC subset list	<p>0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF0,TF0,TF0,TF5,TF0), (TF1,TF0,TF0,TF5,TF0), (TF2,TF1,TF0,TF5,TF0), (TF0,TF0,TF0,TF5,TF1), (TF1,TF0,TF0,TF5,TF1), (TF2,TF1,TF0,TF5,TF1)},</p> <p>1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF0,TF0,TF0,TF5,TF0), (TF1,TF0,TF0,TF5,TF0), (TF2,TF1,TF0,TF5,TF0), (TF3,TF2,TF0,TF5,TF0), (TF0,TF0,TF0,TF5,TF1), (TF1,TF0,TF0,TF5,TF1), (TF2,TF1,TF0,TF5,TF1), (TF3,TF2,TF0,TF5,TF1)},</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),</p>

	(TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1), (TF0,TF0,TF0,TF5,TF0), (TF1,TF0,TF0,TF5,TF0), (TF2,TF1,TF0,TF5,TF0), (TF3,TF2,TF0,TF5,TF0), (TF4,TF3,TF0,TF5,TF0), (TF0,TF0,TF0,TF5,TF1), (TF1,TF0,TF0,TF5,TF1), (TF2,TF1,TF0,TF5,TF1), (TF3,TF2,TF0,TF5,TF1), (TF4,TF3,TF0,TF5,TF1))
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7.1.111.1.2 Physical channel parameters

See subclause 7.1.109.1.2.

7.1.111.2 Downlink

7.1.111.2.1 Transport channel parameters

7.1.111.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.111.2.1.2 Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	384 000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4x336
		TF4, bits	8x336
		TF5, bits	12x336
	TTI, ms	10	
	Coding type	TC	
CRC, bit	16		
Max number of bits/TTI after channel coding	12684		
RM attribute	110 to 150		

7.1.111.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.111.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.111.2.1.5 TFCS

TFCS size	120
TFCS	((RAB subflow#1, RAB subflow#2, RAB subflow#3, 384 kbps RAB, DCCH, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0), (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0), (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF0,TF3,TF0,TF0), (TF3,TF2,TF0,TF3,TF0,TF0), (TF4,TF3,TF0,TF3,TF0,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF0,TF3,TF1,TF0), (TF3,TF2,TF0,TF3,TF1,TF0), (TF4,TF3,TF0,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF0,TF4,TF0,TF0), (TF3,TF2,TF0,TF4,TF0,TF0), (TF4,TF3,TF0,TF4,TF0,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF0,TF4,TF1,TF0), (TF3,TF2,TF0,TF4,TF1,TF0), (TF4,TF3,TF0,TF4,TF1,TF0), (TF0,TF0,TF0,TF5,TF0,TF0), (TF1,TF0,TF0,TF5,TF0,TF0), (TF2,TF1,TF0,TF5,TF0,TF0), (TF3,TF2,TF0,TF5,TF0,TF0), (TF4,TF3,TF0,TF5,TF0,TF0), (TF0,TF0,TF0,TF5,TF1,TF0), (TF1,TF0,TF0,TF5,TF1,TF0), (TF2,TF1,TF0,TF5,TF1,TF0), (TF3,TF2,TF0,TF5,TF1,TF0), (TF4,TF3,TF0,TF5,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF0,TF4,TF0,TF1), (TF3,TF2,TF0,TF4,TF0,TF1), (TF4,TF3,TF0,TF4,TF0,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF0,TF4,TF1,TF1), (TF3,TF2,TF0,TF4,TF1,TF1), (TF4,TF3,TF0,TF4,TF1,TF1), (TF0,TF0,TF0,TF5,TF0,TF1), (TF1,TF0,TF0,TF5,TF0,TF1), (TF2,TF1,TF0,TF5,TF0,TF1), (TF3,TF2,TF0,TF5,TF0,TF1), (TF4,TF3,TF0,TF5,TF0,TF1), (TF0,TF0,TF0,TF5,TF1,TF1), (TF1,TF0,TF0,TF5,TF1,TF1), (TF2,TF1,TF0,TF5,TF1,TF1), (TF3,TF2,TF0,TF5,TF1,TF1), (TF4,TF3,TF0,TF5,TF1,TF1)

7.1.111.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		8
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
Number of data bits/frame		9120	

7.1.112 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps.

This is supported in Release 5.

7.1.112.1 Uplink

7.1.112.1.1 Transport channel parameters

7.1.112.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

7.1.112.1.1.2 Transport channel parameters for Interactive or background / UL:0 kbps / PS RAB

See subclause 6.10.2.4.1.38a.1.1.2 of [1].

7.1.112.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.112.1.1.4 TFCS

TFCS size	10
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1)

7.1.112.1.1.5 TFC subset list

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1)}, 1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1)}, 2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1)}

7.1.112.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.64

7.1.112.2 Downlink

7.1.112.2.1 Transport channel parameters

7.1.112.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.112.2.1.2 Transport channel parameters for Interactive or background / DL:0 kbps / PS RAB

See subclause 6.10.2.4.1.38a.2.1 of [1].

7.1.112.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.112.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.112.2.1.5 TFCS

TFCS size	20
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0 kbps RAB, DCCH 3.4, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1)

7.1.112.2.2 Physical channel parameters

See subclause 6.10.2.4.1.62.2.2 of [1].

7.1.113 Conversational / speech / UL:12.2 DL:12.2 kbps + Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in release '99.

NOTE: This RAB combination is also applicable for Streaming MBMS PTP.

7.1.113.1 Uplink

See subclause 7.1.95.1

7.1.113.2 Downlink

7.1.113.2.1 Transport channel parameters

7.1.113.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1]

7.1.113.2.1.2 Transport channel parameters for Streaming / unknown / DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.58.2.1.1 of [1].

7.1.113.2.1.3 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1]

7.1.113.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.113.2.1.5 TFCS

TFCS size	48
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1)

7.1.113.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCl bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		140
	Number of data bits/frame		2100

7.1.113a Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
 Streaming / unknown / UL:64 DL:16 kbps / PS RAB + Interactive or  
 background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs  
 for DCCH

The minimum UE classes supporting this combination are UL: 128 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16 and 'Maximum number of TFC' = 64, DL: 64 kbps.

This is supported in release '99.

7.1.113a.1 Uplink

7.1.113a.1.1 Transport channel parameters

7.1.113a.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1]

7.1.113a.1.1.2 Transport channel parameters for Streaming / unknown / UL:64 kbps / PS RAB

See subclause 7.4.15.1.1.1

7.1.113a.1.1.3 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1].

7.1.113a.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.113a.1.1.5 TFCS

TFCS size	60
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF1,TF4,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF1,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF1,TF4,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF1,TF4,TF1,TF1)

7.1.113a.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.64

7.1.113a.2 Downlink

See subclause 7.1.96.2.



### 7.1.114 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:32 DL:256 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of AM entities' = 5 and 'Maximum number of TFC' = 48, DL: 128 kbps plus support for 'Maximum total number of transport blocks received within TTIs that end within the same 10 ms interval' = 16 and 'Maximum number of physical channel bits received in any 10 ms interval (DPCH, S-CCPCH)' = 9600.

This is supported in release '99.

NOTE: This RAB combination is also applicable for Streaming MBMS PTP.

#### 7.1.114.1 Uplink

##### 7.1.114.1.1 Transport channel parameters

###### 7.1.114.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

###### 7.1.114.1.1.2 Transport channel parameters for Streaming / unknown / UL:32 kbps / PS RAB

See subclause 7.1.83.1.1.1

###### 7.1.114.1.1.3 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1].

###### 7.1.114.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

##### 7.1.114.1.1.5 TFCS

TFCS size	36
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 32 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1)

##### 7.1.114.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.96

7.1.114.2 Downlink

7.1.114.2.1 Transport channel parameters

7.1.114.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1]

7.1.114.2.1.2 Transport channel parameters for Streaming / unknown / DL:256 kbps / PS RAB

See subclause 7.1.83.2.1.1

7.1.114.2.1.3 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1]

7.1.114.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.114.2.1.5 TFCS

TFCS size	60
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 256 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF1,TF4,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF1,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF1,TF4,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF1,TF4,TF1,TF1)

7.1.114.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		8
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
Number of data bits/frame		9120	

7.1.115 Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB +  
 Interactive or background / UL:64 DL:64 kbps / PS RAB+ UL:3.4 DL:  
 3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release'99.

7.1.115.1 Uplink

7.1.115.1.1 Transport channel parameters

7.1.115.1.1.1 Transport channel parameters for Conversational / speech / UL:5.9 kbps / CS RAB

See subclause 6.10.2.4.1.9.1.1.1 of [1].

7.1.115.1.1.2 Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

See subclause 6.10.2.4.1.26.1.1.1 of [1].

7.1.115.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.115.1.1.4 TFCS

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0),(TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),(TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),(TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0),(TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),(TF2,TF1,TF0,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),(TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1),(TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),(TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),(TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1),(TF2,TF1,TF0,TF4,TF1)

7.1.115.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.84

7.1.115.2 Downlink

7.1.115.2.1 Transport channel parameters

7.1.115.2.1.1 Transport channel parameters for Conversational / speech / DL: 5.9 kbps / CS RAB

See subclause 6.10.2.4.1.9.2.1.1 of [1].

7.1.115.2.1.2 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.25.2.1.1 of [1].

7.1.115.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.115.2.1.4 TFCS

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB , DCCH)=(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0),(TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),(TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),(TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0),(TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),(TF2,TF1,TF0,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),(TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1),(TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),(TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),(TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1),(TF2,TF1,TF0,TF4,TF1)

## 7.1.115.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

**7.1.116 Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB +  
Interactive or background / UL:64 DL:64 kbps / PS RAB +  
Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 64kbps plus support for 'Maximum number of AM entities' = 5, DL: 64kbps plus support for 'Maximum number of AM entities' = 5.

This is supported in Release '99.

## 7.1.116.1 Uplink

## 7.1.116.1.1 Transport channel parameters

## 7.1.116.1.1.1 Transport channel parameters for Conversational / speech / UL:5.9 kbps / CS RAB

See subclause 6.10.2.4.1.9.1.1.1 of [1].

## 7.1.116.1.1.2 Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB + UL:64 kbps / PS RAB

See subclause 6.10.2.4.1.38d.1.1.2 of [1].

## 7.1.116.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.116.1.1.4 TFCS

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB + 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0),(TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),(TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),(TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0),(TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),(TF2,TF1,TF0,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),(TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1),(TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),(TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),(TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1),(TF2,TF1,TF0,TF4,TF1)

7.1.116.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.84

7.1.116.2 Downlink

7.1.116.2.1 Transport channel parameters

7.1.116.2.1.1 Transport channel parameters for Conversational / speech / DL: 5.9 kbps / CS RAB

See subclause 6.10.2.4.1.9.2.1.1 of [1].

7.1.116.2.1.2 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB + DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.38d.2.1.2 of [1].

7.1.116.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.116.2.1.4 TFCS

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB + 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0),(TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),(TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),(TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0),(TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),(TF2,TF1,TF0,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),(TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1),(TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),(TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),(TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1),(TF2,TF1,TF0,TF4,TF1)

7.1.116.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCH bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
Number of data bits/frame		2100	

### 7.1.117 Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.4b of [1].

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 32 kbps.

This is supported in Release 4.

### 7.1.118 Conversational / speech / UL:38.8 DL:38.8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH [Rel-6 onwards]

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 6.

NOTE: This RAB is used for the transient state, where couple of IR packets are transmitted to synchronize contexts.

#### 7.1.118.1 Uplink

##### 7.1.118.1.1 Transport channel parameters

##### 7.1.118.1.1.1 Transport channel parameters for conversational/speech/UL:38.8 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
RLC	Logical channel type	DTCH
	RLC mode	UM
	Payload sizes, bit	568, 624, 640, 656, 672, 704, 768, 776 (alt 0, 568, 624, 640, 656, 672, 704, 768, 776)
	Max data rate, bps	38800
	UMD PDU header, bit	8
MAC	MAC header, bit	0
	MAC multiplexing	N/A
Layer 1	TrCH type	DCH
	TB sizes, bit	576, 632, 648, 664, 680, 712, 776, 784 (alt 0, 576, 632, 648, 664, 680, 712, 776, 784)
	TFS	TF0, bits

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
	TF1, bits	1x576
	TF2, bits	1x632
	TF3, bits	1x648
	TF4, bits	1x664
	TF5, bits	1x680
	TF6, bits	1x712
	TF7, bits	1x776
	TF8, bits	1x784
	TTI, ms	20
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	2412
	Uplink: Max number of bits/radio frame before rate matching	1206
	RM attribute	180-220
<p>NOTE: Alternative 1x0 is used to have CRC present in all transport formats. Header compressor should ensure that small_CID is used and that CID 0 is allocated to this RAB</p>		

7.1.118.1.1.2 Transport channel parameters for interactive or background/UL:8 kbps/ PS RAB + UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.1.1.1 of [1]

7.1.118.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

7.1.118.1.1.4 TFCS

TFCS size	36
TFCS	<p>(38.8 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)=                  (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0),                  (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF0, TF1, TF0),                  (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0),                  (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1),                  (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1),                  (TF7, TF0, TF1), (TF8, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1),                  (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1),                  (TF8, TF1, TF1)</p>

## 7.1.118.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.96

## 7.1.118.2 Downlink

## 7.1.118.2.1 Transport channel parameters

## 7.1.118.2.1.1 Transport channel parameters for conversational/speech/DL:38.8 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB	
PDCP	PDCP header size, bit	0	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	568, 624, 640, 656, 672, 704, 768, 776 (alt 0, 568, 624, 640, 656, 672, 704, 768, 776)	
	Max data rate, bps	38800	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	576, 632, 648, 664, 680, 712, 776, 784 (alt 0, 576, 632, 648, 664, 680, 712, 776, 784)	
	TFS	TF0, bits	0x784 (alt 1x0)
		TF1, bits	1x576
		TF2, bits	1x632
		TF3, bits	1x648
		TF4, bits	1x664
		TF5, bits	1x680
		TF6, bits	1x712
		TF7, bits	1x776
		TF8, bits	1x784
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2412	
RM attribute	180-220		

NOTE: Alternative 1x0 is used to have CRC present in all transport formats.

Header compressor should ensure that small\_CID is used and that CID 0 is allocated to this RAB



7.1.118.2.1.2 Transport channel parameters for interactive or background/DL:8 kbps/ PS RAB + DL: 8 kbps / PS RAB

See subclause 6.10.2.4.1.56.2.1.1 of [1]

7.1.118.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1]

7.1.118.2.1.4 TFCS

TFCS size	36
TFCS	(38.8 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1)

7.1.118.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		60
	Number of data bits/frame		900

7.1.119 Conversational / speech / UL:16.8 DL:16.8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH [Rel-6 onwards]

The minimum UE classes supporting this combination are UL: 32 kbps, DL: 32 kbps plus support for 'Maximum number of TFC' = 96.

This is supported in Release 6.

NOTE: This RAB is used for the steady-state, where the contexts of the ROHC compressor and the ROHC decompressor are already synchronized so IR packets are not transmitted.

## 7.1.119.1 Uplink

## 7.1.119.1.1 Transport channel parameters

## 7.1.119.1.1.1 Transport channel parameters for conversational/speech/UL:16.8 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB	
PDCP	PDCP header size, bit	0	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	80, 96, 128, 136, 152, 168, 184, 200, 216, 232, 264, 280, 288, 296, 304, 328, 336 (alt 0, 80, 96, 128, 136, 152, 168, 184, 200, 216, 232, 264, 280, 288, 296, 304, 328, 336)	
	Max data rate, bps	16800	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	88, 104, 136, 144, 160, 176, 192, 208, 224, 240, 272, 288, 296, 304, 312, 336, 344 (alt 0, 88, 104, 136, 144, 160, 176, 192, 208, 224, 240, 272, 288, 296, 304, 312, 336, 344)	
	TFS	TF0, bits	0x344 (alt 1x0)
		TF1, bits	1x88
		TF2, bits	1x104
		TF3, bits	1x136
		TF4, bits	1x144
		TF5, bits	1x160
		TF6, bits	1x176
		TF7, bits	1x192
		TF8, bits	1x208
		TF9, bits	1x224
		TF10, bits	1x240
		TF11, bits	1x272
		TF12, bits	1x288
		TF13, bits	1x296
		TF14, bits	1x304
		TF15, bits	1x312
		TF16, bits	1x336
TF17, bits	1x344		

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
	TTI, ms	20
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	1092
	Uplink: Max number of bits/radio frame before rate matching	546
	RM attribute	180-220
<p>NOTE: Alternative 1x0 is used to have CRC present in all transport formats. Header compressor should ensure that small_CID is used and that CID 0 is allocated to this RAB</p>		

7.1.119.1.1.2 Transport channel parameters for interactive or background/UL:8 kbps/ PS RAB + UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.1.1.1 of [1].

7.1.119.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.119.1.1.4 TFCS

TFCS size	72
TFCS	<p>(16.8 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)=</p> <p>(TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF9, TF0, TF0), (TF10, TF0, TF0), (TF11, TF0, TF0), (TF12, TF0, TF0), (TF13, TF0, TF0), (TF14, TF0, TF0), (TF15, TF0, TF0), (TF16, TF0, TF0), (TF17, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF9, TF1, TF0), (TF10, TF1, TF0), (TF11, TF1, TF0), (TF12, TF1, TF0), (TF13, TF1, TF0), (TF14, TF1, TF0), (TF15, TF1, TF0), (TF16, TF1, TF0), (TF17, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF9, TF0, TF1), (TF10, TF0, TF1), (TF11, TF0, TF1), (TF12, TF0, TF1), (TF13, TF0, TF1), (TF14, TF0, TF1), (TF15, TF0, TF1), (TF16, TF0, TF1), (TF17, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1), (TF9, TF1, TF1), (TF10, TF1, TF1), (TF11, TF1, TF1), (TF12, TF1, TF1), (TF13, TF1, TF1), (TF14, TF1, TF1), (TF15, TF1, TF1), (TF16, TF1, TF1), (TF17, TF1, TF1)</p>

## 7.1.119.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	0.88

## 7.1.119.2 Downlink

## 7.1.119.2.1 Transport channel parameters

## 7.1.119.2.1.1 Transport channel parameters for conversational/speech/DL:16.8 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB	
PDCP	PDCP header size, bit	0	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	80, 96, 128, 136, 152, 168, 184, 200, 216, 232, 264, 280, 288, 296, 304, 328, 336 (alt 0, 80, 96, 128, 136, 152, 168, 184, 200, 216, 232, 264, 280, 288, 296, 304, 328, 336)	
	Max data rate, bps	16800	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	88, 104, 136, 144, 160, 176, 192, 208, 224, 240, 272, 288, 296, 304, 312, 336, 344 (alt 0, 88, 104, 136, 144, 160, 176, 192, 208, 224, 240, 272, 288, 296, 304, 312, 336, 344)	
	TFS	TF0, bits	0x344 (alt 1x0)
		TF1, bits	1x88
		TF2, bits	1x104
		TF3, bits	1x136
		TF4, bits	1x144
		TF5, bits	1x160
		TF6, bits	1x176
		TF7, bits	1x192
		TF8, bits	1x208
		TF9, bits	1x224
		TF10, bits	1x240
		TF11, bits	1x272
		TF12, bits	1x288
		TF13, bits	1x296
TF14, bits		1x304	
TF15, bits	1x312		

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
	TF16, bits	1x336
	TF17, bits	1x344
	TTI, ms	20
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	1092
	RM attribute	180-220
NOTE: Alternative 1x0 is used to have CRC present in all transport formats. Header compressor should ensure that small_CID is used and that CID 0 is allocated to this RAB		

7.1.119.2.1.2 Transport channel parameters for interactive or background/DL:8 kbps/ PS RAB + DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.2.1.1 of [1].

7.1.119.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.119.2.1.4 TFCS

TFCS size	72
TFCS	(16.8 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF9, TF0, TF0), (TF10, TF0, TF0), (TF11, TF0, TF0), (TF12, TF0, TF0), (TF13, TF0, TF0), (TF14, TF0, TF0), (TF15, TF0, TF0), (TF16, TF0, TF0), (TF17, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF9, TF1, TF0), (TF10, TF1, TF0), (TF11, TF1, TF0), (TF12, TF1, TF0), (TF13, TF1, TF0), (TF14, TF1, TF0), (TF15, TF1, TF0), (TF16, TF1, TF0), (TF17, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF9, TF0, TF1), (TF10, TF0, TF1), (TF11, TF0, TF1), (TF12, TF0, TF1), (TF13, TF0, TF1), (TF14, TF0, TF1), (TF15, TF0, TF1), (TF16, TF0, TF1), (TF17, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1), (TF9, TF1, TF1), (TF10, TF1, TF1), (TF11, TF1, TF1), (TF12, TF1, TF1), (TF13, TF1, TF1), (TF14, TF1, TF1), (TF15, TF1, TF1), (TF16, TF1, TF1), (TF17, TF1, TF1)

## 7.1.119.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
		Number of data bits/frame	480

### 7.1.120 Conversational / speech / UL: 40 DL: 40 kbps / PS RAB + Interactive or Background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH [Rel-5 only]

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 5 only. This does not apply to Release 6 onwards.

NOTE: The first RAB is used for multiplexed RTP and RTCP flows, the second RAB is used for SIP signaling and the third RAB is used for signaling radio bearers.

## 7.1.120.1 Uplink

## 7.1.120.1.1 Transport channel parameters

## 7.1.120.1.1.1 Transport channel parameters for Conversational / speech / UL: 40 kbps / PS RAB

Higher Layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		UM
	Payload sizes, bit		104, 320, 800
	Max data rate, bps		40000
	UMD PDU header, bit		8
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		112, 328, 808
	TFS	TF0, bits	0x808
		TF1, bits	1x112
		TF2, bits	1x328
		TF3, bits	1x808
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		2484
Uplink: Max number of bits/radio frame before rate matching		1242	
RM attribute		180-220	

## 7.1.120.1.1.2 Transport channel parameters for Interactive or Background / UL: 8 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Uplink: Max number of bits/radio frame before rate matching	267	
	RM attribute	135-175	

## 7.1.120.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

## 7.1.120.1.1.4 TFCS

TFCS size	16
TFCS	(40 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1),

## 7.1.120.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.96

## 7.1.120.2 Downlink

## 7.1.120.2.1 Transport channel parameters

## 7.1.120.2.1.1 Transport channel parameters for Conversational / speech / DL: 40 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	104, 320, 800	
	Max data rate, bps	40000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	112, 328, 808	
	TFS	TF0, bits	0x808
		TF1, bits	1x112
		TF2, bits	1x328
		TF3, bits	1x808
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2484	
	RM attribute	180-220	

## 7.1.120.2.1.2 Transport channel parameters for Interactive or Background / DL: 8 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	RM attribute	135-175	

## 7.1.120.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].



7.1.120.2.1.4 TFCS

TFCS size	16
TFCS	(40 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1)

7.1.120.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

7.1.121 Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:27.2 DL:27.2 kbps SRBs for DCCH

7.1.121.1 Uplink

7.1.121.1.1 Transport channel parameters

7.1.121.1.1.1 Transport channel parameters for Interactive or background / UL:16 kbps / PS RAB

See subclause 6.10.2.4.1.23b.1.1.1 of [1].

7.1.121.1.1.2 Transport channel parameters for UL:27.2 kbps SRBs for DCCH

See subclause 7.1.3a.1.1.1.

7.1.121.1.1.3 TFCS

TFCS size	8
TFCS	(16 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF0,TF2), (TF1,TF2)

7.1.121.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	0.72

7.1.121.2 Downlink

7.1.121.2.1 Transport channel parameters

7.1.121.2.1.1 Transport channel parameters for Interactive or background / DL:16 kbps / PS RAB

See subclause 6.10.2.4.1.23b.2.1.1 of [1].

## 7.1.121.2.1.2 Transport channel parameters for DL:27.2 kbps SRBs for DCCH

See subclause 7.1.3a.2.1.1.

## 7.1.121.2.1.3 TFCS

TFCS size	8
TFCS	(16 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF0,TF2), (TF1,TF2)

## 7.1.121.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps.

This is supported in Release '99.

**7.1.122 Conversational / speech / UL:39.6 DL:39.6 kbps / PS RAB +  
Interactive or background / UL:8 DL:8 kbps / PS RAB +  
Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH [Rel-5]**

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 5. This is not applied to Release 6 onwards.

NOTE: This RAB is used for the transient state, where couple of IR packets are transmitted to synchronize contexts.

## 7.1.122.1 Uplink

## 7.1.122.1.1 Transport channel parameters

## 7.1.122.1.1.1 Transport channel parameters for conversational/speech/UL:39.6 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB	
PDCP	PDCP header size, bit	0	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	584, 640, 656, 672, 688, 720, 784, 792 (alt 0, 584, 640, 656, 672, 688, 720, 784, 792)	
	Max data rate, bps	39600	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	592, 648, 664, 680, 696, 728, 792, 800 (alt 0, 592, 648, 664, 680, 696, 728, 792, 800)	
	TFS	TF0, bits	0x800 (alt 1x0)
		TF1, bits	1x592
		TF2, bits	1x648
		TF3, bits	1x664
		TF4, bits	1x680
		TF5, bits	1x696
		TF6, bits	1x728
		TF7, bits	1x792
	TF8, bits	1x800	
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2460	
Uplink: Max number of bits/radio frame before rate matching	1230		
RM attribute	180-220		
NOTE: Alternative 1x0 is used to have CRC present in all transport formats. Header compressor should ensure that ROHC's small_CID is used and that CID 0 is allocated to this RAB			

## 7.1.122.1.1.2 Transport channel parameters for interactive or background/UL:8 kbps/ PS RAB + UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.1.1.1 of [1].

7.1.122.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.122.1.1.4 TFCS

TFCS size	36
TFCS	(39.6 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1)

7.1.122.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.96

7.1.122.2 Downlink

7.1.122.2.1 Transport channel parameters

7.1.122.2.1.1 Transport channel parameters for conversational/speech/DL:39.6 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB	
PDCP	PDCP header size, bit	0	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	584, 640, 656, 672, 688, 720, 784, 792 (alt 0, 584, 640, 656, 672, 688, 720, 784, 792)	
	Max data rate, bps	39600	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	592, 648, 664, 680, 696, 728, 792, 800 (alt 0, 592, 648, 664, 680, 696, 728, 792, 800)	
	TFS	TF0, bits	0x800 (alt 1x0)
		TF1, bits	1x592

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
	TF2, bits	1x648
	TF3, bits	1x664
	TF4, bits	1x680
	TF5, bits	1x696
	TF6, bits	1x728
	TF7, bits	1x792
	TF8, bits	1x800
	TTI, ms	20
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	2460
	RM attribute	180-220
NOTE: Alternative 1x0 is used to have CRC present in all transport formats. Header compressor should ensure that small_CID is used and that CID 0 is allocated to this RAB		

7.1.122.2.1.2 Transport channel parameters for interactive or background/DL:8 kbps/ PS RAB + DL: 8 kbps / PS RAB

See subclause 6.10.2.4.1.56.2.1.1 of [1].

7.1.122.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.122.2.1.4 TFCS

TFCS size	36
TFCS	(39.6 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1)

## 7.1.122.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

**7.1.123 Conversational / speech / UL:17.6 DL:17.6 kbps / PS RAB +  
Interactive or background / UL:8 DL:8 kbps / PS RAB +  
Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH [Rel-5]**

The minimum UE classes supporting this combination are UL: 32 kbps, DL: 32 kbps plus support for 'Maximum number of TFC' = 96.

This is supported in Release 5. This is not applied to Release 6 onwards.

NOTE: This RAB is used for the steady-state, where the contexts of the ROHC compressor and the ROHC decompressor are already synchronized so IR packets are not transmitted.

## 7.1.123.1 Uplink

## 7.1.123.1.1 Transport channel parameters

## 7.1.123.1.1.1 Transport channel parameters for conversational/speech/UL:17.6.8 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB	
PDCP	PDCP header size, bit	0	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	96, 112, 144, 152, 168, 184, 200, 216, 232, 248, 280, 296, 304, 312, 320, 344, 352 (alt 0, 96, 112, 144, 152, 168, 184, 200, 216, 232, 248, 280, 296, 304, 312, 320, 344, 352)	
	Max data rate, bps	17600	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	104, 120, 152, 160, 176, 192, 208, 224, 240, 256, 288, 304, 312, 320, 328, 352, 360 (alt 0, 104, 120, 152, 160, 176, 192, 208, 224, 240, 256, 288, 304, 312, 320, 328, 352, 360)	
	TFS	TF0, bits	0x360 (alt 1x0)
		TF1, bits	1x104
		TF2, bits	1x120
		TF3, bits	1x152
		TF4, bits	1x160
		TF5, bits	1x176
		TF6, bits	1x192
		TF7, bits	1x208
		TF8, bits	1x224
		TF9, bits	1x240
		TF10, bits	1x256
		TF11, bits	1x288
		TF12, bits	1x304
		TF13, bits	1x312
		TF14, bits	1x320
		TF15, bits	1x328
		TF16, bits	1x352
TF17, bits	1x360		

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
	TTI, ms	20
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	1140
	Uplink: Max number of bits/radio frame before rate matching	570
	RM attribute	180-220
NOTE: Alternative 1x0 is used to have CRC present in all transport formats. Header compressor should ensure that small_CID is used and that CID 0 is allocated to this RAB.		

7.1.123.1.1.2 Transport channel parameters for interactive or background/UL:8 kbps/ PS RAB + UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.1.1.1 of [1].

7.1.123.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.123.1.1.4 TFCS

TFCS size	72
TFCS	(17.6 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF9, TF0, TF0), (TF10, TF0, TF0), (TF11, TF0, TF0), (TF12, TF0, TF0), (TF13, TF0, TF0), (TF14, TF0, TF0), (TF15, TF0, TF0), (TF16, TF0, TF0), (TF17, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF9, TF1, TF0), (TF10, TF1, TF0), (TF11, TF1, TF0), (TF12, TF1, TF0), (TF13, TF1, TF0), (TF14, TF1, TF0), (TF15, TF1, TF0), (TF16, TF1, TF0), (TF17, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF9, TF0, TF1), (TF10, TF0, TF1), (TF11, TF0, TF1), (TF12, TF0, TF1), (TF13, TF0, TF1), (TF14, TF0, TF1), (TF15, TF0, TF1), (TF16, TF0, TF1), (TF17, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1), (TF9, TF1, TF1), (TF10, TF1, TF1), (TF11, TF1, TF1), (TF12, TF1, TF1), (TF13, TF1, TF1), (TF14, TF1, TF1), (TF15, TF1, TF1), (TF16, TF1, TF1), (TF17, TF1, TF1)



## 7.1.123.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	0.84

## 7.1.123.2 Downlink

## 7.1.123.2.1 Transport channel parameters

## 7.1.123.2.1.1 Transport channel parameters for conversational/speech/DL:17.6 kbps/ PS RAB

Higher layer	RAB/Signalling RB	RAB	
PDCP	PDCP header size, bit	0	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	96, 112, 144, 152, 168, 184, 200, 216, 232, 248, 280, 296, 304, 312, 320, 344, 352 (alt 0, 96, 112, 144, 152, 168, 184, 200, 216, 232, 248, 280, 296, 304, 312, 320, 344, 352)	
	Max data rate, bps	17600	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	104, 120, 152, 160, 176, 192, 208, 224, 240, 256, 288, 304, 312, 320, 328, 352, 360 (alt 0, 104, 120, 152, 160, 176, 192, 208, 224, 240, 256, 288, 304, 312, 320, 328, 352, 360)	
	TFS	TF0, bits	0x360 (alt 1x0)
		TF1, bits	1x104
		TF2, bits	1x120
		TF3, bits	1x152
		TF4, bits	1x160
		TF5, bits	1x176
		TF6, bits	1x192
		TF7, bits	1x208
		TF8, bits	1x224
		TF9, bits	1x240
		TF10, bits	1x256
		TF11, bits	1x288
		TF12, bits	1x304
TF13, bits		1x312	
TF14, bits	1x320		

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
	TF15, bits	1x328
	TF16, bits	1x352
	TF17, bits	1x360
	TTI, ms	20
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	1140
	RM attribute	180-220
<p>NOTE: Alternative 1x0 is used to have CRC present in all transport formats. Header compressor should ensure that small_CID is used and that CID 0 is allocated to this RAB</p>		

7.1.123.2.1.2 Transport channel parameters for interactive or background/DL:8 kbps/ PS RAB + DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.56.2.1.1 of [1].

7.1.123.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.123.2.1.4 TFCS

TFCS size	72
TFCS	<p>(17.6. kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)=</p> <p>(TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF9, TF0, TF0), (TF10, TF0, TF0), (TF11, TF0, TF0), (TF12, TF0, TF0), (TF13, TF0, TF0), (TF14, TF0, TF0), (TF15, TF0, TF0), (TF16, TF0, TF0), (TF17, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF9, TF1, TF0), (TF10, TF1, TF0), (TF11, TF1, TF0), (TF12, TF1, TF0), (TF13, TF1, TF0), (TF14, TF1, TF0), (TF15, TF1, TF0), (TF16, TF1, TF0), (TF17, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF9, TF0, TF1), (TF10, TF0, TF1), (TF11, TF0, TF1), (TF12, TF0, TF1), (TF13, TF0, TF1), (TF14, TF0, TF1), (TF15, TF0, TF1), (TF16, TF0, TF1), (TF17, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1), (TF9, TF1, TF1), (TF10, TF1, TF1), (TF11, TF1, TF1), (TF12, TF1, TF1), (TF13, TF1, TF1), (TF14, TF1, TF1), (TF15, TF1, TF1), (TF16, TF1, TF1), (TF17, TF1, TF1)</p>

7.1.123.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
Number of data bits/frame		480	

7.1.124 Conversational / speech / UL: 39.2 DL: 39.2 kbps / PS RAB + Interactive or Background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 6.

NOTE: The first RAB is used for multiplexed RTP and RTCP flows, the second RAB is used for SIP signaling and the third RAB is used for signaling radio bearers.

7.1.124.1 Uplink

7.1.124.1.1 Transport channel parameters

7.1.124.1.1.1 Transport channel parameters for Conversational / speech / UL: 39.2 kbps / PS RAB

Higher Layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		UM
	Payload sizes, bit		88, 304, 784
	Max data rate, bps		39200
	UMD PDU header, bit		8
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		96, 312, 792
	TFS	TF0, bits	0x792
		TF1, bits	1x96
		TF2, bits	1x312
		TF3, bits	1x792
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		2436
	Uplink: Max number of bits/radio frame before rate matching		1218
RM attribute		180-220	
NOTE: Header compressor should ensure that ROHC's small_CID is used			

## 7.1.124.1.1.2 Transport channel parameters for Interactive or Background / UL: 8 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Uplink: Max number of bits/radio frame before rate matching	267	
	RM attribute	135-175	

## 7.1.124.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

## 7.1.124.1.1.4 TFCS

TFCS size	16
TFCS	(40 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1),

## 7.1.124.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.96

## 7.1.124.2 Downlink

## 7.1.124.2.1 Transport channel parameters

## 7.1.124.2.1.1 Transport channel parameters for Conversational / speech / DL: 39.2 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	88, 304, 784	
	Max data rate, bps	39200	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	96, 312, 792	
	TFS	TF0, bits	0x792
		TF1, bits	1x96
		TF2, bits	1x312
		TF3, bits	1x792
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2436	
	RM attribute	180-220	

NOTE: Header compressor should ensure that ROHC's small\_CID is used

## 7.1.124.2.1.2 Transport channel parameters for Interactive or Background / DL: 8 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	RM attribute	135-175	

## 7.1.124.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.124.2.1.4 TFCS

TFCS size	16
TFCS	(40 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1)

## 7.1.124.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

### 7.1.125 Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128 kbps, DL: 64 kbps. This is supported in release 99.

## 7.1.125.1 Uplink

## 7.1.125.1.1 Transport channel parameters

## 7.1.125.1.1.1 Transport channel parameters for Streaming / unknown / UL:128 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	128000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	3x656
		TF4, bits	4x656
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
Uplink: Max number of bits/radio frame before rate matching	4038		
RM attribute	125-165		

7.1.125.1.1.2 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1].

7.1.125.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.125.1.1.4 TFCS

TFCS size	20
TFCS	(128 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF4,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF4,TF1,TF0), (TF0,TF0,TF0), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF4,TF0,TF1), (TF0,TF1,TF0), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1), (TF4,TF1,TF1)

7.1.125.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.88

7.1.125.2 Downlink

7.1.125.2.1 Transport channel parameters

7.1.125.2.1.1 Transport channel parameters for Streaming / unknown / DL:16 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
RM attribute	135-175		

7.1.125.2.1.2 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1].

7.1.125.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.125.2.1.4 TFCS

TFCS size	8
TFCS	(16 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1)

## 7.1.125.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

### 7.1.126 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH – Alternative

This configuration is similar to configuration 7.1.96, but uses an RLC PDU size of 336 bits for the Streaming 16 kbps RB, and defines a full TFS for the Streaming 128 kbps RB. The TF 2x656 is left out of the TFCS to increase the probability that GBR can be met.

The minimum UE classes supporting this combination are UL: 128 kbps, DL: 64 kbps. This is supported in release 99.

## 7.1.126.1 Uplink

## 7.1.126.1.1 Transport channel parameters

## 7.1.126.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

## 7.1.126.1.1.2 Transport channel parameters for Streaming / unknown / UL:128 kbps / PS RAB

See subclause 7.1.125.1.1.1.

## 7.1.126.1.1.3 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.1.1.2 of [1].

## 7.1.126.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].



7.1.126.1.1.5 TFCS

TFCS size	48
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF1,TF4,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF1,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF1,TF4,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF1,TF4,TF1,TF1)

7.1.126.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.76

7.1.126.2 Downlink

7.1.126.2.1 Transport channel parameters

7.1.126.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

7.1.126.2.1.2 Transport channel parameters for Streaming / unknown / DL:16 kbps / PS RAB

See subclause 7.1.125.2.1.1.

7.1.126.2.1.3 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.38b.2.1.2 of [1].

7.1.126.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.126.2.1.5 TFCS

TFCS size	24
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 16 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1)

7.1.126.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
Number of data bits/frame		900	

7.1.127 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum sum of number of bits of all convolutionally coded transport blocks being transmitted at an arbitrary time instant' = 1280, DL: 32 kbps plus support for 'Maximum number of TFC' = 48 and 'Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant' = 1280. The minimum UE class to support the alternative UL configuration is UL: 64kbps. The minimum UE class to support the alternative DL configuration is DL: 32 kbps plus support for 'Maximum number of TFC' = 48.

This is supported in Release 5.

7.1.127.1 Uplink

7.1.127.1.1 Transport channel parameters

7.1.127.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

7.1.127.1.1.2 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.2.4.1.23a.1.1.1 of [1].

7.1.127.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.127.1.1.4 TFCS

TFCS size	20
TFCS	(RAB subflow#1, RAB subflow#2,RAB subflow#3, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1)

7.1.127.1.1.5 TFC subset list

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1),

	<p>(TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1)),</p> <p>1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),                  (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0),                  (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1)},</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1),                  (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1),                  (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),                  (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1)}</p>
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7.1.127.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1

7.1.127.2 Downlink

7.1.127.2.1 Transport channel parameters

7.1.127.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.127.2.1.2 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.2.4.1.23a.2.1.1 of [1].

7.1.127.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.127.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.127.2.1.5 TFCS

TFCS size	40
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 8 kbps RAB, DCCH, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1)

7.1.127.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
Number of data bits/frame		900	

7.1.128 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of TFC' = 64, DL: 64 kbps plus support for 'Maximum number of TFC' = 128.

This is supported in Release 5.

7.1.128.1 Uplink

7.1.128.1.1 Transport channel parameters

7.1.128.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

7.1.128.1.1.2 Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB

See subclause 6.10.2.4.1.23c.1.1.1 of [1].

7.1.128.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.128.1.1.4 TFCS

TFCS size	50
TFCS	(RAB subflow#1, RAB subflow#2,RAB subflow#3, 32 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)

7.1.128.1.1.5 TFC subset list

TFC subset list size	3
TFC subset list	<p>0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1),                  (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0),                  (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1),                  (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1)},</p> <p>1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),                  (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0),                  (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),                  (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1),                  (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),                  (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0),                  (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1)},</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1),                  (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1),                  (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),                  (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0),                  (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0),                  (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),                  (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1),                  (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1),                  (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),                  (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)},</p>

(TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)}
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### 7.1.128.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

### 7.1.128.2 Downlink

#### 7.1.128.2.1 Transport channel parameters

##### 7.1.128.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

##### 7.1.128.2.1.2 Transport channel parameters for Interactive or background / DL:32 kbps / PS RAB

See subclause 6.10.2.4.1.23c.2.1.1 of [1].

##### 7.1.128.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

##### 7.1.128.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.128.2.1.5 TFCS

TFCS size	100
TFCS	((RAB subflow#1, RAB subflow#2, RAB subflow#3, 32 kbps RAB, DCCH, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0), (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0), (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF0,TF3,TF0,TF0), (TF3,TF2,TF0,TF3,TF0,TF0), (TF4,TF3,TF0,TF3,TF0,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF0,TF3,TF1,TF0), (TF3,TF2,TF0,TF3,TF1,TF0), (TF4,TF3,TF0,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF0,TF4,TF0,TF0), (TF3,TF2,TF0,TF4,TF0,TF0), (TF4,TF3,TF0,TF4,TF0,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF0,TF4,TF1,TF0), (TF3,TF2,TF0,TF4,TF1,TF0), (TF4,TF3,TF0,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF0,TF4,TF0,TF1), (TF3,TF2,TF0,TF4,TF0,TF1), (TF4,TF3,TF0,TF4,TF0,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF0,TF4,TF1,TF1), (TF3,TF2,TF0,TF4,TF1,TF1), (TF4,TF3,TF0,TF4,TF1,TF1))

7.1.128.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

7.1.129 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of TFC' = 64, DL: 128 kbps plus support for 'Maximum number of TFC' = 128 and 'Maximum number of physical channel bits received in any 10 ms interval (DPCH, S-CCPCH)' = 14400. The minimum UE class to support the alternative DL configuration is DL: 384 kbps plus support for 'Maximum number of TFC' = 256.

This is supported in Release 5.

### 7.1.129.1 Uplink

See subclause 7.1.109.1

### 7.1.129.2 Downlink

#### 7.1.129.2.1 Transport channel parameters

##### 7.1.129.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

##### 7.1.129.2.1.2 Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See subclause 6.10.2.4.1.31.2.1.1 of [1].

##### 7.1.129.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

##### 7.1.129.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].





	(TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF0,TF4,TF0,TF1), (TF3,TF2,TF0,TF4,TF0,TF1), (TF4,TF3,TF0,TF4,TF0,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF0,TF4,TF1,TF1), (TF3,TF2,TF0,TF4,TF1,TF1), (TF4,TF3,TF0,TF4,TF1,TF1), (TF0,TF0,TF0,TF5,TF0,TF1), (TF1,TF0,TF0,TF5,TF0,TF1), (TF2,TF1,TF0,TF5,TF0,TF1), (TF3,TF2,TF0,TF5,TF0,TF1), (TF4,TF3,TF0,TF5,TF0,TF1), (TF0,TF0,TF0,TF5,TF1,TF1), (TF1,TF0,TF0,TF5,TF1,TF1), (TF2,TF1,TF0,TF5,TF1,TF1), (TF3,TF2,TF0,TF5,TF1,TF1), (TF4,TF3,TF0,TF5,TF1,TF1), (TF0,TF0,TF0,TF6,TF0,TF1), (TF1,TF0,TF0,TF6,TF0,TF1), (TF2,TF1,TF0,TF6,TF0,TF1), (TF3,TF2,TF0,TF6,TF0,TF1), (TF4,TF3,TF0,TF6,TF0,TF1), (TF0,TF0,TF0,TF6,TF1,TF1), (TF1,TF0,TF0,TF6,TF1,TF1), (TF2,TF1,TF0,TF6,TF1,TF1), (TF3,TF2,TF0,TF6,TF1,TF1), (TF4,TF3,TF0,TF6,TF1,TF1)
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7.1.129.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		8
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	640
		Number of data bits/frame	9600

7.1.130 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 5.

7.1.130.1 Uplink

7.1.130.1.1 Transport channel parameters

7.1.130.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

7.1.130.1.1.2 Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See subclause 6.10.2.4.1.13.1.1.1 of [1].

7.1.130.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.130.1.1.4 TFCS

TFCS size	20
TFCS	(RAB subflow#1, RAB subflow#2,RAB subflow#3, 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1)

7.1.130.1.1.5 TFC subset list

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1)},  1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1)},  2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1)}

7.1.130.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.72

7.1.130.2 Downlink

7.1.130.2.1 Transport channel parameters

7.1.130.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.130.2.1.2 Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See subclause 6.10.2.4.1.13.2.1.1 of [1].

7.1.130.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.130.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.130.2.1.5 TFCS

TFCS size	40
TFCS	((RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1)

7.1.130.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
Number of data bits/frame		2100	

7.1.131 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 13.6 DL: 13.6 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release '99.

7.1.131.1 Uplink

7.1.131.1.1 Transport channel parameters

7.1.131.1.1.1 Transport channel parameters for Conversational / speech / UL: 12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.1.1.1 of [1].

7.1.131.1.1.2 Transport channel parameters for UL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	13 600	12 800	12 800	12 800
MAC	AMD/UMD PDU header, bit	8	16	16	16
	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			

Layer 1	TrCH type	DCH	
	TB sizes, bit	148 (alt 0, 148)	
	TFS	TF0, bits	0x148 (alt 1x0)
		TF1, bits	1x148
		TF2, bits	2x148
		TF3, bits	3x148
		TF4, bits	4x148
	TTI, ms	40	
	Coding type	CC 1/3	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	1992	
	Uplink: Max number of bits/radio frame before rate matching	498	
	RM attribute	155 to 185	

## 7.1.131.1.1.3 TFCS

TFCS size	11
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1), (TF0, TF0, TF0, TF2), (TF1, TF0, TF0, TF2), (TF0, TF0, TF0, TF3), (TF1, TF0, TF0, TF3), (TF0, TF0, TF0, TF4)

## 7.1.131.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.84

## 7.1.131.2 Downlink

## 7.1.131.2.1 Transport channel parameters

## 7.1.131.2.1.1 Transport channel parameters for Conversational / speech / DL: 12.2 kbps / CS RAB

See subclause 6.10.2.4.1.4.2.1.1 of [1].

## 7.1.131.2.1.2 Transport channel parameters for DL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4	
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH	
	RLC mode	UM	AM	AM	AM	
	Payload sizes, bit	136	128	128	128	
	Max data rate, bps	13 600	12 800	12 800	12 800	
	AMD/UMD PDU header, bit	8	16	16	16	
MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148 (alt 0, 148) (note)				
	TFS	TF0, bits	0x148 (alt 1x0) (note)			
		TF1, bits	1x148			
		TF2, bits	2x148			
		TF3, bits	3x148			
		TF4, bits	4x148			
TTI, ms	40					

Coding type	CC 1/3
CRC, bit	16
Max number of bits/TTI before rate matching	1992
RM attribute	155 to 230

NOTE: Alternative parameters enable the measurement "transport channel BLER" in the UE.

7.1.131.2.1.3 TFCS

TFCS size	11
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1), (TF0, TF0, TF0, TF2), (TF1, TF0, TF0, TF2), (TF0, TF0, TF0, TF3), (TF1, TF0, TF0, TF3), (TF0, TF0, TF0, TF4)

7.1.131.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
		Number of data bits/frame	480

7.1.132 Conversational / speech / UL: (12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL: 13.6 DL: 13.6 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 12 kbps with support of 'Maximum number of TFC = 32', DL: 12 kbps with support of 'Maximum number of TFC = 32'.

This is supported in Release '99.

7.1.132.1 Uplink

7.1.132.1.1 Transport channel parameters

7.1.132.1.1.1 Transport channel parameters for Conversational / speech / UL:(12.2 7.95 5.9 4.75) kbps / CS RAB

See subclause 6.10.2.4.1.4a.1.1.1 of [1].

7.1.132.1.1.2 Transport channel parameters for UL:13.6 kbps SRBs for DCCH

See subclause 7.1.131.1.1.2.

7.1.132.1.1.3 TFCS

TFCS size	17
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF5,TF4,TF1,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF5,TF4,TF1,TF1), (TF0,TF0,TF0,TF2), (TF1,TF0,TF0,TF2), (TF0,TF0,TF0,TF3), (TF1,TF0,TF0,TF3), (TF0, TF0, TF0, TF4)

## 7.1.132.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.84

## 7.1.132.2 Downlink

## 7.1.132.2.1 Transport channel parameters

## 7.1.132.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.2 7.95 5.9 4.75) kbps / CS RAB

See subclause 6.10.2.4.1.4a.2.1.1 of [1].

## 7.1.132.2.1.2 Transport channel parameters for DL:13.6 kbps SRBs for DCCH

See subclause 7.1.131.2.1.2.

## 7.1.132.2.1.3 TFCS

TFCS size	17
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF5,TF4,TF1,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF5,TF4,TF1,TF1), (TF0,TF0,TF0,TF2), (TF1,TF0,TF0,TF2), (TF0,TF0,TF0,TF3), (TF1,TF0,TF0,TF3), (TF0,TF0,TF0,TF4)

## 7.1.132.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		128
	DPCCH	Number of TFCl bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
		Number of data bits/frame	480

## 7.1.133 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:13.6 DL:13.6 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps with support of 'Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant' = 2560 and 'Maximum number of physical channel bits received in any 10 ms interval (DPCH, S-CCPCH)' = 2400. The minimum UE class to support the alternative DL configuration (40ms TTI) is DL: 64 kbps.

This is supported in Release '99.

7.1.133.1 Uplink

7.1.133.1.1 Transport channel parameters

7.1.133.1.1.1 Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See subclause 6.10.2.4.1.13.1.1.1 of [1].

7.1.133.1.1.2 Transport channel parameters for UL:13.6 kbps SRBs for DCCH

See subclause 7.1.131.1.1.2

7.1.133.1.1.3 TFCS

TFCS size	7
TFCS	(64 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1), (TF0, TF2), (TF0, TF3), (TF0, TF4)

7.1.133.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.88

7.1.133.2 Downlink

7.1.133.2.1 Transport channel parameters

7.1.133.2.1.1 Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See subclause 6.10.2.4.1.13.2.1.1 of [1].

7.1.133.2.1.2 Transport channel parameters for DL:13.6 kbps SRBs for DCCH

See subclause 7.1.131.2.1.2

7.1.133.2.1.3 TFCS

TFCS size	7
TFCS	(64 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1), (TF0, TF2), (TF0, TF3), (TF0, TF4)

7.1.133.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2 100



**7.1.134 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + UL: 13.6 DL: 13.6 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release 5.

**7.1.134.1 Uplink**

**7.1.134.1.1 Transport channel parameters**

**7.1.134.1.1.1 Transport channel parameters for Conversational / speech / UL:(12.65 8.85 6.6) kbps / CS RAB**

See subclause 6.10.2.4.1.62.1.1.1 of [1].

**7.1.134.1.1.2 Transport channel parameters for UL:13.6 kbps SRBs for DCCH**

See subclause 7.1.131.1.1.2.

**7.1.134.1.1.3 TFCS**

TFCS size	15
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF0,TF0,TF0,TF2), (TF1,TF0,TF0,TF2), (TF0,TF0,TF0,TF3), (TF1,TF0,TF0,TF3), (TF0,TF0,TF0,TF4)

**7.1.134.1.2 Physical channel parameters**

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.84

**7.1.134.2 Downlink**

**7.1.134.2.1 Transport channel parameters**

**7.1.134.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB**

See subclause 6.10.2.4.1.62.2.1.1 of [1].

**7.1.134.2.1.2 Transport channel parameters for DL:13.6 kbps SRBs for DCCH**

See subclause 7.1.131.2.1.2.

**7.1.134.2.1.3 TFCS**

TFCS size	15
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF3,TF2,TF0,TF0), (TF4,TF3,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1), (TF3,TF2,TF0,TF1), (TF4,TF3,TF0,TF1), (TF0,TF0,TF0,TF2), (TF1,TF0,TF0,TF2), (TF0,TF0,TF0,TF3), (TF1,TF0,TF0,TF3), (TF0,TF0,TF0,TF4)

## 7.1.134.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
Number of data bits/frame		480	

7.1.135 Void

7.1.136 Void

7.1.137 Interactive or Background / UL:32 DL:64 kbps / PS RAB +  
 Interactive or Background / UL:32 DL:64 kbps / PS RAB+ UL:3.4  
 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps plus support for 'Maximum number of AM entities' = 5, DL: 64kbps plus support for 'Maximum number of AM entities' = 5. The minimum UE class to support the alternative UL physical configuration is UL: 12kbps plus support for 'Maximum number of AM entities' = 5 and 'Maximum number of DPDCH bits transmitted per 10 ms' = 1200.

This is supported in Release '99.

## 7.1.137.1 Uplink

## 7.1.137.1.1 Transport channel parameters

## 7.1.137.1.1.1 Transport channel parameters for Interactive or Background / UL:32 + UL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	32000	32000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340 (alt. N/A)	
	TTI, ms	20 (alt. 10)		
	Coding type	TC (alt. CC 1/3)		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	2148 (1092)		
	Uplink: Max number of bits/radio frame before rate matching	1074 (1092)		
RM attribute	135-175			

## 7.1.137.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1]

## 7.1.137.1.1.3 TFCS

TFCS size	6 (alt. 4)
TFCS	(32 kbps RAB + 32 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1) (alt. (TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1))

## 7.1.137.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	0.88

## 7.1.137.2 Downlink

See subclause 7.1.72.2.

## 7.1.138 Interactive or background / UL:128 DL:384 kbps / PS RAB + Interactive or Background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL: 384kbps.

This is supported in Release '99.

7.1.138.1 Uplink

See subclause 7.1.88.1

7.1.138.2 Downlink

See subclause 7.1.87.2

7.1.139 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of AM entities' = 5, DL: 32 kbps plus support for 'Maximum number of AM entities' = 5.

This is supported in Release 5.

7.1.139.1 Uplink

7.1.139.1.1 Transport channel parameters

7.1.139.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.1.1.1 of [1].

7.1.139.1.1.2 Transport channel parameters for Interactive or background / UL:0 + UL:0 kbps / PS RAB

See subclause 7.1.79.1.1.2

7.1.139.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.139.1.1.4 TFCS

TFCS size	10
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1)

7.1.139.1.1.5 TFC subset list

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1)}, 1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1)}, 2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1),

(TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1)}
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7.1.139.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.84

7.1.139.2 Downlink

7.1.139.2.1 Transport channel parameters

7.1.139.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.139.2.1.2 Transport channel parameters for Interactive or background / DL:0 + DL:0 kbps / PS RAB

See subclause 7.1.79.2.1.2

7.1.139.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.139.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.139.2.1.5 TFCS

TFCS size	20
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0 kbps RAB, DCCH 3.4, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1)

7.1.139.2.2 Physical channel parameters

See subclause 6.10.2.4.1.62.2.2 of [1].

**7.1.140 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of AM entities' = 5 and 'Maximum number of TFC' = 64, DL: 64 kbps plus support for 'Maximum number of AM entities' = 5 and 'Maximum number of TFC' = 128.

This is supported in Release 5.

**7.1.140.1 Uplink**

**7.1.140.1.1 Transport channel parameters**

**7.1.140.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB**

See subclause 6.10.2.4.1.62.1.1.1 of [1].

**7.1.140.1.1.2 Transport channel parameters for Interactive or background / UL:64 + UL:64 kbps / PS RAB**

See subclause 6.10.2.4.1.38d.1.1.2 of [1].

**7.1.140.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.1.1.1 of [1].

**7.1.140.1.1.4 TFCS**

TFCS size	50
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64+64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)

**7.1.140.1.1.5 TFC subset list**

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0),

	<p>(TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1),                  (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1)),</p> <p>1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),                  (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0),                  (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),                  (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1),                  (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),                  (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0),                  (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1)},</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1),                  (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1),                  (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),                  (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0),                  (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0),                  (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),                  (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1),                  (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1),                  (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),                  (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)}</p>
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7.1.140.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.76

7.1.140.2 Downlink

7.1.140.2.1 Transport channel parameters

7.1.140.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.140.2.1.2 Transport channel parameters for Interactive or background / DL:64 + DL:64 kbps / PS RAB

See subclause 6.10.2.4.1.38d.2.1.2 of [1].

7.1.140.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.140.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.140.2.1.5 TFCS

TFCS size	100
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64+64 kbps RAB, DCCH 3.4, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0), (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0), (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF0,TF3,TF0,TF0), (TF3,TF2,TF0,TF3,TF0,TF0), (TF4,TF3,TF0,TF3,TF0,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF0,TF3,TF1,TF0), (TF3,TF2,TF0,TF3,TF1,TF0), (TF4,TF3,TF0,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF0,TF4,TF0,TF0), (TF3,TF2,TF0,TF4,TF0,TF0), (TF4,TF3,TF0,TF4,TF0,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF0,TF4,TF1,TF0), (TF3,TF2,TF0,TF4,TF1,TF0), (TF4,TF3,TF0,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF0,TF4,TF0,TF1), (TF3,TF2,TF0,TF4,TF0,TF1), (TF4,TF3,TF0,TF4,TF0,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF0,TF4,TF1,TF1), (TF3,TF2,TF0,TF4,TF1,TF1), (TF4,TF3,TF0,TF4,TF1,TF1)

7.1.140.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		32
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100



**7.1.141 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH**

The minimum UE classes supporting this combination are UL: 128 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16 and 'Maximum number of TFC' = 64, DL: 128 kbps plus support for 'Maximum number of TFC' = 128.

This is supported in Release 5.

**7.1.141.1 Uplink**

**7.1.141.1.1 Transport channel parameters**

**7.1.141.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB**

See subclause 6.10.2.4.1.62.1.1.1 of [1].

**7.1.141.1.1.2 Transport channel parameters for Interactive or background / UL:128 + UL:128kbps / PS RAB**

See subclause 7.1.88.1.1.1

**7.1.141.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.1.1.1 of [1].

**7.1.141.1.1.4 TFCS**

TFCS size	50
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128+128 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)

**7.1.141.1.1.5 TFC subset list**

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0),

	<p>(TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1),                  (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1)),</p> <p>1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),                  (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0),                  (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),                  (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1),                  (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),                  (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0),                  (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1)},</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1),                  (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1),                  (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),                  (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0),                  (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0),                  (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),                  (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1),                  (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1),                  (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),                  (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)}</p>
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7.1.141.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.88

7.1.141.2 Downlink

7.1.141.2.1 Transport channel parameters

7.1.141.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.141.2.1.2 Transport channel parameters for Interactive or background / DL:128 + DL:128 kbps / PS RAB

See subclause 7.1.88.2.1.1

7.1.141.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.141.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.141.2.1.5 TFCS

TFCS size	100
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128+128 kbps RAB, DCCH 3.4, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0), (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0), (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF0,TF3,TF0,TF0), (TF3,TF2,TF0,TF3,TF0,TF0), (TF4,TF3,TF0,TF3,TF0,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF0,TF3,TF1,TF0), (TF3,TF2,TF0,TF3,TF1,TF0), (TF4,TF3,TF0,TF3,TF1,TF0), (TF0,TF0,TF0,TF4,TF0,TF0), (TF1,TF0,TF0,TF4,TF0,TF0), (TF2,TF1,TF0,TF4,TF0,TF0), (TF3,TF2,TF0,TF4,TF0,TF0), (TF4,TF3,TF0,TF4,TF0,TF0), (TF0,TF0,TF0,TF4,TF1,TF0), (TF1,TF0,TF0,TF4,TF1,TF0), (TF2,TF1,TF0,TF4,TF1,TF0), (TF3,TF2,TF0,TF4,TF1,TF0), (TF4,TF3,TF0,TF4,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF0,TF0,TF0,TF4,TF0,TF1), (TF1,TF0,TF0,TF4,TF0,TF1), (TF2,TF1,TF0,TF4,TF0,TF1), (TF3,TF2,TF0,TF4,TF0,TF1), (TF4,TF3,TF0,TF4,TF0,TF1), (TF0,TF0,TF0,TF4,TF1,TF1), (TF1,TF0,TF0,TF4,TF1,TF1), (TF2,TF1,TF0,TF4,TF1,TF1), (TF3,TF2,TF0,TF4,TF1,TF1), (TF4,TF3,TF0,TF4,TF1,TF1)

7.1.141.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCl bits/slot		8
	Number of TPC bits/slot		8
	Number of Pilot bits/slot		16
DPDCH	Number of data bits/slot		288
	Number of data bits/frame		4320

**7.1.142 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB (20ms TTI) + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps plus support for 'Maximum number of TFC' = 64 and 'Maximum number of physical channel bits received in any 10 ms interval (DPCH, S-CCPCH)' = 2400.

This is supported in Release 5.

**7.1.142.1 Uplink**

**7.1.142.1.1 Transport channel parameters**

**7.1.142.1.1.1 Transport channel parameters for Conversational / speech / UL: (12.65 8.85 6.6) kbps / CS RAB**

See subclause 6.10.2.4.1.62.1.1.1 of [1].

**7.1.142.1.1.2 Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB**

See subclause 6.10.2.4.1.23d.1.1.1 of [1].

**7.1.142.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH**

See subclause 6.10.2.4.1.2.1.1.1 of [1].

**7.1.142.1.1.4 TFCS**

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2,RAB subflow#3, 32 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1)

**7.1.142.1.1.5 TFC subset list**

TFC subset list size	3
TFC subset list	0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1)}  1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1),

	<p>(TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1)}</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1)}</p>
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7.1.142.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

7.1.142.2 Downlink

7.1.142.2.1 Transport channel parameters

7.1.142.2.1.1 Transport channel parameters for Conversational / speech / DL: (12.65 8.85 6.6) kbps / CS RAB

See subclause 6.10.2.4.1.62.2.1.1 of [1].

7.1.142.2.1.2 Transport channel parameters for Interactive or background / DL:32 kbps / PS RAB

See subclause 6.10.2.4.1.23d.2.1.1 of [1].

7.1.142.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

7.1.142.2.1.4 Transport channel parameters for DL:0.15 kbps SRB#5 for DCCH

See subclause 6.10.2.4.1.62.2.1.3 of [1].

7.1.142.2.1.5 TFCS

TFCS size	60
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 32 kbps RAB, DCCH, DCCH 0.15)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0), (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0), (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0), (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0), (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0), (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1), (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1), (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1)

7.1.142.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible or fixed
	Spreading factor		
DPCCH	Number of TFCl bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		140
	Number of data bits/frame		2100

7.1.143 Conversational / speech / UL:6.6 DL:6.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 12 kbps, DL: 12 kbps.

This is supported in Release 5.

7.1.143.1 Uplink

7.1.143.1.1 Transport channel parameters

7.1.143.1.1.1 Transport channel parameters for Conversational / speech / UL: 6.6 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3 (note 2)	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	40, 54 (alt. 0, 40, 54)	78	60	
	Max data rate, bps	6600			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	40, 54 (alt. 0, 40, 54)	78	60	
	TFS	TF0, bits	0x54 (alt. 1x0) (note 1)	0x78	0x60
		TF1, bits	1x40	1x78	N/A
		TF2 bits	1x54	N/A	N/A
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	N/A	
	Max number of bits/TTI after channel coding	222	258	0	
	Uplink: Max number of bits/radio frame before rate matching	111	129	0	
	RM attribute	180 to 220	170 to 210	256	
NOTE 1: In case of using this alternative, CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see clause 4.2.1.1 in 3GPP TS 25.212 [14]).					
NOTE 2: RAB subflow #3 does not exist in lu interface. UTRAN establishes this additional "dummy" subflow when the RAB for Wideband AMR is assigned.					

## 7.1.143.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

## 7.1.143.1.1.3 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)=  (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1)

## 7.1.143.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

## 7.1.143.2 Downlink

## 7.1.143.2.1 Transport channel parameters

## 7.1.143.2.1.1 Transport channel parameters for Conversational / speech / DL: 6.6 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3 (note 2)	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	0, 40, 54	78	60	
	Max data rate, bps	6600			
	TrD PDU header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	0, 40, 54	78	60	
	TFS	TF0, bits	1x0 (note 2)	0x78	0x60
		TF1, bits	1x40	1x78	N/A
		TF2 bits	1x54	N/A	N/A
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	N/A	
	Max number of bits/TTI after channel coding	222	258	0	
	RM attribute	180 to 220	170 to 210	256	
NOTE 1: The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH, (see clause 4.3 in 3GPP TS 25.212 [14]).					
NOTE 2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see clause 4.2.1.1 in 3GPP TS 25.212 [14]).					
NOTE 3: RAB subflow #3 does not exist in lu interface. UTRAN establishes this additional "dummy" subflow when the RAB for Wideband AMR is assigned					

## 7.1.143.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.2.1.1 of [1].

## 7.1.143.2.1.3 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)=  (TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0), (TF2,TF1,TF0,TF0), (TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF1), (TF2,TF1,TF0,TF1)

## 7.1.143.2.2 Physical channel parameters

DPCH Downlink	DTX position		Fixed
	Spreading factor		256 (alt. 128)128
	DPCCH	Number of TFCl bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	2 (alt 4)
	DPDCH	Number of data bits/slot	16 (alt. 34)34
		Number of data bits/frame	240 (alt 510)510

Note: The alternative DPDCH configuration is used with spreading factor of 128.



## 7.1.144 Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

### 7.1.144.1 Uplink

#### 7.1.144.1.1 Transport channel parameters

##### 7.1.144.1.1.1 Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	64 000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
		TF3, bits	3x328
		TF4, bits	4x328
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4 236	
Uplink: Max number of bits/radio frame before rate matching	2 118		
RM attribute	130 to 170		

##### 7.1.144.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1.

##### 7.1.144.1.1.3 TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

##### 7.1.144.1.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2 400
	Puncturing Limit	0.96

### 7.1.144.2 Downlink

#### 7.1.144.2.1 Transport channel parameters

##### 7.1.144.2.1.1 Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	64 000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
		TF3, bits	3x328
		TF4, bits	4x328
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4 236	
RM attribute	130 to 170		

#### 7.1.144.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1.

#### 7.1.144.2.1.3 TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

#### 7.1.144.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2 100

## 7.2 Combinations on S-CCPCH

### 7.2.1 Stand-alone signalling RB for PCCH

See subclause 6.10.2.4.3.1 of [1].

The minimum UE class supporting this combination is DL: 12 kbps.

This is supported in Release '99.

### 7.2.2 Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.2.4.3.2 of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

### 7.2.3 Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.2.4.3.2a of [1].

The minimum UE class supporting this combination is DL: 32 kbps plus support for 5 AM entities.

This is supported in Release '99.

### 7.2.4 Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.2.4.3.3 of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

### 7.2.5 16 kbps RB for CTCH + SRB for CCCH + SRB for BCCH

See subclause 6.10.2.4.3.4 of [1].

The minimum UE class supporting this combination is DL: 12 kbps.

This is supported in Release '99.

### 7.2.6 RB for CTCH + Interactive/Background 32 kbps PS RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

#### 7.2.6.1 Transport channel parameters

##### 7.2.6.1.1 Transport channel parameters of RB for CTCH

Higher layer	RAB/signalling RB	N/A	
	User of Radio Bearer	BMC	
RLC	Logical channel type	CTCH	
	RLC mode	UM	
	Payload sizes, bit	152	
	Max data rate, bps	15200	
	UMD PDU header, bit	8	
MAC	MAC header, bit	8	
	MAC multiplexing	N/A	
Layer 1	TrCH type	FACH	
	TB sizes, bit	168	
	TFS	TF0, bts	0x168
		TF1, bits	1x168
	TTI, ms	10	
	Coding type	CC 1/2	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	384	
RM attribute	200-240		

7.2.6.1.2 Transport channel parameters of SRB for Interactive/Background 32 kbps PS RAB

See subclause 6.10.2.4.3.2.1.1 of [1].

7.2.6.1.3 Transport channel parameter of SRB for PCCH

See subclause 6.10.2.4.3.1.1.1 of [1].

7.2.6.1.4 Transport channel parameters of SRBs for CCCH, SRB for DCCH, and SRB for BCCH

See subclause 6.10.2.4.3.2.1.2 of [1].

7.2.6.1.5 TFCS

TFCS size	14
TFCS	(SRB for PCCH, SRBs for CCCH/DCCH/BCCH, 32kbps RAB, RB for CTCH) = (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF0, TF1, TF0, TF0), (TF1, TF1, TF0, TF0), (TF0, TF2, TF0, TF0), (TF1, TF2, TF0, TF0), (TF0, TF0, TF1, TF0), (TF0, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF0, TF1, TF0, TF1), (TF1, TF1, TF0, TF1), (TF0, TF2, TF0, TF1), (TF0, TF0, TF1, TF1)

7.2.6.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	64
	Number of TFCI bits/slot	8
	Number of Pilot bits/slot	0
	Number of data bits/slot	72
	Number of data bits/frame	1080

## 7.2.7 Interactive/Background 16 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

### 7.2.7.1 Transport channel parameters

#### 7.2.7.1.1 Transport channel parameters for Interactive/Background 16 kbps PS RAB

Higher layer	RAB/signalling RB	RAB	
	User of Radio Bearer	Interactive/ Background RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	24	
	MAC multiplexing	N/A	
Layer 1	TrCH type	FACH	
	TB sizes, bit	360	
	TFS	TF0, bits	0x360
		TF1, bits	1x360
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	1140	
	RM attribute	110-150	

#### 7.2.7.1.2 Transport channel parameters of SRBs for CCCH, SRB for DCCH, and SRB for BCCH

Higher layer	RAB/signalling RB	SRB#0	SRB#1	SRB#2	SRB#3	SRB#4	SRB#5	
	User of Radio Bearer	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	RRC	
RLC	Logical channel type	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	
	RLC mode	UM	UM	AM	AM	AM	TM	
	Payload sizes, bit	152	136 or 120 (note)	128	128	128	166	
	Max data rate, bps	15200	13600 or 12000	12800	12800	12800	16600	
	AMD/UMD/TrD PDU header, bit	8	8	16	16	16	0	
MAC	MAC header, bit	8	24 or 40	24	24	24	2	
	MAC multiplexing	6 logical channel multiplexing						
Layer 1	TrCH type	FACH						
	TB sizes, bit	168						
	TFS	TF0, bits	0x168					
		TF1, bits	1x168					
		TF2, bits	2x168					
	TTI, ms	20						
	Coding type	CC 1/2						
	CRC, bit	16						
	Max number of bits/TTI before rate matching	752						
RM attribute	200-240							
NOTE: MAC header size and PLC payload size depend on use of U-RNTI or C-RNTI.								

## 7.2.7.1.3 TFCS

TFCS size	4
TFCS	(SRBs for CCCH/DCCH/BCCH, 16 kbps RAB) = (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1)

## 7.2.7.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	128
	Number of TFCI bits/slot	2
	Number of Pilot bits/slot	0
	Number of data bits/slot	38
	Number of data bits/frame	570

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

## 7.2.8 8 kbps RB for CTCH + SRB for CCCH + SRB for BCCH

## 7.2.8.1 Transport channel parameters

## 7.2.8.1.1 Transport channel parameters of 8 kbps RB for CTCH

Higher layer	RAB/signalling RB		N/A
	User of Radio Bearer		BMC
RLC	Logical channel type		CTCH
	RLC mode		UM
	Payload sizes, bit		152
	Max data rate, bps		7600
	UMD PDU header, bit		8
MAC	MAC header, bit		8
	MAC multiplexing		N/A
Layer 1	TrCH type		FACH
	TB sizes, bit		168
	TFS	TF0, bts	0x168
		TF1, bits	1x168
	TTI, ms		20
	Coding type		CC 1/3
	CRC, bit		16
	Max number of bits/TTI before rate matching		576
	RM attribute		200-240

## 7.2.8.1.2 Transport channel parameters of SRB for CCCH and SRB for BCCH

Higher layer	RAB/signalling RB	SRB#0	SRB#5	
	User of Radio Bearer	RRC	RRC	
RLC	Logical channel type	CCCH	BCCH	
	RLC mode	UM	TM	
	Payload sizes, bit	152	166	
	Max data rate, bps	7600	8300	
	AMD/UMD/TrD PDU header, bit	8	0	
MAC	MAC header, bit	8	2	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	FACH		
	TB sizes, bit	168		
	TFS	TF0, bits	0x168	
		TF1, bits	1x168	
	TTI, ms	20		
	Coding type	CC 1/3		
	CRC, bit	16		
	Max number of bits/TTI before rate matching	576		
	RM attribute	200-240		

## 7.2.8.1.3 TFCS

TFCS size	3
TFCS	(SRBs for CCCH/ BCCH, RB for CTCH) = (TF0, TF0), (TF1, TF0), (TF0, TF1)

## 7.2.8.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	256
	Number of TFCI bits/slot	2
	Number of Pilot bits/slot	0
	Number of data bits/slot	18
	Number of data bits/frame	270

The minimum UE class supporting this combination is DL: 12 kbps.

This is supported in Release '99.

## 7.2.9 Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

## 7.2.9.1 Transport channel parameters

## 7.2.9.1.1 Transport channel parameters for Interactive or background / 32 kbps / PS RAB + 32 kbps / PS RAB (RLC size 320)

See subclause 6.10.2.4.3.2a.1.1 of [1]

7.2.9.1.2 Transport channel parameters for Interactive or background / 32 kbps / PS RAB + 32 kbps / PS RAB (RLC size 640)

Higher Layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	640	640	
	Max data rate, bps	32000	32000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	24	24	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	FACH		
	TB sizes, bit	680		
	TFS	TF0, bits	0x680	
		TF1, bits	1x680	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	2100		
RM attribute	110- 150			

7.2.9.1.3 Transport channel parameters of SRB for PCCH

See subclause 6.10.2.4.3.1.1 of [1]

7.2.9.1.4 Transport channel parameters of SRBs for CCCH, SRB for DCCH, and SRB for BCCH

See subclause 6.10.2.4.3.2.1.2 of [1]

7.2.9.1.5 TFCS

TFCS size	7, 8, 9 or 10 for 240 bits PCH TrBlk size and TF3 not used (alt 7, 8, 9 or 10, 11 or 12 for 80 bits PCH TrBlk size and TF3 not used) (alt 7, 8, 9, 10 or 11 for 240 bits PCH TrBlk size and TF3 used) (alt. 7, 8, 9, 10, 11, 12, 13 or 14 for 80 bits PCH TrBlk size and TF3 used)
TFCS	(SRB for PCCH, SRBs for CCCH/ DCCH/ BCCH, 32 kbps RAB (RLC size 320), 32 kbps RAB (RLC size 640)) = (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF0, TF1, TF0, TF0), (TF1, TF1, TF0, TF0), (TF0, TF2, TF0, TF0), [TF1, TF2, TF0, TF0] (see note), (TF0, TF0, TF1, TF0), [TF0, TF1, TF1, TF0] (see note), (TF0, TF0, TF0, TF1), [TF0, TF1, TF0, TF1] (see note) for 240 bits PCH TrBlk size and TF3 not used (alt. (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF0, TF1, TF0, TF0), (TF1, TF1, TF0, TF0), (TF0, TF2, TF0, TF0), [TF1, TF2, TF0, TF0] (see note), (TF0, TF0, TF1, TF0), [TF1, TF0, TF1, TF0] (see note), [TF0, TF1, TF1, TF0] (see note), (TF0, TF0, TF0, TF1), [TF1, TF0, TF0, TF1] (see note), [TF0, TF1, TF0, TF1] (see note) for 80 bits PCH TrBlk size and TF3 not used) (alt. (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF0, TF1, TF0, TF0), (TF0, TF2, TF0, TF0), [TF1, TF2, TF0, TF0] (see note), [TF0, TF3, TF0, TF0] (see note), (TF0, TF0, TF1, TF0), [TF1, TF0, TF0, TF1] (see note), (TF0, TF0, TF0, TF1), [TF0, TF1, TF0, TF1] (see note) for 240 bits PCH TrBlk size and TF3 used) (alt. (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF0, TF1, TF0, TF0), (TF1, TF1, TF0, TF0), (TF0, TF2, TF0, TF0), [TF1, TF2, TF0, TF0] (see note), [TF0, TF3, TF0, TF0] (see note), [TF1, TF3, TF0, TF0] (see note), (TF0, TF0, TF1, TF0), [TF1, TF0, TF1, TF0] (see note), [TF0, TF1, TF1, TF0] (see note), (TF0, TF0, TF0, TF1), [TF1, TF0, TF0, TF1] (see note), [TF0, TF1, TF0, TF1] (see note) for 80 bits PCH TrBlk size and TF3 used)
NOTE:	These TFCs are available only if SCCPCH can be allocated bigger Tx power than required Tx power for TFC of (TF0, TF2, TF0).



## 7.2.9.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	64
	Number of TFCI bits/slot	8
	Number of Pilot bits/slot	0
	Number of data bits/slot	72
	Number of data bits/frame	1080

The minimum UE class supporting this combination is DL: 32 kbps plus support for 5 AM entities.

## 7.2.10 258.4 kbps RB for MTCH with 40 ms TTI

## 7.2.10.1 Transport channel parameters

## 7.2.10.1.1 Transport channel parameters for 258.4 kbps PS RAB

Higher layer	RAB/signalling RB		RAB
	User of Radio Bearer		MBMS
RLC	Logical channel type		MTCH
	RLC mode		UM
	Payload sizes, bit		968, 1272, 2264, 2584, 3544, 3864, 4824
	Max data rate, bps		258 400
	UMD PDU header, bit		8
MAC	MAC header, bit		8
	MAC multiplexing		N/A
Layer 1	TrCH type		FACH
	TB sizes, bit		984, 1288, 2280, 2600, 3560, 3880, 4840
	TFS [1]	TF0, bits	0x984
		TF1, bits	1x984
		TF2, bits	1x1288
		TF3, bits	1x2280
		TF4, bits	1x2600
		TF5, bits	1x3560
		TF6, bits	1x3880
		TF7, bits	1x4840
		TF8, bits	2x2600
		TF9, bits	5x1288
		TF10, bits	3x2600
		TF11, bits	7x1288
	TF12, bits	4x2600	
	TTI, ms		40
Coding type		TC	
CRC, bit		16	
Max number of bits/TTI before rate matching		31 464	
RM attribute		n/a	

NOTE 1 (informative): The corresponding RTP payload sizes that fit most ideally into the transport formats are 936, 2232, 3528, 4792, 5136, 6328, 7720, 8872, and 10304 bits:

TF	RTP packet size and header status
0x984	No data
1x984	936 (compressed header)
1x1288	936 (uncompressed header)
1x2280	2232 (compressed header)
1x2600	2232(uncompressed header)
1x3560	3512(compressed header)
1x3880	3528(uncompressed header)
1x4840	4792 (compressed header)
2x2600	5136 (compressed header)
5x1288	4792 (uncompressed header) 6328(compressed header)
3x2600	6328(uncompressed header) 7720(compressed header)
7x1288	7720(uncompressed header) 8872 (compressed header)
4x2600	8872 (uncompressed header) 10304 (compressed header) 10304 (uncompressed header, with overflow to next TTI)

This table is not absolutely optimal; for instance, a 6328-bit RTP packet with an uncompressed header could be more closely accommodated with a TF of 3x2280, or exactly with a TF of 2x3344 (requiring a new TB size and matching PDU size). However, because uncompressed headers are infrequent, we have dimensioned the larger TB sizes only for the compressed-header case, accepting that the occasional uncompressed header on a large packet will involve a waste of bandwidth (small in proportion to the large packet size).

#### 7.2.10.1.2 TFCS

TFCS size	13
TFCS	258.4 kbps RAB =TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8, TF9, TF10, TF11, TF12

#### 7.2.10.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	8
	Number of TFCl bits/slot	8
	Number of Pilot bits/slot	0
	Number of data bits/slot	632
	Number of data bits/frame	9480

The minimum UE class supporting this combination is MBMS minimum capability.

This is supported in Release 6.

## 7.2.11 129.2 kbps RB for MTCH with 40 ms TTI

### 7.2.11.1 Transport channel parameters

#### 7.2.11.1.1 Transport channel parameters for 129.2 kbps PS RAB

Higher layer	RAB/signalling RB		RAB
	User of Radio Bearer		MBMS
RLC	Logical channel type		MTCH
	RLC mode		UM
	Payload sizes, bit		968, 1272, 2280, 2584, 3544, 3864, 4824
	Max data rate, bps		129 200
	UMD PDU header, bit		8
MAC	MAC header, bit		8
	MAC multiplexing		N/A
Layer 1	TrCH type		FACH
	TB sizes, bit		984, 1288, 2280, 2600, 3560, 3880, 4840
	TFS [1]	TF0, bits	0x984
		TF1, bits	1x984
		TF2, bits	1x1288
		TF3, bits	1x2280
		TF4, bits	1x2600
		TF5, bits	1x3560
		TF6, bits	1x3880
		TF7, bits	1x4840
	TF8, bits	2x2600	
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
Max number of bits/TTI before rate matching		15 732	
RM attribute		n/a	

NOTE 1 (informative): The corresponding RTP payload sizes that fit most ideally into the transport formats are 936, 2232, 3528, 4792, and 5136 bits:

TF	RTP packet size and header status
0x984	No data
1x984	936 (compressed header)
1x1288	936 (uncompressed header)
1x2280	2232 (compressed header)
1x2600	2232 (uncompressed header)
1x3560	3512 (compressed header)
1x3880	3528 (uncompressed header)
1x4840	4792 (compressed header)
2x2600	5136 (compressed header)
	4792 (uncompressed header, with overflow to next TTI)
	5056 (uncompressed header, with overflow to next TTI)

The overflow in the case of a 4792-bit RTP packet with uncompressed header could be avoided by reducing the packet size to 4776 (hence reducing the corresponding TB size to 4824 and the PDU size to 4808), at the cost of a small amount of application bandwidth.

#### 7.2.11.1.2 TFCS

TFCS size	9
TFCS	129.2kbps RAB =TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8

## 7.2.11.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	8
	Number of TFCI bits/slot	8
	Number of Pilot bits/slot	0
	Number of data bits/slot	632
	Number of data bits/frame	9480

The minimum UE class supporting this combination is MBMS minimum capability.

This is supported in Release 6.

## 7.2.12 129.2 kbps RB for MTCH with 80 ms TTI

## 7.2.12.1 Transport channel parameters

## 7.2.12.1.1 Transport channel parameters for 129.2 kbps PS RAB

Higher layer	RAB/signalling RB		RAB
	User of Radio Bearer		MBMS
RLC	Logical channel type		MTCH
	RLC mode		UM
	Payload sizes, bit		968, 1272, 2280, 2584, 3544, 3864, 4824
	Max data rate, bps		129 200
	UMD PDU header, bit		8
MAC	MAC header, bit		8
	MAC multiplexing		N/A
Layer 1	TrCH type		FACH
	TB sizes, bit		984, 1288, 2280, 2600, 3560, 3880, 4840
	TFS [1]	TF0, bits	0x984
		TF1, bits	1x984
		TF2, bits	1x1288
		TF3, bits	1x2280
		TF4, bits	1x2600
		TF5, bits	1x3560
		TF6, bits	1x3880
		TF7, bits	1x4840
		TF8, bits	2x2600
		TF9, bits	5x1288
		TF10, bits	3x2600
		TF11, bits	7x1288
	TF12, bits	4x2600	
	TTI, ms		80
	Coding type		TC
CRC, bit		16	
Max number of bits/TTI before rate matching		31 464	
RM attribute		n/a	

NOTE 1 (informative): The corresponding RTP payload sizes that fit most ideally into the transport formats are 936, 2232, 3528, 4792, 5136, 6328, 7720, 8872, and 10304 bits:

TF	RTP packet size and header status
0x984	No data
1x984	936 (compressed header)
1x1288	936 (uncompressed header)
1x2280	2232 (compressed header)
1x2600	2232 (uncompressed header)
1x3560	3512 (compressed header)
1x3880	3528 (uncompressed header)
1x4840	4792 (compressed header)
2x2600	5136 (compressed header)
5x1288	4792 (uncompressed header) 6328 (compressed header)
3x2600	6328 (uncompressed header) 7720 (compressed header)
7x1288	7720 (uncompressed header) 8872 (compressed header)
4x2600	8872 (uncompressed header) 10304 (compressed header) 10304 (uncompressed header, with overflow to next TTI)

This mapping is suboptimal in the same ways identified in subclause 7.2.10.1.

7.2.12.1.2 TFCS

TFCS size	13
TFCS	129.2 kbps RAB =TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8, TF9, TF10, TF11, TF12

7.2.12.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	16
	Number of TFCI bits/slot	8
	Number of Pilot bits/slot	0
	Number of data bits/slot	312
	Number of data bits/frame	4680

The minimum UE class supporting this combination is MBMS minimum capability.

This is supported in Release 6.

## 7.2.13 64.6 kbps RB for MTCH with 80 ms TTI

### 7.2.13.1 Transport channel parameters

#### 7.2.13.1.1 Transport channel parameters for 64.6 kbps PS RAB

Higher layer	RAB/signalling RB		RAB
	User of Radio Bearer		MBMS
RLC	Logical channel type		MTCH
	RLC mode		UM
	Payload sizes, bit		968, 1272, 2280, 2584, 3544, 3864, 4824
	Max data rate, bps		64 600
	UMD PDU header, bit		8
MAC	MAC header, bit		8
	MAC multiplexing		N/A
Layer 1	TrCH type		FACH
	TB sizes, bit		984, 1288, 2280, 2600, 3560, 3880, 4840
	TFS [1]	TF0, bits	0x984
		TF1, bits	1x984
		TF2, bits	1x1288
		TF3, bits	1x2280
		TF4, bits	1x2600
		TF5, bits	1x3560
		TF6, bits	1x3880
		TF7, bits	1x4840
	TF8, bits	2x2600	
	TTI, ms		80
	Coding type		TC
	CRC, bit		16
Max number of bits/TTI before rate matching		15 720	
RM attribute		n/a	

NOTE 1 (informative): The corresponding RTP payload sizes that fit most ideally into the transport formats are 936, 2232, 3528, 4792, and 5136 bits:

TF	RTP packet size and header status
0x984	No data
1x984	936 (compressed header)
1x1288	936 (uncompressed header)
1x2280	2232 (compressed header)
1x2600	2232 (uncompressed header)
1x3560	3512 (compressed header)
1x3880	3528 (uncompressed header)
1x4840	4792 (compressed header)
2x2600	5136 (compressed header)
	4792 (uncompressed header, with overflow to next TTI)
	5136 (uncompressed header, with overflow to next TTI)

As in subclause 7.2.11.1, the overflow in the case of a 4792-bit RTP packet with uncompressed header could be avoided by reducing the packet, TB, and PDU sizes slightly in this case.

## 7.2.13.1.2 TFCS

TFCS size	9
TFCS	64.6 kbps RAB =TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8

## 7.2.13.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	32
	Number of TFCI bits/slot	8
	Number of Pilot bits/slot	0
	Number of data bits/slot	152
	Number of data bits/frame	2280

The minimum UE class supporting this combination is MBMS minimum capability.

This is supported in Release 6.

## 7.2.14 64.8kbps RB for MTCH with 80 ms TTI (alternative config)

The minimum UE class supporting this combination is MBMS minimum capability.

This is supported in Release 6.

See subclause 6.10.2.4.3.5 of [1].

7.2.14.1 Void

7.2.14.2 Void

## 7.2.15 129.6 kbps RB for MTCH with 80 ms TTI (alternative config)

The minimum UE class supporting this combination is MBMS minimum capability.

This is supported in Release 6.

See subclause 6.10.2.4.3.6 of [1].

7.2.15.1 Void

7.2.15.2 Void

## 7.2.16 259.2 kbps RB for MTCH with 40 ms TTI (alternative config)

The minimum UE class supporting this combination is MBMS minimum capability.

This is supported in Release 6.

See subclause 6.10.2.4.3.7 of [1].

7.2.16.1 Void

7.2.16.2 Void

## 7.2.17 7.6 kbps signalling RB for MCCH

This is supported in Release 6 by UEs with capability for MBMS.

See subclause 6.10.2.4.3.8 of [1].

7.2.17.1 Void

7.2.17.2 Void

## 7.2.18 6.4 kbps SRB for MCCH

7.2.18.1 Transport channel parameters

7.2.18.1.1 Transport channel parameters for 6.4 kbps SRB for MCCH

Higher layer	RAB/signalling RB	SRB	
	User of Radio Bearer	MBMS	
RLC	Logical channel type	MCCH	
	RLC mode	UM	
	Payload sizes, bit	64	
	Max data rate, bps	6 400	
	UM PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	No logical channel multiplexing	
Layer 1	TrCH type	FACH	
	TB sizes, bit	72	
	TFS	TF0, bits	0 x72
		TF1, bits	1x72
	TTI, ms	10	
	Coding type	CC 1/3	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	288	
	RM attribute	n/a	

7.2.18.1.2 TFCS

TFCS size	2
TFCS	6.4 kbps SRB = TF0, TF1

7.2.18.2 Physical channel parameters

SCCPCH	DTX position	Flexible
	Spreading factor	256
	Number of TFCI bits/slot	2
	Number of Pilot bits/slot	0
	Number of data bits/slot	18
	Number of data bits/frame	270

## 7.3 Combinations on PRACH

### 7.3.1 Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH

See subclause 6.10.2.4.4.1 of [1]. Using Release '99 configuration of SRB#0.

The minimum UE class supporting this combination is UL: 12 kbps.

This is supported in Release '99.



### 7.3.2 Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH

See subclause 6.10.2.4.4.2 of [1]. Using Release '99 configuration of SRB#0.

The minimum UE class supporting this combination is UL: 12 kbps plus support for 5 AM entities and in addition for the alternative configuration 'Maximum number of DPDCH bits transmitted per 10 ms' = 1200.

This is supported in Release '99

### 7.3.3 Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH

See subclause 6.10.2.4.4.1 of [1]. Using Release 6 configuration of SRB#0.

The minimum UE class supporting this combination is UL: 12 kbps.

This is supported in Release 6.

### 7.3.4 Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH

See subclause 6.10.2.4.4.2 of [1]. Using Release 6 configuration of SRB#0.

The minimum UE class supporting this combination is UL: 12 kbps plus support for 5 AM entities and in addition for the alternative configuration 'Maximum number of DPDCH bits transmitted per 10 ms' = 1200.

This is supported in Release 6.

## 7.4 Radio Bearer and Radio Bearer Combinations on DPCH and HS-PDSCH

In the following tables for the references to [1], the details of the configuration are defined there.

### 7.4.1 RB for Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

#### 7.4.1.1 Uplink

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer on E-DPCH)</i>	<b>Signalling Radio Bearer on DPCH</b>	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.10.2.4.1.26.1 of [1]			
TFCS				
Physical Channel				

## 7.4.1.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

## 7.4.1b Void

## 7.4.2 RB for Interactive or background / UL:384 DL:[Bit rate depending on the UE category &amp; RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 384 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

## 7.4.2.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.10.2.4.1.34.1 of [1]			
TFCS				
Physical Channel				

## 7.4.2.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

**7.4.3 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 384 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

This is supported in Release 5.

**7.4.3.1 Uplink**

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer on E-DPCH )</i>	<b>Signalling Radio Bearer on DPCH</b>	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.5.3.1of [1]			
TFCS				
Physical Channel				

**7.4.3.2 Downlink**

	<b>Radio Bearer on DPCH</b>	<b>Radio Bearer on HS-PDSCH</b>	<b>Signalling Radio Bearer on DPCH</b>	<b>Signalling Radio Bearer on HS-PDSCH</b>
Transport Channel	6.10.2.4.5.3.2 of [1]			
TFCS				
Physical Channel				

**7.4.3a RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

## 7.4.3a.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH )</i>	Signalling Radio Bearer on DPCH	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.5.3a.1 of [1]			
TFCS				
Physical Channel				

## 7.4.3a.2 Downlink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH )</i>	Signalling Radio Bearer on DPCH	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.5.3a.2 of [1]			
TFCS				
Physical Channel				

#### 7.4.4 RB for Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 384 kbps, DL on DPCH: 64 kbps, DL on HS-PDSCH: category 11. The minimum UE class to support the alternative UL configuration is DL: 768 kbps plus support for 'Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant' = 20480 and 'Maximum sum of number of bits of all turbo coded transport blocks being transmitted at an arbitrary time instant' = 20480.

This is supported in Release 5.

## 7.4.4.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH )</i>	Signalling Radio Bearer on DPCH	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.5.4.1 of [1]			
TFCS				
Physical Channel				

7.4.4.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.5.4.2 of [1]			
TFCS				
Physical Channel				

7.4.4a RB for Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps, DL on DPCH: 64 kbps, DL on HS-PDSCH: category 11. The minimum UE class to support the alternative UL combination (40ms TTI) is UL: 384kbps.

This is supported in Release 5.

7.4.4a.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.10.2.4.5.4a.1 of [1]			
TFCS				
Physical Channel				

7.4.4a.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.5.4a.2 of [1]			
TFCS				
Physical Channel				

7.4.5 RB for Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

The minimum UE classes supporting this combination are UL: 384 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

7.4.5.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.5.5.1 of [1]			
TFCS				
Physical Channel				

7.4.5.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.5.5.2 of [1]			
TFCS				
Physical Channel				

7.4.5a RB for Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

7.4.5a.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer	( reserved for Signalling Radio Bearer
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			on DPCH	on E-DPCH )
Transport Channel	6.10.2.4.5.5a.1 of [1]			
TFCS				
Physical Channel				

7.4.5a.2 Downlink

See subclause 6.10.2.4.5.5a.2 of [1].

7.4.6 Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

7.4.6.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.1.28.1 of [1]			
TFCS				
Physical Channel				

7.4.6.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

**7.4.7 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 64kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

**7.4.7.1 Uplink**

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer on E-DPCH )</i>	<b>Signalling Radio Bearer on DPCH</b>	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.1.38i.1 of [1]			
TFCS				
Physical Channel				

**7.4.7.2 Downlink**

	<b>Radio Bearer on DPCH</b>	<b>Radio Bearer on HS-PDSCH</b>	<b>Signalling Radio Bearer on DPCH</b>	<b>Signalling Radio Bearer on HS-PDSCH</b>
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4a.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	<i>6.10.2.4.1.4a.2.2 of [1] See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

**7.4.8 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Interactive or background / UL:128 DL: [Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 128 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16 and 'Maximum number of TFC' = 64, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

**7.4.8.1 Uplink**

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer</i>	<b>Signalling Radio Bearer</b>	<i>( reserved for Signalling Radio Bearer</i>



		on E-DPCH )	on DPCH	on E-DPCH )
Transport Channel	6.10.2.4.1.4a.1.1.1 of [1] 6.10.2.4.1.28.1.1.1 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.8.1.1			
Physical Channel	See 7.4.8.1.2			

7.4.8.1.1 TFCS

TFCS size	60
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF5,TF4,TF1,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF5,TF4,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF5,TF4,TF1,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF5,TF4,TF1,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF5,TF4,TF1,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF5,TF4,TF1,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF5,TF4,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF5,TF4,TF1,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF5,TF4,TF1,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1), (TF5,TF4,TF1,TF4,TF1)

7.4.8.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.92

7.4.8.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4a.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

## 7.4.9 Void

### 7.4.10 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL:128 DL: [Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 384 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

#### 7.4.10.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	(reserved for Signalling Radio Bearer on E-DPCH)
Transport Channel	6.10.2.4.1.44.1 of [1]			
TFCS				
Physical Channel				

#### 7.4.10.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4.2.2 of [1] See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

## 7.4.11 Void

**7.4.12 RB for Conversational / unknown / UL:64 DL:64 kbps / CS RAB + RB for Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.**

The minimum UE classes supporting this combination are UL: 384kbps, DL on DPCH: 64 kbps, DL on HS-PDSCH: category 11.

This is supported in Release 5.

**7.4.12.1 Uplink**

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	(reserved for Signalling Radio Bearer on E-DPCH)
Transport Channel	6.10.2.4.1.53.1 of [1]			
TFCS				
Physical Channel				

**7.4.12.2 Downlink**

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.13.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.13.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.13.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.13.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

**7.4.13 RB for Conversational / unknown / UL:42.8 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + RB for interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

**7.4.13.1 Uplink**

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer	(reserved for Signalling Radio Bearer on E-DPCH)

			<b>on DPCH</b>	
Transport Channel	6.10.2.4.1.60.1 of [1]			
TFCS				
Physical Channel				

7.4.13.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		See 7.4.13.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel	6.10.2.4.1.2.2.2 of [1]	6.10.2.4.5.2.2.2 in [1]	6.10.2.4.1.4a.2.2 of [1] See NOTE.	

NOTE: already included in Physical Channel Definition of Radio Bearer on DPCH

7.4.13.2.1 Transport channel parameters

7.4.13.2.1.1 Transport channel parameters for HS-DSCH

7.4.13.2.1.1.1 MAC-d flow parameters for conversational / unknown DL:[max bit rate depending on UE category] / PS RAB

		Alt 1 MAC-hs (Rel-5 and later releases)	Alt 2 MAC-ehs (Rel-7 and later releases)
Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	920, 304, 96	Flexible up to 12000
	Max data rate, bps	depends on UE category NOTE1	
	UMD PDU header, bit	8	
MAC	MAC-d header, bit	0	
	MAC multiplexing	N/A	
	MAC-d PDU size, bit	928, 312, 104	Flexible
	MAC-hs Type	MAC-hs	MAC-ehs
	MAC-hs/ehs header fixed part, bit	21	24
Layer 1	TrCH type	HS-DSCH	
	TTI	2 ms	
	Coding type	TC	
	CRC, bit	24	
	Applicable modulation scheme	QPSK, 16QAM	QPSK, 16QAM, 64QAM
	Applicable with MIMO	No	Yes

NOTE1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-hs or MAC-ehs PDU (see [25.321]).

7.4.13.2.1.1.2 MAC-d flow parameters for interactive or background DL:[max bit rate depending on UE category] / PS RAB

See subclause 6.10.2.4.5.1.2.1.1.1 of [1].

7.4.14 RB for Streaming / unknown / UL:16 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps plus support for 'Maximum number of DPDCH bits transmitted per 10 ms' = 4800 and 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL on DPCH: 32 kbps plus support for HS-PDSCH and 'Maximum number of AM entities' = 5, DL on HS-PDSCH: category 11.

This is supported in Release 5.

7.4.14.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.1.58.1.1.1 of [1] 6.10.2.4.1.28.1.1.1 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.14.1.1			
Physical Channel	See 7.4.14.1.2			

7.4.14.1.1 Transport channel parameters

7.4.14.1.1.1 Void

7.4.14.1.1.2 Void

7.4.14.1.1.3 Void

7.4.14.1.1.4 TFCS

TFCS size	20
TFCS	(16 kbps RAB, 128 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF0, TF3, TF0), (TF1, TF3, TF0), (TF0, TF4, TF0), (TF1, TF4, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF0, TF3, TF1), (TF1, TF3, TF1), (TF0, TF4, TF1), (TF1, TF4, TF1)

## 7.4.14.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.8

## 7.4.14.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		See 7.4.14.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel	6.10.2.4.1.2.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

## 7.4.14.2.1 Transport channel parameters

## 7.4.14.2.1.1 Transport channel parameters for HS-DSCH

## 7.4.14.2.1.1.1 MAC-d flow parameters for Streaming / unknown / DL: [max bit rate depending on UE category &amp; RAB guaranteed/maximum bit rate] / PS RAB

		Alt 1 Fixed RLC + MAC-hs (Rel-5 and later releases)	Alt2 Fixed RLC + MAC-ehs (Rel-7 and later releases)	Alt 3 Flexible RLC + MAC-ehs (Rel-7 and later releases)
Higher layer	RAB/Signalling RB	RAB		
RLC	Logical channel type	DTCH		
	RLC mode	AM		
	Payload sizes, bit	320 (alt. 640)	320 (alt. 640)	Flexible up to 12000
	Max data rate, bps	depends on UE category NOTE1		
	AMD PDU header, bit	16		
MAC	MAC-d header, bit	0		
	MAC multiplexing	N/A		
	MAC-d PDU size, bit	336 (alt. 656)	336 (alt. 656)	Flexible
	MAC-hs Type	MAC-hs	MAC-ehs	MAC-ehs
	MAC-hs/ehs header fixed part, bit	21	24	24
Layer 1	TrCH type	HS-DSCH		
	TTI	2 ms		
	Coding type	TC		
	CRC, bit	24		
	Applicable modulation scheme	QPSK, 16QAM	QPSK, 16QAM, 64QAM	QPSK, 16QAM, 64QAM
	Applicable with MIMO	No	Yes	Yes

NOTE1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-hs or MAC-ehs PDU (see [25.321]).

7.4.14.2.1.1.2 MAC-d flow parameters for Interactive or background / DL: [max bit rate depending on UE category & RAB maximum bit rate] / PS RAB

See subclause 6.10.2.4.5.1.2.1.1.1 of [1].

7.4.14.2.1.2 Void

7.4.15 RB for Streaming / unknown / UL:64 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL: [max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

Note that the streaming RAB is not supported by all number of processes for UE category 1 and 11.

The minimum UE classes supporting this combination are UL: 384kbps, DL on DPCH: 64 kbps plus support for 'Maximum number of AM entities' = 5 and ' Total RLC AM buffer size' = 50, DL on HS-PDSCH: category 11.

This is supported in Release 5.

7.4.15.1 Uplink

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer on E-DPCH )</i>	<b>Signalling Radio Bearer on DPCH</b>	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.1.28.1.1.1 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.15.1.1.4			
Physical Channel	See 7.4.15.1.2			

7.4.15.1.1 Transport channel parameters

7.4.15.1.1.1 Transport channel parameters for Streaming / unknown / UL:64 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	64000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	3x656
		TF4, bits	4x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
	Uplink: Max number of bits/radio frame before rate matching	2019	
	RM attribute	125-165	

7.4.15.1.1.2 Void

7.4.15.1.1.3 Void

7.4.15.1.1.4 TFCS

TFCS size	50
TFCS	(64 kbps RAB, 128 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF3, TF2, TF0), (TF4, TF2, TF0), (TF0, TF3, TF0), (TF1, TF3, TF0), (TF2, TF3, TF0), (TF3, TF3, TF0), (TF4, TF3, TF0), (TF0, TF4, TF0), (TF1, TF4, TF0), (TF2, TF4, TF0), (TF3, TF4, TF0), (TF4, TF4, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1), (TF3, TF2, TF1), (TF4, TF2, TF1), (TF0, TF3, TF1), (TF1, TF3, TF1), (TF2, TF3, TF1), (TF3, TF3, TF1), (TF4, TF3, TF1), (TF0, TF4, TF1), (TF1, TF4, TF1), (TF2, TF4, TF1), (TF3, TF4, TF1), (TF4, TF4, TF1)

7.4.15.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	4
	Max number of DPDCH data bits/radio frame	9600
	Puncturing Limit	1



## 7.4.15.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		See 7.4.14.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel	6.10.2.4.1.2.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

7.4.16 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Streaming / unknown / UL:16 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL: [max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16 and 'Maximum number of TFC' = 128, DL on DPCH: 64 kbps plus support for 'Maximum number of AM entities' = 5 and 'Total RLC AM buffer size' = 50, DL on HS-PDSCH: category 11.

This is supported in Release 5.

## 7.4.16.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	(reserved for Signalling Radio Bearer on E-DPCH)
Transport Channel	6.10.2.4.1.4a.1.1.1 of [1]  6.10.2.4.1.58.1.1.1 of [1]  6.10.2.4.1.28.1.1.1 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.16.1.1.5			
Physical Channel	See 7.4.16.1.2			

- 7.4.16.1.1 Transport channel parameters
- 7.4.16.1.1.1 Void
- 7.4.16.1.1.2 Void
- 7.4.16.1.1.3 Void
- 7.4.16.1.1.4 Void
- 7.4.16.1.1.5 TFCS

TFCS size	120
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 16 kbps RAB, 128 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0, TF0, TF0), (TF1,TF0,TF0, TF0, TF0, TF0), (TF2,TF1,TF0, TF0, TF0, TF0), (TF3,TF2,TF0, TF0, TF0, TF0), (TF4,TF3,TF0, TF0, TF0, TF0), (TF5,TF4,TF1, TF0, TF0, TF0), (TF0,TF0,TF0,TF1, TF0, TF0), (TF1,TF0,TF0, TF1, TF0, TF0), (TF2,TF1,TF0, TF1, TF0, TF0), (TF3,TF2,TF0, TF1, TF0, TF0), (TF4,TF3,TF0, TF1, TF0, TF0), (TF5,TF4,TF1, TF1, TF0, TF0), (TF0,TF0,TF0,TF0, TF1, TF0), (TF1,TF0,TF0, TF0, TF1, TF0), (TF2,TF1,TF0, TF0, TF1, TF0), (TF3,TF2,TF0, TF0, TF1, TF0), (TF4,TF3,TF0, TF0, TF1, TF0), (TF5,TF4,TF1, TF0, TF1, TF0), (TF0,TF0,TF0,TF1, TF1, TF0), (TF1,TF0,TF0, TF1, TF1, TF0), (TF2,TF1,TF0, TF1, TF1, TF0), (TF3,TF2,TF0, TF1, TF1, TF0), (TF4,TF3,TF0, TF1, TF1, TF0), (TF5,TF4,TF1, TF1, TF1, TF0), (TF0,TF0,TF0,TF0, TF2, TF0), (TF1,TF0,TF0, TF0, TF2, TF0), (TF2,TF1,TF0, TF0, TF2, TF0), (TF3,TF2,TF0, TF0, TF2, TF0), (TF4,TF3,TF0, TF0, TF2, TF0), (TF5,TF4,TF1, TF0, TF2, TF0), (TF0,TF0,TF0,TF1, TF2, TF0), (TF1,TF0,TF0, TF1, TF2, TF0), (TF2,TF1,TF0, TF1, TF2, TF0), (TF3,TF2,TF0, TF1, TF2, TF0), (TF4,TF3,TF0, TF1, TF2, TF0), (TF5,TF4,TF1, TF1, TF2, TF0), (TF0,TF0,TF0,TF0, TF3, TF0), (TF1,TF0,TF0, TF0, TF3, TF0), (TF2,TF1,TF0, TF0, TF3, TF0), (TF3,TF2,TF0, TF0, TF3, TF0), (TF4,TF3,TF0, TF0, TF3, TF0), (TF5,TF4,TF1, TF0, TF3, TF0), (TF0,TF0,TF0,TF1, TF3, TF0), (TF1,TF0,TF0, TF1, TF3, TF0), (TF2,TF1,TF0, TF1, TF3, TF0), (TF3,TF2,TF0, TF1, TF3, TF0), (TF4,TF3,TF0, TF1, TF3, TF0), (TF5,TF4,TF1, TF1, TF3, TF0), (TF0,TF0,TF0,TF0, TF4, TF0), (TF1,TF0,TF0, TF0, TF4, TF0), (TF2,TF1,TF0, TF0, TF4, TF0), (TF3,TF2,TF0, TF0, TF4, TF0), (TF4,TF3,TF0, TF0, TF4, TF0), (TF5,TF4,TF1, TF0, TF4, TF0), (TF0,TF0,TF0,TF1, TF4, TF0), (TF1,TF0,TF0, TF1, TF4, TF0), (TF2,TF1,TF0, TF1, TF4, TF0), (TF3,TF2,TF0, TF1, TF4, TF0), (TF4,TF3,TF0, TF1, TF4, TF0), (TF5,TF4,TF1, TF1, TF4, TF0), (TF0,TF0,TF0,TF0, TF0, TF1), (TF1,TF0,TF0, TF0, TF0, TF1), (TF2,TF1,TF0, TF0, TF0, TF1), (TF3,TF2,TF0, TF0, TF0, TF1), (TF4,TF3,TF0, TF0, TF0, TF1), (TF5,TF4,TF1, TF0, TF0, TF1), (TF0,TF0,TF0,TF1, TF0, TF1), (TF1,TF0,TF0, TF1, TF0, TF1), (TF2,TF1,TF0, TF1, TF0, TF1), (TF3,TF2,TF0, TF1, TF0, TF1), (TF4,TF3,TF0, TF1, TF0, TF1), (TF5,TF4,TF1, TF1, TF0, TF1), (TF0,TF0,TF0,TF0, TF1, TF1), (TF1,TF0,TF0, TF0, TF1, TF1), (TF2,TF1,TF0, TF0, TF1, TF1), (TF3,TF2,TF0, TF0, TF1, TF1), (TF4,TF3,TF0, TF0, TF1, TF1), (TF5,TF4,TF1, TF0, TF1, TF1), (TF0,TF0,TF0,TF1, TF1, TF1), (TF1,TF0,TF0, TF1, TF1, TF1), (TF2,TF1,TF0, TF1, TF1, TF1), (TF3,TF2,TF0, TF1, TF1, TF1), (TF4,TF3,TF0, TF1, TF1, TF1), (TF5,TF4,TF1, TF1, TF1, TF1), (TF0,TF0,TF0,TF0, TF2, TF1), (TF1,TF0,TF0, TF0, TF2, TF1), (TF2,TF1,TF0, TF0, TF2, TF1), (TF3,TF2,TF0, TF0, TF2, TF1), (TF4,TF3,TF0, TF0, TF2, TF1), (TF5,TF4,TF1, TF0, TF2, TF1), (TF0,TF0,TF0,TF1, TF2, TF1), (TF1,TF0,TF0, TF1, TF2, TF1), (TF2,TF1,TF0, TF1, TF2, TF1), (TF3,TF2,TF0, TF1, TF2, TF1), (TF4,TF3,TF0, TF1, TF2, TF1), (TF5,TF4,TF1, TF1, TF2, TF1), (TF0,TF0,TF0,TF0, TF3, TF1), (TF1,TF0,TF0, TF0, TF3, TF1), (TF2,TF1,TF0, TF0, TF3, TF1), (TF3,TF2,TF0, TF0, TF3, TF1), (TF4,TF3,TF0, TF0, TF3, TF1), (TF5,TF4,TF1, TF0, TF3, TF1), (TF0,TF0,TF0,TF1, TF3, TF1), (TF1,TF0,TF0, TF1, TF3, TF1), (TF2,TF1,TF0, TF1, TF3, TF1), (TF3,TF2,TF0, TF1, TF3, TF1), (TF4,TF3,TF0, TF1, TF3, TF1), (TF5,TF4,TF1, TF1, TF3, TF1), (TF0,TF0,TF0,TF0, TF4, TF1), (TF1,TF0,TF0, TF0, TF4, TF1), (TF2,TF1,TF0, TF0, TF4, TF1), (TF3,TF2,TF0, TF0, TF4, TF1), (TF4,TF3,TF0, TF0, TF4, TF1), (TF5,TF4,TF1, TF0, TF4, TF1), (TF0,TF0,TF0,TF1, TF4, TF1), (TF1,TF0,TF0, TF1, TF4, TF1), (TF2,TF1,TF0, TF1, TF4, TF1), (TF3,TF2,TF0, TF1, TF4, TF1), (TF4,TF3,TF0, TF1, TF4, TF1), (TF5,TF4,TF1, TF1, TF4, TF1)

## 7.4.16.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.72

## 7.4.16.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-DPCH
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	See 7.4.14.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4a.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

**7.4.17 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Streaming / unknown / UL:128 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL: [max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

The minimum UE classes supporting this combination are UL: 384kbps plus support for 'Maximum number of TFC' = 256, DL on DPCH: 64 kbps plus support for 'Maximum number of AM entities' = 5 and ' Total RLC AM buffer size' = 50, DL on HS-PDSCH: category 11.

This is supported in Release 5.

## 7.4.17.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	(reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.1.4a.1.1.1 of [1]  See 7.1.96.1.1.2  6.10.2.4.1.28.1.1.1 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.17.1.1.5			
Physical Channel	See 7.4.17.1.2			

- 7.4.17.1.1 Transport channel parameters
- 7.4.17.1.1.1 Void
- 7.4.17.1.1.2 Void
- 7.4.17.1.1.3 Void
- 7.4.17.1.1.4 Void
- 7.4.17.1.1.5 TFCS

TFCS size	240
TFCS	<p>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, 128 kbps RAB, DCCH)=                      (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0,TF0),                      (TF3,TF2,TF0,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0,TF0), (TF5,TF4,TF1,TF0,TF0,TF0),                      (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF0,TF1,TF0,TF0),                      (TF3,TF2,TF0,TF1,TF0,TF0), (TF4,TF3,TF0,TF1,TF0,TF0), (TF5,TF4,TF1,TF1,TF0,TF0),                      (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF0,TF2,TF0,TF0),                      (TF3,TF2,TF0,TF2,TF0,TF0), (TF4,TF3,TF0,TF2,TF0,TF0), (TF5,TF4,TF1,TF2,TF0,TF0),                      (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF0,TF3,TF0,TF0),                      (TF3,TF2,TF0,TF3,TF0,TF0), (TF4,TF3,TF0,TF3,TF0,TF0), (TF5,TF4,TF1,TF3,TF0,TF0),                      (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF0,TF1,TF0),                      (TF3,TF2,TF0,TF0,TF1,TF0), (TF4,TF3,TF0,TF0,TF1,TF0), (TF5,TF4,TF1,TF0,TF1,TF0),                      (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF0,TF1,TF1,TF0),                      (TF3,TF2,TF0,TF1,TF1,TF0), (TF4,TF3,TF0,TF1,TF1,TF0), (TF5,TF4,TF1,TF1,TF1,TF0),                      (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF0,TF2,TF1,TF0),                      (TF3,TF2,TF0,TF2,TF1,TF0), (TF4,TF3,TF0,TF2,TF1,TF0), (TF5,TF4,TF1,TF2,TF1,TF0),                      (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF0,TF3,TF1,TF0),                      (TF3,TF2,TF0,TF3,TF1,TF0), (TF4,TF3,TF0,TF3,TF1,TF0), (TF5,TF4,TF1,TF3,TF1,TF0),                      (TF0,TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF0,TF2,TF0),                      (TF3,TF2,TF0,TF0,TF2,TF0), (TF4,TF3,TF0,TF0,TF2,TF0), (TF5,TF4,TF1,TF0,TF2,TF0),                      (TF0,TF0,TF0,TF1,TF2,TF0), (TF1,TF0,TF0,TF1,TF2,TF0), (TF2,TF1,TF0,TF1,TF2,TF0),                      (TF3,TF2,TF0,TF1,TF2,TF0), (TF4,TF3,TF0,TF1,TF2,TF0), (TF5,TF4,TF1,TF1,TF2,TF0),                      (TF0,TF0,TF0,TF2,TF2,TF0), (TF1,TF0,TF0,TF2,TF2,TF0), (TF2,TF1,TF0,TF2,TF2,TF0),                      (TF3,TF2,TF0,TF2,TF2,TF0), (TF4,TF3,TF0,TF2,TF2,TF0), (TF5,TF4,TF1,TF2,TF2,TF0),                      (TF0,TF0,TF0,TF3,TF2,TF0), (TF1,TF0,TF0,TF3,TF2,TF0), (TF2,TF1,TF0,TF3,TF2,TF0),                      (TF3,TF2,TF0,TF3,TF2,TF0), (TF4,TF3,TF0,TF3,TF2,TF0), (TF5,TF4,TF1,TF3,TF2,TF0),                      (TF0,TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF0,TF3,TF0),                      (TF3,TF2,TF0,TF0,TF3,TF0), (TF4,TF3,TF0,TF0,TF3,TF0), (TF5,TF4,TF1,TF0,TF3,TF0),                      (TF0,TF0,TF0,TF1,TF3,TF0), (TF1,TF0,TF0,TF1,TF3,TF0), (TF2,TF1,TF0,TF1,TF3,TF0),                      (TF3,TF2,TF0,TF1,TF3,TF0), (TF4,TF3,TF0,TF1,TF3,TF0), (TF5,TF4,TF1,TF1,TF3,TF0),                      (TF0,TF0,TF0,TF2,TF3,TF0), (TF1,TF0,TF0,TF2,TF3,TF0), (TF2,TF1,TF0,TF2,TF3,TF0),                      (TF3,TF2,TF0,TF2,TF3,TF0), (TF4,TF3,TF0,TF2,TF3,TF0), (TF5,TF4,TF1,TF2,TF3,TF0),                      (TF0,TF0,TF0,TF3,TF3,TF0), (TF1,TF0,TF0,TF3,TF3,TF0), (TF2,TF1,TF0,TF3,TF3,TF0),                      (TF3,TF2,TF0,TF3,TF3,TF0), (TF4,TF3,TF0,TF3,TF3,TF0), (TF5,TF4,TF1,TF3,TF3,TF0),                      (TF0,TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF0,TF4,TF0),                      (TF3,TF2,TF0,TF0,TF4,TF0), (TF4,TF3,TF0,TF0,TF4,TF0), (TF5,TF4,TF1,TF0,TF4,TF0),                      (TF0,TF0,TF0,TF1,TF4,TF0), (TF1,TF0,TF0,TF1,TF4,TF0), (TF2,TF1,TF0,TF1,TF4,TF0),                      (TF3,TF2,TF0,TF1,TF4,TF0), (TF4,TF3,TF0,TF1,TF4,TF0), (TF5,TF4,TF1,TF1,TF4,TF0),                      (TF0,TF0,TF0,TF2,TF4,TF0), (TF1,TF0,TF0,TF2,TF4,TF0), (TF2,TF1,TF0,TF2,TF4,TF0),                      (TF3,TF2,TF0,TF2,TF4,TF0), (TF4,TF3,TF0,TF2,TF4,TF0), (TF5,TF4,TF1,TF2,TF4,TF0),                      (TF0,TF0,TF0,TF3,TF4,TF0), (TF1,TF0,TF0,TF3,TF4,TF0), (TF2,TF1,TF0,TF3,TF4,TF0),                      (TF3,TF2,TF0,TF3,TF4,TF0), (TF4,TF3,TF0,TF3,TF4,TF0), (TF5,TF4,TF1,TF3,TF4,TF0),                      (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF0,TF1),                      (TF3,TF2,TF0,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF0,TF1), (TF5,TF4,TF1,TF0,TF0,TF1),                      (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF0,TF1,TF0,TF1),                      (TF3,TF2,TF0,TF1,TF0,TF1), (TF4,TF3,TF0,TF1,TF0,TF1), (TF5,TF4,TF1,TF1,TF0,TF1),                      (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF0,TF2,TF0,TF1),                      (TF3,TF2,TF0,TF2,TF0,TF1), (TF4,TF3,TF0,TF2,TF0,TF1), (TF5,TF4,TF1,TF2,TF0,TF1),</p>

<p>(TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0, TF3,TF0,TF1), (TF2,TF1,TF0,TF3,TF0,TF1), (TF3,TF2,TF0,TF3,TF0,TF1), (TF4,TF3,TF0,TF3,TF0,TF1), (TF5,TF4,TF1,TF3,TF0,TF1),</p> <p>(TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF0,TF1,TF1), (TF3,TF2,TF0,TF0,TF1,TF1), (TF4,TF3,TF0,TF0,TF1,TF1), (TF5,TF4,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF0,TF1,TF1,TF1), (TF3,TF2,TF0,TF1,TF1,TF1), (TF4,TF3,TF0,TF1,TF1,TF1), (TF5,TF4,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF0,TF2,TF1,TF1), (TF3,TF2,TF0,TF2,TF1,TF1), (TF4,TF3,TF0,TF2,TF1,TF1), (TF5,TF4,TF1,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF0,TF3,TF1,TF1), (TF3,TF2,TF0,TF3,TF1,TF1), (TF4,TF3,TF0,TF3,TF1,TF1), (TF5,TF4,TF1,TF3,TF1,TF1),</p> <p>(TF0,TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF0,TF2,TF1), (TF3,TF2,TF0,TF0,TF2,TF1), (TF4,TF3,TF0,TF0,TF2,TF1), (TF5,TF4,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF1,TF2,TF1), (TF1,TF0,TF0,TF1,TF2,TF1), (TF2,TF1,TF0,TF1,TF2,TF1), (TF3,TF2,TF0,TF1,TF2,TF1), (TF4,TF3,TF0,TF1,TF2,TF1), (TF5,TF4,TF1,TF1,TF2,TF1), (TF0,TF0,TF0,TF2,TF2,TF1), (TF1,TF0,TF0,TF2,TF2,TF1), (TF2,TF1,TF0,TF2,TF2,TF1), (TF3,TF2,TF0,TF2,TF2,TF1), (TF4,TF3,TF0,TF2,TF2,TF1), (TF5,TF4,TF1,TF2,TF2,TF1), (TF0,TF0,TF0,TF3,TF2,TF1), (TF1,TF0,TF0,TF3,TF2,TF1), (TF2,TF1,TF0,TF3,TF2,TF1), (TF3,TF2,TF0,TF3,TF2,TF1), (TF4,TF3,TF0,TF3,TF2,TF1), (TF5,TF4,TF1,TF3,TF2,TF1),</p> <p>(TF0,TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF0,TF3,TF1), (TF3,TF2,TF0,TF0,TF3,TF1), (TF4,TF3,TF0,TF0,TF3,TF1), (TF5,TF4,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF1,TF3,TF1), (TF1,TF0,TF0,TF1,TF3,TF1), (TF2,TF1,TF0,TF1,TF3,TF1), (TF3,TF2,TF0,TF1,TF3,TF1), (TF4,TF3,TF0,TF1,TF3,TF1), (TF5,TF4,TF1,TF1,TF3,TF1), (TF0,TF0,TF0,TF2,TF3,TF1), (TF1,TF0,TF0,TF2,TF3,TF1), (TF2,TF1,TF0,TF2,TF3,TF1), (TF3,TF2,TF0,TF2,TF3,TF1), (TF4,TF3,TF0,TF2,TF3,TF1), (TF5,TF4,TF1,TF2,TF3,TF1), (TF0,TF0,TF0,TF3,TF3,TF1), (TF1,TF0,TF0,TF3,TF3,TF1), (TF2,TF1,TF0,TF3,TF3,TF1), (TF3,TF2,TF0,TF3,TF3,TF1), (TF4,TF3,TF0,TF3,TF3,TF1), (TF5,TF4,TF1,TF3,TF3,TF1),</p> <p>(TF0,TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF0,TF4,TF1), (TF3,TF2,TF0,TF0,TF4,TF1), (TF4,TF3,TF0,TF0,TF4,TF1), (TF5,TF4,TF1,TF0,TF4,TF1), (TF0,TF0,TF0,TF1,TF4,TF1), (TF1,TF0,TF0,TF1,TF4,TF1), (TF2,TF1,TF0,TF1,TF4,TF1), (TF3,TF2,TF0,TF1,TF4,TF1), (TF4,TF3,TF0,TF1,TF4,TF1), (TF5,TF4,TF1,TF1,TF4,TF1), (TF0,TF0,TF0,TF2,TF4,TF1), (TF1,TF0,TF0,TF2,TF4,TF1), (TF2,TF1,TF0,TF2,TF4,TF1), (TF3,TF2,TF0,TF2,TF4,TF1), (TF4,TF3,TF0,TF2,TF4,TF1), (TF5,TF4,TF1,TF2,TF4,TF1), (TF0,TF0,TF0,TF3,TF4,TF1), (TF1,TF0,TF0,TF3,TF4,TF1), (TF2,TF1,TF0,TF3,TF4,TF1), (TF3,TF2,TF0,TF3,TF4,TF1), (TF4,TF3,TF0,TF3,TF4,TF1), (TF5,TF4,TF1,TF3,TF4,TF1)</p>
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7.4.17.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	4
	Max number of DPDCH data bits/radio frame	9600
	Puncturing Limit	0.88

7.4.17.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	See 7.4.14.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4a.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.2.2 of [1] -> CS voice fehlt !	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

### 7.4.18 RB for Streaming / unknown / UL:64 DL: [max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL on DPCH: 32 kbps plus support for HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

#### 7.4.18.1 Uplink

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer on E-DPCH )</i>	<b>Signalling Radio Bearer on DPCH</b>	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	See 7.4.14.1.1.1		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.18.1.1			
Physical Channel	See 7.4.18.1.2			

#### 7.4.18.1.1 Transport channel parameters

7.4.18.1.1.1 Void

7.4.18.1.1.2 Void

7.4.18.1.1.3 Void

7.4.18.1.1.4 TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

#### 7.4.18.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

#### 7.4.18.2 Downlink

	<b>Radio Bearer on DPCH</b>	<b>Radio Bearer on HS-PDSCH</b>	<b>Signalling Radio Bearer on DPCH</b>	<b>Signalling Radio Bearer on HS-PDSCH</b>
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	See 7.4.14.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	

TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel	6.10.2.4.1.2.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

### 7.4.19 RB for Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 64 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

#### 7.4.19.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.1.9.1.1.1 of [1] 6.10.2.4.1.26.1.1.1 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.19.1.1.1			
Physical Channel	See 7.4.19.1.2			

#### 7.4.19.1.1 Transport channel parameters

##### 7.4.19.1.1.1 TFCS

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0),(TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),(TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),(TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0),(TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),(TF2,TF1,TF0,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),(TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1),(TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),(TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),(TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1),(TF2,TF1,TF0,TF4,TF1)

#### 7.4.19.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.84

## 7.4.19.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.9.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.9.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.9.1.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

7.4.20 RB for Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of AM entities' = 5, DL on DPCH: 64kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11

This is supported in Release 5.

## 7.4.20.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.1.9.1.1.1 of [1] 6.10.2.4.1.38d.1.1.2 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.20.1.1.1			
Physical Channel	See 7.4.20.1.2			



7.4.20.1.1 Transport channel parameters

7.4.20.1.1.1 TFCS

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB + 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0),(TF2,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),(TF2,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),(TF2,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0),(TF2,TF1,TF0,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),(TF2,TF1,TF0,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),(TF2,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1),(TF2,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),(TF2,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),(TF2,TF1,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1),(TF2,TF1,TF0,TF4,TF1)

7.4.20.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.84

7.4.20.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.9.2.1.1 of [1]	6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.9.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.9.1.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

7.4.21 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on the UE category & RAB max. bitrate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of AM entities' = 5, DL on DPCH: 64 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

7.4.21.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	(reserved for Signalling Radio Bearer on E-DPCH)
Transport Channel				

TFCS	6.10.2.4.1.38d.1 of [1].
Physical Channel	

7.4.21.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4.2.1.1 of [1]	6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

7.4.22 Conversational / unknown / UL:38.8 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

The minimum UE classes supporting this combination are UL: 64 kbps plus support of ‘Maximum number of TFC’=64, DL: 32 kbps, plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 6.

7.4.22.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	7.1.118.1.1.1 7.1.84.1.1.1		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.22.1.1			
Physical Channel	See 7.4.22.1.2			

## 7.4.22.1.1 TFCS

TFCS size	54
TFCS	(38.8 kbps Conversational RAB, 16+16 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF3, TF2, TF0), (TF4, TF2, TF0), (TF5, TF2, TF0), (TF6, TF2, TF0), (TF7, TF2, TF0), (TF8, TF2, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1), (TF3, TF2, TF1), (TF4, TF2, TF1), (TF5, TF2, TF1), (TF6, TF2, TF1), (TF7, TF2, TF1), (TF8, TF2, TF1)

## 7.4.22.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.96

## 7.4.22.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-DPCH
Transport Channel		See 7.4.22.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

## 7.4.22.2.1 Transport channel parameters

## 7.4.22.2.1.1 Transport channel parameters for HS-DSCH

## 7.4.22.2.1.1.1 MAC-d flow parameters for conversational / unknown DL:[max bit rate depending on UE category &amp; RAB maximum bit rate] / PS RAB

		Alt 1 MAC-hs (Rel-6 and later releases)	Alt 2 MAC-ehs (Rel-7 and later releases)
Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	104, 136, 152, 168, 184, 216, 288, 336(alt 328)	Flexible up to 12000
	Max data rate, bps	depends on UE category NOTE1	
	UMD PDU header, bit	8	
MAC	MAC-d header, bit	0	
	MAC multiplexing	N/A	
	MAC-d PDU size, bit	112, 144, 160, 176, 192, 224, 296, 344(alt 336)	Flexible
	MAC-hs Type	MAC-hs	MAC-ehs
	MAC-hs/ehs header fixed part, bit	21	24
Layer 1	TrCH type	HS-DSCH	
	TTI	2 ms	
	Coding type	TC	
	CRC, bit	24	
	Applicable modulation scheme	QPSK, 16QAM	QPSK, 16QAM, 64QAM
	Applicable with MIMO	No	Yes

NOTE1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-hs or MAC-ehs PDU (see [25.321]).

## 7.4.22.2.1.1.2 MAC-d flow parameters for interactive or background DL:[max bit rate depending on UE category &amp; RAB maximum bit rate] / PS RAB

See subclause 6.10.2.4.5.1.2.1.1.1 of [1].

## 7.4.22.2.1.1.3 MAC-d flow parameters for interactive or background DL:[max bit rate depending on UE category &amp; RAB maximum bit rate] / PS RAB

See subclause 6.10.2.4.5.1.2.1.1.1 of [1].

**7.4.23 Conversational / unknown / UL:16.8 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + interactive / background UL: 16 kbps DL:[max bit rate depending on UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.**

The minimum UE classes supporting this combination are UL: 64 kbps plus support of 'Maximum number of TFC'=128, DL: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 6.

NOTE: This RAB is used for the steady-state, where the contexts of the ROHC compressor and the ROHC decompressor are already synchronized so IR packets are not transmitted.

7.4.23.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	7.1.119.1.1.1 7.1.84.1.1.1		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.23.1.1			
Physical Channel	See 7.4.23.1.2			

7.4.23.1.1 TFCS

TFCS size	108
TFCS	(16.8 kbps Conversational RAB, 16+16 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF5, TF0, TF0), (TF6, TF0, TF0), (TF7, TF0, TF0), (TF8, TF0, TF0), (TF9, TF0, TF0), (TF10, TF0, TF0), (TF11, TF0, TF0), (TF12, TF0, TF0), (TF13, TF0, TF0), (TF14, TF0, TF0), (TF15, TF0, TF0), (TF16, TF0, TF0), (TF17, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF5, TF1, TF0), (TF6, TF1, TF0), (TF7, TF1, TF0), (TF8, TF1, TF0), (TF9, TF1, TF0), (TF10, TF1, TF0), (TF11, TF1, TF0), (TF12, TF1, TF0), (TF13, TF1, TF0), (TF14, TF1, TF0), (TF15, TF1, TF0), (TF16, TF1, TF0), (TF17, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF3, TF2, TF0), (TF4, TF2, TF0), (TF5, TF2, TF0), (TF6, TF2, TF0), (TF7, TF2, TF0), (TF8, TF2, TF0), (TF9, TF2, TF0), (TF10, TF2, TF0), (TF11, TF2, TF0), (TF12, TF2, TF0), (TF13, TF2, TF0), (TF14, TF2, TF0), (TF15, TF2, TF0), (TF16, TF2, TF0), (TF17, TF2, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF5, TF0, TF1), (TF6, TF0, TF1), (TF7, TF0, TF1), (TF8, TF0, TF1), (TF9, TF0, TF1), (TF10, TF0, TF1), (TF11, TF0, TF1), (TF12, TF0, TF1), (TF13, TF0, TF1), (TF14, TF0, TF1), (TF15, TF0, TF1), (TF16, TF0, TF1), (TF17, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF5, TF1, TF1), (TF6, TF1, TF1), (TF7, TF1, TF1), (TF8, TF1, TF1), (TF9, TF1, TF1), (TF10, TF1, TF1), (TF11, TF1, TF1), (TF12, TF1, TF1), (TF13, TF1, TF1), (TF14, TF1, TF1), (TF15, TF1, TF1), (TF16, TF1, TF1), (TF17, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1), (TF3, TF2, TF1), (TF4, TF2, TF1), (TF5, TF2, TF1), (TF6, TF2, TF1), (TF7, TF2, TF1), (TF8, TF2, TF1), (TF9, TF2, TF1), (TF10, TF2, TF1), (TF11, TF2, TF1), (TF12, TF2, TF1), (TF13, TF2, TF1), (TF14, TF2, TF1), (TF15, TF2, TF1), (TF16, TF2, TF1), (TF17, TF2, TF1)

## 7.4.23.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	0.88

## 7.4.23.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-DPCH
Transport Channel		See 7.4.22.2.1.1	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

7.4.24 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or Background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 384 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

## 7.4.24.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.10.2.4.5.8.1 of [1]			
TFCS				
Physical Channel				

## 7.4.24.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-DPCH

Transport Channel	6.10.2.4.5.8.2 of [1]
TFCS	
Physical Channel	

**7.4.25 RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or Background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of TFC' = 64, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

**7.4.25.1 Uplink**

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer on E-DPCH)</i>	<b>Signalling Radio Bearer on DPCH</b>	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	See subclause 7.1.109.1			
TFCS				
Physical Channel				

**7.4.25.2 Downlink**

	<b>Radio Bearer on DPCH</b>	<b>Radio Bearer on HS-PDSCH</b>	<b>Signalling Radio Bearer on DPCH</b>	<b>Signalling Radio Bearer on HS-PDSCH</b>
Transport Channel	6.10.2.4.1.62.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1] 6.10.2.4.1.62.2.1.3 of [1]	
TFCS	6.10.2.4.1.62.2.1.4 of [1]			
Physical Channel	6.10.2.4.1.62.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.62.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

## 7.4.26 RB for Interactive or background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:6.8 DL:6.8 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

### 7.4.26.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.1.26.1.1.1 of [1]		See 7.1.2a	
TFCS	See 7.4.26.1.1			
Physical Channel	See 7.4.26.1.2			

#### 7.4.26.1.1 TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

#### 7.4.26.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2 400
	Puncturing Limit	0.96

### 7.4.26.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1]	See 7.1.2a	
TFCS	See 7.1.2a.2.1.2			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	See 7.1.2a.2.2	

## 7.4.27 RB for Interactive or background / UL:384 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:6.8 DL:6.8 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 384 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.



## 7.4.27.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	(reserved for Signalling Radio Bearer on E-DPCH)
Transport Channel	6.10.2.4.1.34.1.1.1 of [1]		See 7.1.2a	
TFCS	See 7.4.27.1.1			
Physical Channel	See 7.4.27.1.2			

## 7.4.27.1.1 TFCS

TFCS size	18 (alt.12)
TFCS	(384 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0), (TF7, TF0), (TF8, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7, TF1), (TF8, TF1) (alt. (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1))

## 7.4.27.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	4
	Max number of DPDCH data bits/radio frame	9 600
	Number of DPDCH	1
	Puncturing Limit	0.64

## 7.4.27.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1]	See 7.1.2a	
TFCS	See 7.1.2a.2.1.2			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	See 7.1.2a.2.2	

7.4.28 RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or Background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + RB for Interactive or Background / UL:64 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 'Maximum number of AM entities' = 5 and 'Maximum number of TFC' = 64, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

## 7.4.28.1 Uplink

	<b>Radio Bearer on DPCH</b>	<i>(reserved for Radio Bearer on E-DPCH )</i>	<b>Signalling Radio Bearer on DPCH</b>	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.1.62.1.1.1 of [1] 6.10.2.4.1.38d.1.1.2 of [1]		6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.4.28.1.1 and 7.4.28.1.2			
Physical Channel	See 7.4.28.1.3			

7.4.28.1.1 TFCS

TFCS size	50
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB + 64 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0), (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0), (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1), (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1), (TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)

7.4.28.1.2 TFC subset list

TFC subset list size	3
TFC subset list	<p>0 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1),                  (TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0),                  (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1),                  (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1)},</p> <p>1 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1),                  (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0),                  (TF1,TF0,TF0,TF1,TF0), (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF2,TF0),                  (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1),                  (TF1,TF0,TF0,TF2,TF1), (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1), (TF1,TF0,TF0,TF3,TF1),                  (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0),                  (TF1,TF0,TF0,TF4,TF0), (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1)},</p> <p>2 = {(TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF0,TF0,TF0),                  (TF3,TF2,TF0,TF0,TF0), (TF4,TF3,TF0,TF0,TF0), (TF0,TF0,TF0,TF0,TF1),                  (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF0,TF0,TF1), (TF3,TF2,TF0,TF0,TF1),                  (TF4,TF3,TF0,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF1,TF0),                  (TF2,TF1,TF0,TF1,TF0), (TF3,TF2,TF0,TF1,TF0), (TF4,TF3,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF1,TF1), (TF2,TF1,TF0,TF1,TF1),                  (TF3,TF2,TF0,TF1,TF1), (TF4,TF3,TF0,TF1,TF1), (TF0,TF0,TF0,TF2,TF0),                  (TF1,TF0,TF0,TF2,TF0), (TF2,TF1,TF0,TF2,TF0), (TF3,TF2,TF0,TF2,TF0),                  (TF4,TF3,TF0,TF2,TF0), (TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF2,TF1),                  (TF2,TF1,TF0,TF2,TF1), (TF3,TF2,TF0,TF2,TF1), (TF4,TF3,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0), (TF1,TF0,TF0,TF3,TF0), (TF2,TF1,TF0,TF3,TF0),                  (TF3,TF2,TF0,TF3,TF0), (TF4,TF3,TF0,TF3,TF0), (TF0,TF0,TF0,TF3,TF1),                  (TF1,TF0,TF0,TF3,TF1), (TF2,TF1,TF0,TF3,TF1), (TF3,TF2,TF0,TF3,TF1),                  (TF4,TF3,TF0,TF3,TF1), (TF0,TF0,TF0,TF4,TF0), (TF1,TF0,TF0,TF4,TF0),                  (TF2,TF1,TF0,TF4,TF0), (TF3,TF2,TF0,TF4,TF0), (TF4,TF3,TF0,TF4,TF0),                  (TF0,TF0,TF0,TF4,TF1), (TF1,TF0,TF0,TF4,TF1), (TF2,TF1,TF0,TF4,TF1),                  (TF3,TF2,TF0,TF4,TF1)},</p>

	(TF3,TF2,TF0,TF4,TF1), (TF4,TF3,TF0,TF4,TF1)}
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7.4.28.1.3 Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.76

7.4.28.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.62.2.1.1 of [1]	6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1] 6.10.2.4.1.62.2.1.3 of [1]	
TFCS	6.10.2.4.1.62.2.1.4 of [1]			
Physical Channel	6.10.2.4.1.62.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.62.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

7.4.29 RB for Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + RB for Interactive or background / UL:128 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128 kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 16, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

7.4.29.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH)	Signalling Radio Bearer on DPCH	(reserved for Signalling Radio Bearer on E-DPCH)
Transport Channel	See 7.1.88.1			
TFCS				
Physical Channel				

## 7.4.29.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

7.4.30 RB for Interactive or background / UL:16 DL:[Bit rate depending on the UE category & RAB maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

This is supported in Release 5.

## 7.4.30.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.10.2.4.1.23b.1 of [1]			
TFCS				
Physical Channel				

## 7.4.30.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

### 7.4.31 RB for Streaming MBMS PTP / unkown / UL:16 DL:[max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11, and MBMS minimum capability.

This is supported in Release 6.

#### 7.4.31.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.10.2.4.5.9.1 of [1]			
TFCS				
Physical Channel				

#### 7.4.31.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.5.9.2 of [1]			
TFCS				
Physical Channel				

### 7.4.32 RB for Streaming MBMS PTP / unkown / UL:16 DL:[max bit rate depending on UE category & RAB guaranteed/maximum bit rate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on UE category & RAB maximum bitrate] / PS RAB + RB for Interactive or background / UL:64 DL:[max bit rate depending on UE category & RAB maximum bitrate] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11, and MBMS minimum capability.

This is supported in Release 6.

## 7.4.32.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH )</i>	Signalling Radio Bearer on DPCH	<i>( reserved for Signalling Radio Bearer on E-DPCH )</i>
Transport Channel	6.10.2.4.5.10.1 of [1]			
TFCS				
Physical Channel				

## 7.4.32.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.5.10.2 of [1]			
TFCS				
Physical Channel				

## 7.5 Radio Bearer and Radio Bearer Combinations on E-DPDCH and HS-PDSCH

In the following tables for the references to [1], the details of the configuration are defined there.

## 7.5.1 RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

## 7.5.1.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.6.1.1 of [1]			
TFCS				
Physical Channel				

## 7.5.1.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.6.1.2 of [1]			
TFCS				
Physical Channel				

7.5.2 RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL:3.4 kbps SRBs for DCCH on E-DCH and DL on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

## 7.5.2.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.6.2.1 of [1]			
TFCS				
Physical Channel				

## 7.5.2.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.6.2.2 of [1]			
TFCS				
Physical Channel				



### 7.5.3 RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.3.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.6.3.1 of [1]			
TFCS				
Physical Channel				

#### 7.5.3.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.6.3.2 of [1]			
TFCS				
Physical Channel				

### 7.5.4 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.4.1 Uplink

	Radio Bearer	Radio Bearer	Signalling Radio Bearer	Signalling Radio Bearer

	on DPCH	on E-DPCH	on DPCH	on E-DPCH
Transport Channel	6.10.2.4.6.4.1 of [1]			
TFCS				
Physical Channel				

7.5.4.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.6.4.2 of [1]			
TFCS				
Physical Channel				

7.5.5 Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:[max bit rate depending on UE category and TTI] DL:3.4 kbps SRBs for DCCH on E-DCH and DL DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

7.5.5.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.6.5.1 of [1]			
TFCS				
Physical Channel				

## 7.5.5.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.6.5.2 of [1]			
TFCS				
Physical Channel				

7.5.6 Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

## 7.5.6.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.5.1.1.1 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.2.1.1.2 of [1]			
Physical Channel		6.10.2.4.6.5.1.2.1 of [1]	6.10.2.4.1.2.1.2 of [1]	

## 7.5.6.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.6.5.2 of [1]			
TFCS				
Physical Channel				

**7.5.7 Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH + DL:0.15 kbps SRB#5 for DCCH**

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

**7.5.7.1 Uplink**

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.62.1.1.1 of [1]	6.10.2.4.6.5.1.1.1 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.62.1.1.3 of [1]			
TFC subset list	6.10.2.4.1.62.1.1.4 of [1]			
Physical Channel	6.10.2.4.1.62.1.2 of [1]	6.10.2.4.6.5.1.2.1 of [1]	6.10.2.4.1.62.1.2 of [1] <i>See NOTE</i>	

NOTE:Already included in Physical Channel Definition of Radio Bearer on DPCH.

**7.5.7.2 Downlink**

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.62.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1] 6.10.2.4.1.62.2.1.3 of [1]	
TFCS	6.10.2.4.1.62.2.1.4 of [1]			
Physical Channel	6.10.2.4.1.62.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.62.2.2 of [1] <i>See NOTE</i>	

NOTE:Already included in Physical Channel Definition of Radio Bearer on DPCH.

### 7.5.8 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 64 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.8.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.13.1.1.1 of [1]	6.10.2.4.6.5.1.1.1 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.13.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.13.1.2 of [1]	6.10.2.4.6.5.1.2.1 of [1]	6.10.2.4.1.13.1.2 of [1] <i>See NOTE</i>	

NOTE:Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.8.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.13.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.13.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.13.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.13.2.2 of [1] <i>See NOTE</i>	

NOTE:Already included in Physical Channel Definition of Radio Bearer on DPCH.

### 7.5.9 Conversational / speech / UL:(5.9, 4.75) DL:( 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

## 7.5.9.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	7.1.12a.1.1	6.10.2.4.6.5.1.1.1 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	7.1.12a.1.1.3			
Physical Channel	6.10.2.4.1.9.1.2 of [1]	6.10.2.4.6.5.1.2.1 of [1]	6.10.2.4.1.9.1.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

## 7.5.9.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	7.1.12a.2.1	6.10.2.4.5.1.2.1.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	7.1.12a.2.1.3			
Physical Channel	6.10.2.4.1.9.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.9.2.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

### 7.5.10 UL: [max bit rate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH

The minimum UE classes supporting this combination are: support of HS-PDSCH, DL on HS-PDSCH: category 11 and support of E-DPDCH, UL on E-DPDCH category 1.

This is supported in Release 6.

## 7.5.10.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel				7.5.10.1.1.1.1
TFCS				
Physical	6.10.2.4.6.1.1.2.1 of [1] E-TFCI table index = 0; E-DCH minimum set E-TFCI = 9 (10 ms TTI) or 10 (2 ms TTI) (TB size)			

Channel	166 bits)
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7.5.10.1.1 Transport channel parameters

7.5.10.1.1.1 Transport channel parameters for E-DCH

7.5.10.1.1.1.1 MAC-d flow#1 parameters for UL: [max bit rate depending on UE category and TTI] (non-scheduled) on E-DCH SRBs for DCCH

Higher layer	RAB/Signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	Depends on UE category and TTI			
	AMD/UMD PDU header, bit	8	16	16	16
MAC	MAC-e multiplexing	4 logical channel multiplexing			
	MAC-d PDU size, bit	144			
	Max MAC-e PDU content size, bit	162 (non-scheduled) (NOTE1)			
	MAC-e/es header fixed part, bit	18			
Layer 1	TrCH type	E-DCH			
	TTI	10ms (alt. 2ms) (NOTE2)			
	Coding type	TC			
	CRC, bit	24			
NOTE1: Max MAC-e PDU content sizes depends on non-scheduled grant given by SRNC					
NOTE2: The support of 2ms TTI depends on the UE category.					

7.5.10.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel				6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel	6.10.2.4.5.1.2.2.2 of [1] The physical channel configuration shall use F-DPCH.			

7.5.11 RB for interactive or background / UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB  
 + UL: [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH

The minimum UE classes supporting this combination are: support of HS-PDSCH, DL on HS-PDSCH: category 11 and support of E-DPDCH, UL on E-DPDCH category 1.

This is supported in Release 6.

7.5.11.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.1.1.1.1.1 of [1]		7.5.10.1.1.1.1
TFCS				
Physical Channel	6.10.2.4.6.1.1.2.1 of [1] E-TFCI table index = 0; E-DCH minimum set E-TFCI = 9 (10 ms TTI) or 10 (2 ms TTI) (TB size 166 bits)			

Note: MAC-e multiplexing of scheduled and non-scheduled MAC-d flows is allowed

7.5.11.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1]		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel	6.10.2.4.5.1.2.2.2 of [1] The physical channel configuration shall use F-DPCH.			

7.5.12 RB for Conversational / unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB  
 + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB  
 + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB  
 + UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH  
 SRBs for DCCH

The minimum UE classes supporting this combination are: support of HS-PDSCH, DL on HS-PDSCH: category 11 and support of E-DPDCH, UL on E-DPDCH category 1.

This is supported in Release 6.

7.5.12.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH



Transport Channel		7.6.3.1.1.1.1 for conversational RB,  6.10.2.4.6.1.1.1.1.1 of [1] for Interactive/Background RBs (MAC-e muxed)		7.5.10.1.1.1.1
TFCS				
Physical Channel	6.10.2.4.6.1.1.2.1 of [1] E-TFCI table index = 0; E-DCH minimum set E-TFCI = = 29 (10 ms TTI, TB size 374 bits) or 32 (2 ms TTI, TB size 368 bits)			

NOTE: MAC-e multiplexing of scheduled and non-scheduled MAC-d flows is allowed.

7.5.12.1.1 Transport channel parameters

7.5.12.1.1.1 Transport channel parameters for E-DCH

7.5.12.1.1.1.1 MAC-d flow#1 parameters for conversational / Unknown UL: [max bit rate depending on UE category and TTI] on E-DCH / PS RAB

Higher layer	RAB/Signalling RB	RAB
PDCP	PDCP header size, bit	0
RLC	Logical channel type	DTCH
	RLC mode	UM
	Payload sizes, bit	88, 104, 136, 152, 168, 184, 200, 216, 280, 288, 304, 336 (alt 328)
	Max data rate, bps	Depends on UE category and TTI
	UMD PDU header, bit	8
MAC	MAC-e multiplexing	N/A
	MAC-d PDU size, bit	96, 112, 144, 160, 176, 192, 208, 224, 288, 296, 312, 344 (alt 336)
	Max MAC-e PDU content size, bit	(non-scheduled) (NOTE1)
	MAC-e/es header fixed part, bit	18
Layer 1	TrCH type	E-DCH
	TTI	10ms (alt. 2ms) (NOTE2)
	Coding type	TC
	CRC, bit	24

NOTE1: Max MAC-e PDU content sizes depends on non-scheduled grant given by SRNC

NOTE2: The support of 2ms TTI depends on the UE category.

7.5.12.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.4.22.2.1.1.1 for Conversational RB  6.10.2.4.5.1.2.1.1.1 of [1] for Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical	6.10.2.4.5.1.2.2.2 of [1]			

Channel	The physical channel configuration shall use F-DPCH.
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- 7.5.13 RB for Conversational / Unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB  
+ RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB  
+ UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH  
SRBs for DCCH

The minimum UE classes supporting this combination are: support of HS-PDSCH, DL on HS-PDSCH: category 11 and support of E-DPDCH, UL on E-DPDCH category 1.

This is supported in Release 6.

#### 7.5.13.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		7.6.3.1.1.1.1 for Conversational RB  6.10.2.4.6.1.1.1.1 of [1] for Interactive/Background		7.5.10.1.1.1.1
TFCS				
Physical Channel	6.10.2.4.6.1.1.2.1 of [1] E-TFCI table index = 0; E-DCH minimum set E-TFCI = 29 (10 ms TTI, TB size 374 bits) or 32 (2 ms TTI, TB size 368 bits)			

NOTE: MAC-e multiplexing of scheduled and non-scheduled MAC-d flows is allowed.

#### 7.5.13.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.4.22.2.1.1.1 for Conversational RB 6.10.2.4.5.1.2.1.1.1 of [1] for Interactive/Background RB		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel	6.10.2.4.5.1.2.2.2 of [1] The physical channel configuration shall use F-DPCH.			

- 7.5.14 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.14.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.4a.1.1.1 of [1]	6.10.2.4.6.5.1.1.1.1 of [1] 6.10.2.4.6.5.1.1.1.2 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.4a.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.1.2 of [1]	6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.4a.1.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.14.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4a.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

7.5.15 RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH + DL:0.15 kbps SRB#5 for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.15.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.62.1.1.1 of [1]	6.10.2.4.6.5.1.1.1.1 of [1] 6.10.2.4.6.5.1.1.1.2 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.62.1.1.3 of [1]			
TFC subset list	6.10.2.4.1.62.1.1.4 of [1]			
Physical Channel	6.10.2.4.1.62.1.2 of [1]	6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.62.1.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.15.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.62.2.1.1 of [1]	6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1] 6.10.2.4.1.62.2.1.3 of [1]	
TFCS	6.10.2.4.1.62.2.1.4 of [1]			
Physical Channel	6.10.2.4.1.62.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.62.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

- 7.5.16 RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.16.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.5.1.1.1.1 of [1] 6.10.2.4.6.5.1.1.1.2 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.2.1.1.2 of [1]			
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.2.1.2 of [1]	

#### 7.5.16.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

- 7.5.17 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB + Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

### 7.5.17.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.4a.1.1.1 of [1]	6.10.2.4.6.5.1.1.1.1 of [1] 6.10.2.4.6.5.1.1.1.2 of [1]	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.4a.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.1.2 of [1]	6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.4a.1.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

### 7.5.17.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	6.10.2.4.5.6.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4a.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.2.2 of [1]	6.10.2.4.5.6.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

- 7.5.18 RB for Conversational / Speech UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB
- + RB for Conversational / Unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB
- + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB
- + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB
- + UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH

The minimum UE classes supporting this combination are: support of HS-PDSCH, DL on HS-PDSCH: category 11 and support of E-DPDCH, UL on E-DPDCH category 1.

This is supported in Release 6.

7.5.18.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		7.5.12.1.1.1.1 for Conversational RBs RBs (MAC-e muxed) 6.10.2.4.6.1.1.1.1 of [1] for Interactive/Background RBs RBs (MAC-e muxed)		7.5.10.1.1.1.1
TFCS				
Physical Channel	6.10.2.4.6.1.1.2.1 of [1] E-TFCl table index = 0; E-DCH minimum set E-TFCl = 29 (10 ms TTI, TB size 374 bits) or 32 (2 ms TTI, TB size 368 bits)			

NOTE: MAC-e multiplexing of scheduled and non-scheduled MAC-d flows is allowed.

7.5.18.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.4.22.2.1.1.1 for Conversational RBs 6.10.2.4.5.1.2.1.1 of [1] for Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel	6.10.2.4.5.1.2.2.2 of [1] The physical channel configuration shall use F-DPCH.			

- 7.5.19 RB for Conversational / Speech UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB
- + RB for Conversational / Unknown UL: [max bitrate depending on UE category and TTI] on E-DCH DL: [max bitrate depending on UE category] on HS-DSCH / PS RAB
- + RB for interactive or background / UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bitrate depending on UE category] on HS-DSCH / PS RAB
- + UL : [max bitrate depending on UE category and TTI] on E-DCH DL : [max bit rate depending on UE category] on HS-DSCH SRBs for DCCH

The minimum UE classes supporting this combination are: support of HS-PDSCH, DL on HS-PDSCH: category 11 and support of E-DPDCH, UL on E-DPDCH category 1.

This is supported in Release 6.

7.5.19.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		7.5.12.1.1.1.1 for Conversational RBs (MAC-e muxed) 6.10.2.4.6.1.1.1.1 of [1] for Interactive/Background RB		7.5.10.1.1.1.1
TFCS				
Physical Channel	6.10.2.4.6.1.1.2.1 of [1] E-TFCI table index = 0; E-DCH minimum set E-TFCI = 29 (10 ms TTI, TB size 374 bits) or 32 (2 ms TTI, TB size 368 bits)			

NOTE: MAC-e multiplexing of scheduled and non-scheduled MAC-d flows is allowed.

7.5.19.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.4.22.2.1.1.1 for Conversational RBs 6.10.2.4.5.1.2.1.1.1 of [1] for Interactive/Background RB		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel	6.10.2.4.5.1.2.2.2 of [1] The physical channel configuration shall use F-DPCH.			



7.5.20 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.20.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.4.1.1.1 of [1]	6.10.2.4.6.1.1.1.1.1 of [1] for Interactive/Background RBs (MAC-e muxed)	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.4.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.4.1.2 of [1]	6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.4.1.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.20.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4.2.1.1 of [1]	6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

- 7.5.21 RB for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.21.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.4.1.1.1 of [1]	6.10.2.4.6.1.1.1.1.1 of [1] for Interactive/Background RBs (MAC-e muxed)	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.4.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.4.1.2 of [1]	6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.4.1.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.21.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1] for Interactive/Background RBs	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

7.5.22 RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.22.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.1.1.1.1 of [1] for Interactive/Background RBs (MAC-e muxed)	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.2.1.1.2 of [1]			
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.2.1.2 of [1]	

#### 7.5.22.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1.1 of [1] for Interactive/Background RBs	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.2.2.2 of [1]	

- 7.5.23 RB for Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.23.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.4a.1.1.1 of [1]	6.10.2.4.6.1.1.1.1.1 of [1] for Interactive/Background RBs (MAC-e muxed)	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	6.10.2.4.1.4a.1.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.1.2 of [1]	6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.4a.1.2 of [1] <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.23.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4a.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1] for Interactive/Background RBs	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4a.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4a.2.2 of [1]	6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.4a.2.2 of [1] <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

7.5.24 RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.24.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.62.1.1.1 of [1]	6.10.2.4.6.1.1.1.1.1 of [1] for Interactive/Background RBs (MAC-e muxed)	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.1.106.1.1.3			
Physical Channel	See 7.1.106.1.2	6.10.2.4.6.1.1.2.1 of [1]	See 7.1.106.1.2 See NOTE	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.24.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.62.2.1.1 of [1]	6.10.2.4.5.5.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	See 7.1.106.2.1.3			
Physical Channel	See 7.1.106.2.2	6.10.2.4.5.1.2.2.2 of [1]	See 7.1.106.2.2 See NOTE.	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

7.5.25 RB for Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + RB for Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.25.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel	6.10.2.4.1.62.1.1.1 of [1]	6.10.2.4.6.1.1.1.1.1 of [1] for Interactive/Background RBs (MAC-e muxed)	6.10.2.4.1.2.1.1.1 of [1]	
TFCS	See 7.1.106.1.1.3			
Physical Channel	See 7.1.106.1.2	6.10.2.4.6.1.1.2.1 of [1]	See 7.1.106.1.2 <i>See NOTE</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH.

#### 7.5.25.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.62.2.1.1 of [1]	6.10.2.4.5.1.2.1.1.1 of [1] for Interactive/Background RBs	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	See 7.1.106.2.1.3			
Physical Channel	See 7.1.106.2.2	6.10.2.4.5.1.2.2.2 of [1]	See 7.1.106.2.2 <i>See NOTE.</i>	

NOTE: Already included in Physical Channel Definition of Radio Bearer on DPCH

## 7.5.26 UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH + DCH 3.4kbps

The minimum UE classes supporting this combination are UL: 12 kbps, DL on DPCH: 12 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6 onwards.

### 7.5.26.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel				6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel				6.10.2.4.6.1.1.2.1 of [1]

### 7.5.26.2 Downlink

#### 7.5.26.2.1 Transport channel parameters for SRBs mapped on "DCH + HS-DSCH"

There is only one configuration for RLC and Mac-d that is mapped to the transport channel type "DCH + HS-DSCH".

#### 7.5.26.2.1.1 RLC and Mac-d Parameters for DL: [max bit rate depending on UE category] SRBs for HS-DSCH + DCH 3.4kbps

Alternative 1: Fixed RLC + MAC-hs (Rel-6 and later releases):

Higher layer	RAB/Signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	On HS-DSCH : Depends on UE category (NOTE 1) On DCH : 3.4kbps			
	AMD PDU header, bit	8	16	16	16
MAC-d	MAC-d header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
	MAC-d PDU size, bit	148			
	MAC-hs Type	MAC-hs			
	MAC-hs/ehs header fixed part, bit	21			
NOTE 1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-hs PDU (see 3GPP TS 25.321 [38]).					

Alternative 2: Fixed RLC + MAC-ehs (Rel-7 and later releases):

Higher layer	RAB/Signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128

	Max data rate, bps	On HS-DSCH : Depends on UE category (NOTE 1) On DCH : 3.4kbps			
	AMD PDU header, bit	8	16	16	16
MAC-d	MAC-d header, bit	0	0	0	0
	MAC multiplexing	4 logical channel multiplexing			
	MAC-d PDU size, bit	144			
	MAC-hs Type	MAC-ehs			
	MAC-hs/ehs header fixed part, bit	24			
NOTE 1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-ehs PDU (see 3GPP TS 25.321 [38]).					

#### 7.5.26.2.1.2 Layer 1 parameters for DL SRBs for DCH 3.4kbps

Layer 1	TrCH type		DCH
	TB sizes, bit		148 (alt 0, 148) (note 2)
	TFS	TF0, bits	0x148 (alt 1x0) (note 2)
		TF1, bits	1x148
	TTI		40
	Coding type		CC 1/3
	CRC, bit		16
	Max number of bits/TTI before rate matching		516
	RM attribute		155 to 230
	NOTE 2: alternative parameters enable the measurement "transport channel BLER" in the UE.		

#### 7.5.26.2.1.3 Mac-hs and layer 1 parameters for DL: [max bit rate depending on UE category] SRBs for HS-DSCH

Alternative 1: Fixed RLC + MAC-hs (Rel-6 and later releases):

MAC-hs	MAC-hs header fixed part, bit	21
Layer 1	TrCH type	HS-DSCH
	TTI	2 ms
	Coding type	TC
	CRC, bit	24
	Applicable modulation scheme	QPSK, 16QAM
	Applicable with MIMO	No

Alternative 2: Fixed RLC + MAC-ehs (Rel-7 and later releases):

MAC-ehs	MAC-ehs header fixed part, bit	24
Layer 1	TrCH type	HS-DSCH
	TTI	2 ms
	Coding type	TC
	CRC, bit	24
	Applicable modulation scheme	QPSK, 16QAM, 64QAM
	Applicable with MIMO	Yes

#### 7.5.26.2.1.4 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

#### 7.5.26.2.2 Physical channel parameters

##### 7.5.26.2.2.1 Physical channel parameters on DPCH



See subclause 6.10.2.4.1.2.2.2 of [1]

#### 7.5.26.2.2.2 Physical channel parameters on HS-PDSCH

See subclause 6.10.2.4.5.1.2.2.2 of [1]

### 7.5.27 Streaming or interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RAB + UL:13.6 DL:13.6kbps SRBs for DCCH on DCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

This is supported in Release 6.

#### 7.5.27.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.1.1.1.1 of [1]	6.10.2.4.1.3.1.1.1 of [1]	
TFCS	6.10.2.4.1.3.1.1.2 of [1]			
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]	6.10.2.4.1.3.1.2 of [1]	

#### 7.5.27.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.5.1.2.1.1 of [1]	6.10.2.4.1.3.2.1.1 of [1]	
TFCS	6.10.2.4.1.3.2.1.2 of [1]			
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]	6.10.2.4.1.3.2.2 of [1]	

### 7.5.28 Conversational / speech / UL: 12.2 kbps DL: 12.2 kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

## 7.5.28.1 Uplink

## 7.5.28.1.1 Transport channel parameters

## 7.5.28.1.1.1 Transport channel parameters for E-DCH

## 7.5.28.1.1.1.1 MAC-d flow#1 parameters for Conversational / speech / UL: 12.2 kbps / CS RAB (non-scheduled)

Higher layer	RAB/Signalling RB	RAB
PDCP	Header size, bit	8
RLC	Logical channel type	DTCH
	RLC mode	UM
	Payload sizes, bit	48, 256
	Max data rate, bps	Depends on UE category and TTI
	UMD PDU header, bit	8
MAC	MAC multiplexing	N/A
	MAC-d PDU size, bit	56, 264 (non-scheduled) NOTE1
	MAC-e/es header fixed part, bit	18
Layer 1	TrCH type	E-DCH
	TTI	10ms (alt. 2ms) (NOTE2)
	Coding type	TC
	CRC, bit	24
NOTE1: Max MAC-e PDU content sizes depends on non-scheduled grant given by SRNC		
NOTE2: The support of 2ms TTI depends on the UE category.		

## 7.5.28.1.1.1.2 MAC-d flow #2 parameters for UL: [max bit rate depending on UE category and TTI] sSRBs for E-DCH

See clause 6.10.2.4.6.2.1.1.1.2 of [1].

## 7.5.28.1.2 Physical channel parameters

## 7.5.28.1.2.1 Physical channel parameters on E-DPDCH

See clause 6.10.2.4.6.1.1.2.1 of [1].

## 7.5.28.2 Downlink

## 7.5.28.2.1 Transport channel parameters

## 7.5.28.2.1.1 Transport channel parameters for HS-DSCH

## 7.5.28.2.1.1.1 MAC-d flow#1 parameters for Conversational / speech / DL: 12.2 kbps / CS RAB

		Alt 1 RLC + MAC-hs (Rel-5 and later releases)	Alt 2 RLC + MAC-ehs (Rel-7 and later releases)
Higher Layer	RAB/Signalling RB	RAB	
PDCP	Header size, bit	8	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	48, 256	48, 256
	Max data rate, bps	depends on UE category NOTE1	
	UMD PDU header, bit	8	8
MAC	MAC-d header, bit	0	0
	MAC multiplexing	N/A	N/A
	MAC-d PDU size, bit	56, 264	56, 264
	MAC-hs Type	MAC-hs	MAC-ehs
	MAC-hs/ehs header fixed part, bit	21	24
Layer 1	TrCH type	HS-DSCH	HS-DSCH
	TTI	2 ms	2 ms
	Coding type	TC	TC
	CRC, bit	24	24
	Applicable modulation schemes	QPSK, 16QAM	QPSK, 16QAM, 64QAM
	Applicable with MIMO	No	Yes
NOTE1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-hs or MAC-ehs PDU (see [25.321]).			

## 7.5.28.2.1.1.2 MAC-d flow#2 parameters for DL: [max bit rate depending on UE category] SRBs for HS-DSCH

See clause 6.10.2.4.6.3.2.1.1.2 of [1].

## 7.5.28.2.2 Physical channel parameters

The physical channel configuration shall use F-DPCH.

## 7.5.28.2.2.1 Physical channel parameters on HS-PDSCH

See clause 6.10.2.4.5.1.2.2.2 of [1].

## 7.5.29 Conversational / speech / UL:(5.9, 4.75) kbps DL: (5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

## 7.5.29.1 Uplink

## 7.5.29.1.1 Transport channel parameters

## 7.5.29.1.1.1 Transport channel parameters for E-DCH

## 7.5.29.1.1.1.1 MAC-d flow#1 parameters for Conversational / speech / UL:( 5.9, 4.75) kbps / CS RAB (non-scheduled)

Higher layer	RAB/Signalling RB	RAB
PDCP	Header size, bit	8
RLC	Logical channel type	DTCH
	RLC mode	UM
	Payload sizes, bit	48, 104, 128
	Max data rate, bps	Depends on UE category and TTI
	UMD PDU header, bit	8
MAC	MAC multiplexing	N/A
	MAC-d PDU size, bit	56, 112, 136 (non-scheduled) NOTE1
	MAC-e/es header fixed part, bit	18
Layer 1	TrCH type	E-DCH
	TTI	10ms (alt. 2ms) (NOTE2)
	Coding type	TC
	CRC, bit	24
NOTE1: Max MAC-e PDU content sizes depends on non-scheduled grant given by SRNC		
NOTE2: The support of 2ms TTI depends on the UE category.		

## 7.5.29.1.1.1.2 MAC-d flow #2 parameters for UL: [max bit rate depending on UE category and TTI] SRBs for E-DCH

See clause 6.10.2.4.6.2.1.1.1.2 of [1].

## 7.5.29.1.2 Physical channel parameters

## 7.5.29.1.2.1 Physical channel parameters on E-DPDCH

See clause 6.10.2.4.6.1.1.2.1 of [1].

## 7.5.29.2 Downlink

## 7.5.29.2.1 Transport channel parameters

## 7.5.29.2.1.1 Transport channel parameters for HS-DSCH

## 7.5.29.2.1.1.1 MAC-d flow #1 parameters for Conversational / speech / DL:( 5.9, 4.75) kbps / CS RAB

		Alt 1 RLC + MAC-hs (Rel-5 and later releases)	Alt 2 RLC + MAC-ehs (Rel-7 and later releases)
Higher Layer	RAB/Signalling RB	<b>RAB</b>	
PDCP	Header size, bit	8	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	48, 104, 128	48, 104, 128
	Max data rate, bps	depends on UE category NOTE1	
	UMD PDU header, bit	8	8
MAC	MAC-d header, bit	0	0
	MAC multiplexing	N/A	N/A
	MAC-d PDU size, bit	56, 112, 136	56, 112, 136
	MAC-hs Type	MAC-hs	MAC-ehs
	MAC-hs/ehs header fixed part, bit	21	24
Layer 1	TrCH type	HS-DSCH	HS-DSCH
	TTI	2 ms	2 ms
	Coding type	TC	TC
	CRC, bit	24	24
	Applicable modulation schemes	QPSK, 16QAM	QPSK, 16QAM, 64QAM
	Applicable with MIMO	No	Yes
NOTE1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-hs or MAC-ehs PDU (see [25.321]).			

## 7.5.29.2.1.1.2 MAC-d flow #2 parameters for DL: [max bit rate depending on UE category] SRBs for HS-DSCH

See clause 6.10.2.4.6.3.2.1.1.2 of [1].

## 7.5.29.2.2 Physical channel parameters

The physical channel configuration shall use F-DPCH.

## 7.5.29.2.2.1 Physical channel parameters on HS-PDSCH

See clause 6.10.2.4.5.1.2.2.2 of [1].

**7.5.30 Conversational / speech / UL:(12.2, 7.95, 5.9, 4.75) kbps DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH**

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

### 7.5.30.1 Uplink

#### 7.5.30.1.1 Transport channel parameters

##### 7.5.30.1.1.1 Transport channel parameters for E-DCH

###### 7.5.30.1.1.1.1 MAC-d flow #1 parameters for Conversational / speech / UL:(12.2, 7,75, 5.9, 4.75) kbps / CS RAB (non-scheduled)

See clause 6.10.2.4.6.9.1.1.1.1 of [1].

###### 7.5.30.1.1.1.2 MAC-d flow #2 parameters for UL: [max bit rate depending on UE category and TTI] SRBs for E-DCH

See clause 6.10.2.4.6.2.1.1.1.2 of [1].

#### 7.5.30.1.2 Physical channel parameters

##### 7.5.30.1.2.1 Physical channel parameters on E-DPDCH

See clause 6.10.2.4.6.1.1.2.1 of [1].

### 7.5.30.2 Downlink

#### 7.5.30.2.1 Transport channel parameters

##### 7.5.30.2.1.1 Transport channel parameters for HS-DSCH

###### 7.5.30.2.1.1.1 MAC-d flow#1 parameters for Conversational / speech / DL:(12.2, 7,75, 5.9, 4.75) kbps / CS RAB

See clause 6.10.2.4.6.9.2.1.1.1 of [1].

###### 7.5.30.2.1.1.2 MAC-d flow#2 parameters for DL: [max bit rate depending on UE category] SRBs for HS-DSCH

See clause 6.10.2.4.6.3.2.1.1.2 of [1].

#### 7.5.30.2.2 Physical channel parameters

The physical channel configuration shall use F-DPCH.

##### 7.5.30.2.2.1 Physical channel parameters on HS-PDSCH

See clause 6.10.2.4.5.1.2.2.2 of [1].

### 7.5.31 Conversational / speech / UL:(12.65, 8.85, 6.6) kbps DL: (12.65, 8.85, 6.6) kbps / CS RAB on E-DCH and HS-DSCH + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

#### 7.5.31.1 Uplink

##### 7.5.31.1.1 Transport channel parameters

###### 7.5.31.1.1.1 Transport channel parameters for E-DCH

###### 7.5.31.1.1.1.1 MAC-d flow#1 parameters for Conversational / speech / UL:(12.65, 8.85, 6.6) kbps / CS RAB (non-scheduled)

See clause 6.10.2.4.6.10.1.1.1.1 of [1].

###### 7.5.31.1.1.1.2 MAC-d flow#2 parameters for UL: [max bit rate depending on UE category and TTI] SRBs for E-DCH

See clause 6.10.2.4.6.2.1.1.1.2 of [1].

##### 7.5.31.1.2 Physical channel parameters

###### 7.5.31.1.2.1 Physical channel parameters on E-DPDCH

See clause 6.10.2.4.6.1.1.2.1 of [1].

#### 7.5.31.2 Downlink

##### 7.5.31.2.1 Transport channel parameters

###### 7.5.31.2.1.1 Transport channel parameters for HS-DSCH

###### 7.5.31.2.1.1.1 MAC-d flow#1 parameters for Conversational / speech / DL:(12.65, 8.85, 6.6) kbps / CS RAB

See clause 6.10.2.4.6.10.2.1.1.1 of [1].

###### 7.5.31.2.1.1.2 MAC-d flow#2 parameters for DL: [max bit rate depending on UE category] SRBs for HS-DSCH

See clause 6.10.2.4.6.3.2.1.1.2 of [1].

##### 7.5.31.2.2 Physical channel parameters

The physical channel configuration shall use F-DPCH.

## 7.5.31.2.2.1 Physical channel parameters on HS-PDSCH

See clause 6.10.2.4.5.1.2.2.2 of [1].

## 7.5.32 Conversational / speech / UL:(23.85 12.65 8.85 6.6) DL:(23.85 12.65 8.85 6.6) kbps / CS RAB + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH, DL on HS-PDSCH: category 11.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

## 7.5.32.1 Uplink

## 7.5.32.1.1 Transport channel parameters

## 7.5.32.1.1.1 Transport channel parameters for E-DCH

## 7.5.32.1.1.1.1 MAC-d flow#1 parameters for Conversational / speech / UL:( 23.85 12.65 8.85 6.6) kbps / CS RAB (non-scheduled)

Higher layer	RAB/Signalling RB	RAB
PDCP	Header size, bit	8
RLC	Logical channel type	DTCH
	RLC mode	UM
	Payload sizes, bit	48, 144, 192, 264, 488
	Max data rate, bps	Depends on UE category and TTI
	UMD PDU header, bit	8
MAC	MAC multiplexing	N/A
	MAC-d PDU size, bit	56, 152, 200, 272 , 496 (non-scheduled) NOTE1
	MAC-e/es header fixed part, bit	18
Layer 1	TrCH type	E-DCH
	TTI	10ms (alt. 2ms) (NOTE2)
	Coding type	TC
	CRC, bit	24
NOTE1: Max MAC-e PDU content sizes depends on non-scheduled grant given by SRNC		
NOTE2: The support of 2ms TTI depends on the UE category.		

## 7.5.32.1.1.1.2. MAC-d flow#2 parameters for UL: [max bit rate depending on UE category and TTI] SRBs for E-DCH

See clause 6.10.2.4.6.2.1.1.1.2 of [1].

## 7.5.32.1.2 Physical channel parameters

## 7.5.32.1.2.1 Physical channel parameters on E-DPDCH

See clause 6.10.2.4.6.1.1.2.1 of [1].



## 7.5.32.2 Downlink

## 7.5.32.2.1 Transport channel parameters

## 7.5.32.2.1.1 Transport channel parameters for HS-DSCH

## 7.5.32.2.1.1.1 MAC-d flow#1 parameters for Conversational / speech / DL:(23.85 12.65 8.85 6.6) kbps / CS RAB

		Alt 1 RLC + MAC-hs (Rel-5 and later releases)	Alt 2 RLC + MAC-ehs (Rel-7 and later releases)
Higher Layer	RAB/Signalling RB	<b>RAB</b>	
PDCP	Header size, bit	8	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	48, 144, 192, 264, 488	48, 144, 192, 264, 488
	Max data rate, bps	depends on UE category NOTE1	
	UMD PDU header, bit	8	8
MAC	MAC-d header, bit	0	0
	MAC multiplexing	N/A	N/A
	MAC-d PDU size, bit	56, 152, 200, 272, 496	56, 152, 200, 272, 496
	MAC-hs Type	MAC-hs	MAC-ehs
	MAC-hs/ehs header fixed part, bit	21	24
Layer 1	TrCH type	HS-DSCH	HS-DSCH
	TTI	2 ms	2 ms
	Coding type	TC	TC
	CRC, bit	24	24
	Applicable modulation schemes	QPSK, 16QAM	QPSK, 16QAM, 64QAM
	Applicable with MIMO	No	Yes
NOTE1: The peak throughput may be limited by the maximum number of MAC-d PDUs that can be included in a single MAC-hs or MAC-ehs PDU (see [25.321]).			

## 7.5.32.2.1.1.2 MAC-d flow#2 parameters for DL: [max bit rate depending on UE category] SRBs for HS-DSCH

See clause 6.10.2.4.6.3.2.1.1.2 of [1].

## 7.5.32.2.2 Physical channel parameters

The physical channel configuration shall use F-DPCH.

## 7.5.32.2.2.1 Physical channel parameters on HS-PDSCH

See clause 6.10.2.4.5.1.2.2.2 of [1].

- 7.5.33 Conversational / speech / UL:12.2 kbps DL: 12.2 kbps / CS RAB on E-DCH and HS-DSCH**  
 + (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs  
 + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

#### 7.5.33.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		7.5.28.1.1.1.1 for CS over HSPA RBs  6.10.2.4.6.1.1.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].

#### 7.5.33.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.5.28.2.1.1.1 for CS over HSPA RBs  6.10.2.4.5.1.2.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]

- 7.5.34 Conversational / speech / UL:12.2 kbps DL: 12.2 kbps / CS RAB on E-DCH and HS-DSCH  
 + Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB  
 + (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs  
 + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

#### 7.5.34.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		7.5.28.1.1.1.1 for CS over HSPA RBs 6.10.2.4.6.1.1.1.1.1 of [1] for Streaming RBs 6.10.2.4.6.1.1.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].

## 7.5.34.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.5.28.2.1.1.1 for CS over HSPA RBs  6.10.2.4.5.1.2.1.1.1 of [1] for Streaming RBs  6.10.2.4.5.1.2.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]

**7.5.35** Conversational / speech / UL:(12.2, 7.95, 5.9, 4.75) kbps DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH + (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

## 7.5.35.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.9.1.1.1.1 of [1] for CS over HSPA RBs  6.10.2.4.6.1.1.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				

Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].
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### 7.5.35.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.6.9.2.1.1.1 of [1] for CS over HSPA RBs  6.10.2.4.5.1.2.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]

- 7.5.36 Conversational / speech / UL:(12.2, 7.95, 5.9, 4.75) kbps DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH  
+ Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB  
+ (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs  
+ UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

### 7.5.36.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH

Transport Channel		6.10.2.4.6.9.1.1.1.1 of [1] for CS over HSPA RBs  6.10.2.4.6.1.1.1.1.1 of [1] for Streaming RBs  6.10.2.4.6.1.1.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].

### 7.5.36.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.6.9.2.1.1.1 of [1] for CS over HSPA RBs  6.10.2.4.5.1.2.1.1.1 of [1] for Streaming RBs  6.10.2.4.5.1.2.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]

**7.5.37** Conversational / speech / UL:(5.9, 4.75) kbps DL: (5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH  
+ (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs  
+ UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

## 7.5.37.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		7.5.29.1.1.1.1 for CS over HSPA RBs  6.10.2.4.6.1.1.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].

## 7.5.37.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.5.29.2.1.1.1 for CS over HSPA RBs  6.10.2.4.5.1.2.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]

- 7.5.38 Conversational / speech / UL:(5.9, 4.75) kbps DL: (5.9, 4.75) kbps / CS RAB on E-DCH and HS-DSCH  
+ Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB  
+ (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs  
+ UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

### 7.5.38.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		7.5.29.1.1.1.1 for CS over HSPA RBs  6.10.2.4.6.1.1.1.1 of [1] for Streaming RBs  6.10.2.4.6.1.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].

### 7.5.38.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		7.5.29.2.1.1.1 for CS over HSPA RBs  6.10.2.4.5.1.2.1.1.1 of [1] for Streaming RBs  6.10.2.4.5.1.2.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]



- 7.5.39 Conversational / speech / UL:( 12.65 8.85 6.6) kbps DL: (12.65 8.85 6.6) kbps / CS RAB on E-DCH and HS-DSCH  
 + (1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs  
 + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

#### 7.5.39.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.10.1.1.1 of [1] for CS over HSPA RBs  6.10.2.4.6.1.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].

#### 7.5.39.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.6.10.2.1.1.1 of [1] for CS over HSPA RBs  6.10.2.4.5.1.2.1.1.1 of [1] for (1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.3.2.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]

- 7.5.40 Conversational / speech / UL:( 12.65 8.85 6.6) kbps DL: (12.65 8.85 6.6) kbps / CS RAB on E-DCH and HS-DSCH  
 + Streaming / unknown / UL:[max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] kbps / PS RAB  
 + (0, 1, 2 or 3) Interactive or background / UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] / PS RABs  
 + UL: [max bit rate depending on UE category and TTI] DL: [max bit rate depending on UE category] SRBs for DCCH on E-DCH and HS-DSCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL on DPCH: 32 kbps plus support of HS-PDSCH and support of E-DCH, HS-PDSCH: category 11, E-DCH: category 1.

Support depends on the UE capability: Support for CS voice over HSPA.

This is supported in Release 8.

#### 7.5.40.1 Uplink

	Radio Bearer on DPCH	Radio Bearer on E-DPCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on E-DPCH
Transport Channel		6.10.2.4.6.10.1.1.1.1 of [1] for CS over HSPA RBs  6.10.2.4.6.1.1.1.1.1 of [1] for Streaming RBs  6.10.2.4.6.1.1.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		6.10.2.4.6.2.1.1.1.2 of [1]
TFCS				
Physical Channel		6.10.2.4.6.1.1.2.1 of [1]		6.10.2.4.6.1.1.2.1 of [1].

#### 7.5.40.2 Downlink

The physical channel configuration shall use F-DPCH.

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.10.2.4.6.10.2.1.1.1 of [1] for CS over HSPA RBs		6.10.2.4.6.3.2.1.1.2 of [1]

		6.10.2.4.5.1.2.1.1.1 of [1] for Streaming RBs		
		6.10.2.4.5.1.2.1.1.1 of [1] for (0, 1, 2 or 3) Interactive/Background RBs		
TFCS				
Physical Channel		6.10.2.4.5.1.2.2.2 of [1]		6.10.2.4.5.1.2.2.2 of [1]

## 7.6 Void

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# 8 Examples of Radio Bearers and Signalling Radio Bearers for 3.84 Mcps TDD

NOTE: The physical channel parameters were chosen for each RAB because they are typical for the targeted UE class to support the particular RAB. However based on current radio conditions UEs shall expect to be configured to use any timeslot/code/spreading factors combinations that support the RAB and are supported by that UE's physical capabilities.

## 8.1 Combinations on DPCH

### 8.1.1 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.3.4.1.1 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

### 8.1.2 Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

### 8.1.3 Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH

See subclause 6.10.3.4.1.3 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### 8.1.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.4 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### 8.1.5 Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.5 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### 8.1.6 Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.6 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### 8.1.7 Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.7 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### 8.1.8 Conversational / speech / UL:6.7 DL: 6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.8 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### 8.1.9 Conversational / speech / UL:5.9 DL:5.9 kbps / CS rab + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.9 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### 8.1.10 Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.3.4.1.10 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### **8.1.11 Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.11 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### **8.1.12 Conversational / unknown / UL:28.8 DL:28.8kbps / CS RAB + UL:3.4 DL:3.4kbps SRBs for DCCH**

See subclause 6.10.3.4.1.12 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### **8.1.13 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.13 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

#### **8.1.14 Conversational / unknown / UL:32 DL: 32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.14 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### **8.1.15 Streaming / unknown / UL:14.4 DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.15 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

#### **8.1.16 Streaming / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.16 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

### 8.1.17 Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.17 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

### 8.1.18 Streaming / unknown / UL:0 DL: 64 kbps / CS or PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

Void.

### 8.1.19 Streaming / unknown / UL: 64 DL:0 kbps / CS or PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

Void

### 8.1.20 Interactive or background / UL: 32 DL:8 kbps / PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.23 of [1].

The minimum UE classes supporting this combination are UL: 32kbps ; DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI

This is supported in Release '99.

### 8.1.21 Interactive or background / UL: 64 DL: 8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

Void.

### 8.1.22 Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.25 of [1].

The minimum UE classes supporting this combination are UL: 32kbps ; DL: 64kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI.

This is supported in Release '99.

### 8.1.23 Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.26 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 64kbps . The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

### 8.1.24 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.27 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

### 8.1.25 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.28 of [1].

The minimum UE classes supporting this combination are UL: 128kbps; DL: 128kbps. The minimum UE class to support the alternative UL configuration is UL: 128kbps plus support for 32 TB/TTI.

This is supported in Release '99.

### 8.1.26 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.29 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128kbps.

This is supported in Release '99.

### 8.1.27 Interactive or background / UL: 144 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.30 of [1].

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum 16 TBs per TTI; DL: 128kbps.

This is supported in Release '99.

### 8.1.28 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.31 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 384kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

### 8.1.29 Interactive or background / UL: 64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.32 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 384kbps. The minimum UE class to support the alternative DL configuration is DL: 768kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

### 8.1.30 Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.33 of [1].

The minimum UE classes supporting this combination are UL: 128kbps; DL: 384kbps. The minimum UE class to support the alternative DL configuration is DL: 768kbps. The minimum UE class to support the alternative UL configuration is UL: 128kbps plus support for 16 TB/TTI.

This is supported in Release '99.

### 8.1.31 Interactive or background / UL:384 DL:384 kbps / PS RAB +UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.34 of [1].

The minimum UE classes supporting this combination are UL: 384kbps; DL: 384kbps. The minimum UE class to support the alternative DL configuration is DL 768 kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL 768 kbps.

This is supported in Release '99.

### 8.1.32 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.35 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 2048kbps. The minimum UE class to support the alternative DL configuration is 2048kbps plus support for maximum TB bits 81920 and maximum TC TB bits 81920. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

### 8.1.33 Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

Void.

### 8.1.34 Interactive or background / UL: 384 DL:2048 kbps / PS RAB+UL:3.4 DL:3.4 kbps SRBs for DCCH

Void.

### 8.1.35 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.38 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.



**8.1.36 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:32 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.39 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

**8.1.37 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.40 of [1].

The minimum UE classes supporting this combination are UL: 64kbps ; DL: 64kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

**8.1.38 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.41 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 128 kbps.

This is supported in Release '99.

**8.1.39 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.42 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 384kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

**8.1.40 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.43 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 384 kbps plus. The minimum UE class to support the alternative DL configuration is DL: 768kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

**8.1.41** Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or background / UL:128 DL:2048 kbps / PS RAB +  
UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.44 of [1].

The minimum UE classes supporting this combination are UL: 384kbps plus support for 2 physical channels per TS; DL: 2048 kbps plus support for maximum TB bits 40960, maximum TC TB bits 40960, or if an alternative RAB is used, plus support for maximum TB bits 81920 and maximum TB TC bits 81920.

This is supported in Release '99.

**8.1.42** Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.45 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps.

This is supported in Release '99.

**8.1.43** Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

Void.

**8.1.44** Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.49 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64kbps

This is supported in Release '99.

**8.1.45** Conversational / unknown / UL:64 DL:64 kbps / CS RAB +  
Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.50 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 128 kbps.

This is supported in Release '99

**8.1.46** Conversational / unknown / UL:64 DL:64 kbps / CS RAB +  
Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.51 of [1].

The minimum UE classes for this combinations are UL: 64 kbps; DL: 128kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

**8.1.47 Conversational / unknown / UL:64 DL:64 kbps / CS RAB +  
Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.52 of [1].

The minimum UE classes for this combination are UL: 64 kbps ; DL: 384kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB/TTI.

This is supported in Release '99.

**8.1.48 Conversational / unknown / UL:64 DL:64 kbps / CS RAB +  
Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH**

See subclause 6.10.3.4.1.53 of [1].

The minimum UE classes for this combination are UL: 384kbps; DL: 384kbps. The minimum UE class to support the alternative UL configuration is UL: 384kbps plus support for 32 TB/TTI.

This is supported in Release '99.

**8.1.49 Interactive or background / UL:64 DL:128 kbps / PS RAB +  
streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4  
DL:3.4kbps SRBs for DCCH**

Void.

**8.1.50 Conversational / Speech UL:(12.2-7.95-5.9-4.75) & DL:(12.2-7.95-  
5.9-4.75) CS RAB + UL:3.4 & DL 3.4kbps SRBs for DCCH**

See subclause 6.10.3.4.1.4a of [1].

The minimum UE classes for this combination are UL: 32 kbps; DL: 32 kbps.

This is supported in Release '99.

**8.1.51 Conversational / Speech UL:(10.2-6.7-5.9-4.75) & DL:(10.2-7.95-  
5.9-4.75) CS RAB + UL:3.4 & DL 3.4kbps SRBs for DCCH**

See subclause 6.10.3.4.1.5a of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

**8.1.52 Conversational / Speech UL:(7.4-6.7-5.9-4.75) & DL:(7.4-6.7-5.9-  
4.75) CS RAB + UL:3.4 & DL 3.4kbps SRBs for DCCH**

See subclause 6.10.3.4.1.7a of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

### 8.1.53 Interactive or Background UL:8 & DL:8kbps PS RAB + UL:3.4 & DL:3.4 SRBs for DCCH

See subclause 6.10.3.4.1.23a of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI.

This is supported in Release '99.

### 8.1.54 Interactive or Background UL:16 & DL:16kbps PS RAB + UL:3.4 & DL:3.4 SRBs for DCCH

See subclause 6.10.3.4.1.23b of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI.

This is supported in Release '99.

### 8.1.55 Interactive or Background UL:32 & DL:32kbps PS RAB + UL:3.4 & DL:3.4 SRBs for DCCH

See subclause 6.10.3.4.1.23c of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

### 8.1.56 Interactive or Background UL:32 & DL:32kbps PS RAB (20msTTI) + UL:3.4 & DL:3.4 SRBs for DCCH

See subclause 6.10.3.4.1.23d of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI.

This is supported in Release '99.

### 8.1.57 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.38a of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps.

This is supported in Release '99.

### 8.1.58 Conversational / Speech UL:12.2 & DL:12.2kbps CS RAB + Interactive or Background UL:8 & DL:8kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH

See subclause 6.10.3.4.1.38b of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps.

This is supported in Release '99.

**8.1.59 Conversational / Speech UL:12.2 & DL:12.2kbps CS RAB +  
Interactive or Background UL:32 & DL:32kbps PS RAB + UL3.4 &  
DL:3.4kbps SRB's for DCCH**

See subclause 6.10.3.4.1.38c of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

**8.1.60 Conversational / Speech UL:12.2 & DL:12.2kbps CS RAB +  
Interactive or Background UL:64 & DL:64kbps PS RAB + Interactive  
or Background UL:64 & DL:64kbps PS RAB + UL3.4 & DL:3.4kbps  
SRB's for DCCH**

See subclause 6.10.3.4.1.38d of [1].

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM mode entities, DL: 64 kbps plus support for 5 AM mode entities. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB per TTI and support for 5 AM mode entities.

This is supported in Release '99.

**8.1.61 Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95  
5.9 4.75)kbps CS RAB + Interactive or Background UL:0 &  
DL:0kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH**

See subclause 6.10.3.4.1.38e of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps.

This is supported in Release '99.

**8.1.62 Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95  
5.9 4.75)kbps CS RAB + Interactive or Background UL:8 &  
DL:8kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH**

See subclause 6.10.3.4.1.38f of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps.

This is supported in Release '99.

**8.1.63 Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95  
5.9 4.75)kbps CS RAB + Interactive or Background UL:16 &  
DL:16kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH**

See subclause 6.10.3.4.1.38g of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

**8.1.64 Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:32 & DL:32kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH**

See subclause 6.10.3.4.1.38h of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 32 kbps..

This is supported in Release '99.

**8.1.65 Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:64 & DL:64kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH**

See subclause 6.10.3.4.1.38i of [1].

The minimum UE classes supporting this combination are UL: 64 kbps + 48 Configured TFCs, DL: 64 kbps + 64 Configured TFCs. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB per TTI and 48 Configured TFCs.

This is supported in Release '99.

**8.1.66 Conversational / Speech UL:(12.2 7.95 5.9 4.75) & DL:(12.2 7.95 5.9 4.75)kbps CS RAB + Interactive or Background UL:64 & DL:128kbps PS RAB + UL3.4 & DL:3.4kbps SRB's for DCCH**

See subclause 6.10.3.4.1.38j of [1].

The minimum UE classes supporting this combination are UL: 64 kbps + 48 Configured TFCs, DL: 128 kbps.. The minimum UE class to support the alternative UL configuration is UL: 64kbps plus support for 16 TB per TTI and 48 Configured TFCs.

This is supported in Release '99.

**8.1.67 Conversational / speech / UL:(12.2 7.95 5.9 4.75) kbps DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.**

See subclause 6.10.3.4.1.49a of [1].

The minimum UE classes supporting this combination are UL:64 kbps; DL:64 kbps.

This is supported in Release '99.

**8.1.68 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.**

See subclause 6.10.3.4.1.51a of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release '99.

**8.1.69 Conversational / unknown / UL:64 DL:64 kbps / CS RAB +  
Interactive or Background / UL:16 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH.**

See subclause 6.10.3.4.1.51b of [1].

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps.

This is supported in Release '99.

**8.1.70 Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive  
or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps  
SRBs for DCCH.**

See subclause 6.10.3.4.1.56 of [1].

The minimum UE classes supporting this combination are UL: 32 kbps plus support for 5 AM entities, DL: 32 kbps plus support for 5 AM entities. The minimum UE class to support the alternative UL configuration is UL: 32 kbps plus support for 5 AM mode entities and 8 TB per TTI.

This is supported in Release '99.

**8.1.71 Interactive or background / UL:64 DL:64 kbps / PS RAB +  
Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH.**

See subclause 6.10.3.4.1.57 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM mode entities; DL: 64 kbps plus support for 5 AM mode entities. The minimum UE class to support the alternative UL configuration is UL: 64 kbps plus support for 5 AM mode entities and 16 TB per TTI.

This is supported in Release '99.

**8.1.72 Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or  
background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs  
for DCCH.**

See subclause 6.10.3.4.1.58 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM mode entities; DL: 64 kbps plus support for 5 AM mode entities.

This is supported in Release '99.

**8.1.72a Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or  
background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs  
for DCCH – Alternative**

This configuration optimises the flexibility of the Transport Format Selection by adding an omitted Transport Format, to the transport channel parameters given in the reference subclause 6.10.3.4.1.58 of [1], for the downlink, transport channel Streaming / unknown / DL:64 kbps PS RAB.

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM mode entities; DL: 64 kbps plus support for 5 AM mode entities.

This is supported in Release '99.

## 8.1.72a.1 Uplink

See subclause 6.10.3.4.1.58.1 of [1]

## 8.1.72a.2 Downlink

## 8.1.72a.2.1 Transport channel parameters

## 8.1.72a.2.1.1 Transport channel parameters for Streaming / unknown / DL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	64000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	3x656
		TF4, bits	4x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
	Max number of bits/radio frame before rate matching	2019	
	RM attribute	125-165	

## 8.1.72a.2.1.2 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23.2.1.2 of [1].

## 8.1.72a.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

## 8.1.72a.2.1.4 TFCS

TFCS size	20
TFCS	(64 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF4,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF4,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF4,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1), (TF4,TF1,TF1),

## 8.1.72a.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 6 codes x 1 time slot
	Max. Number of data bits/radio frame	1640 bits
	TFCI code word	16 bits
	Puncturing limit	0.64



### 8.1.73 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.61 of [1].

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 32 kbps.

This is supported in Release '99.

### 8.1.74 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH (Multiframe)

See subclause 6.10.3.4.1.1a of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

### 8.1.75 Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM mode entities; DL: 128kbps.

This is supported in Release '99.

#### 8.1.75.1 Uplink

See subclause 6.10.3.4.1.58.1 of [1]

8.1.75.2 Downlink

8.1.75.2.1 Transport channel parameters

8.1.75.2.1.1 Transport channel parameters for Streaming / unknown / DL:128 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	640	
	Max data rate, bps	128000	
	UM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	3x656
		TF4, bits	4x656
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
	Max number of bits/radio frame before rate matching	4038	
	RM attribute	125-165	

8.1.75.2.1.2 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23.2.1.1 of [1].

8.1.75.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

8.1.75.2.1.4 TFCS

TFCS size	20
TFCS	(128 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF4,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF4,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF4,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1), (TF4,TF1,TF1),

8.1.75.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 5 codes x 2 time slot
	Max. Number of data bits/radio frame	2744 bits
	TFCI code word	16 bits
	Puncturing limit	0.60

8.1.76 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:8 kbps / PS RAB – TF0 contains zero Transport Blocks.

NOTE: Conversational / unknown / DL:8 kbps / PS RAB – TF0 contains zero Transport Blocks.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps.

This is supported in Release '99.

## 8.1.76.1 Uplink

### 8.1.76.1.1 Transport channel parameters

#### 8.1.76.1.1.1 Transport channel parameters for Conversational / unknown / UL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Max number of bits/radio frame before rate matching	261	
	RM attribute	135-175	

#### 8.1.76.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23a.1.1.1 of [1]

#### 8.1.76.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1]

## 8.1.76.1.1.4 TFCS

TFCS size	8 (alt. 12)
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1) (alt. (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1))

## 8.1.76.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF8 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	452 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.68 (alt. 0.64)

## 8.1.76.2 Downlink

## 8.1.76.2.1 Transport channel parameters

## 8.1.76.2.1.1 Transport channel parameters for Conversational / unknown / DL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Max number of bits/radio frame before rate matching	261	
	RM attribute	135-175	

## 8.1.76.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23.2.1.2 of [1].

## 8.1.76.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1]

## 8.1.76.2.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

## 8.1.76.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 3 codes x 1 time slot
	Max. Number of data bits/radio frame	716 bits
	TFCI code word	16 bits
	Puncturing limit	0.96

## 8.1.77 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size.

NOTE: Conversational / unknown / DL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps.

This is supported in Release '99.

## 8.1.77.1 Uplink

## 8.1.77.1.1 Transport channel parameters

## 8.1.77.1.1.1 Transport channel parameters for Conversational / unknown / UL:8 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Max number of bits/radio frame before rate matching	261	
	RM attribute	135-175	

## 8.1.77.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23a.1.1.2 of [1]

8.1.77.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1]

8.1.77.1.1.4 TFCS

TFCS size	8 (alt. 12)
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1) (alt. (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1))

8.1.77.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF8 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	452 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.68 (alt. 0.64)

8.1.77.2 Downlink

8.1.77.2.1 Transport channel parameters

8.1.77.2.1.1 Transport channel parameters for Conversational / unknown / DL:8 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Max number of bits/radio frame before rate matching	261	
	RM attribute	135-175	

8.1.77.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23.2.1.2 of [1].

8.1.77.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1]

## 8.1.77.2.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

## 8.1.77.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 3 codes x 1 time slot
	Max. Number of data bits/radio frame	716 bits
	TFCI code word	16 bits
	Puncturing limit	0.72

### 8.1.78 Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:16 kbps / PS RAB – TF0 contains zero Transport Blocks.

NOTE: Conversational / unknown / DL:16 kbps / PS RAB – TF0 contains zero Transport Blocks.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps.

This is supported in Release '99.

## 8.1.78.1 Uplink

## 8.1.78.1.1 Transport channel parameters

## 8.1.78.1.1.1 Transport channel parameters for Conversational / unknown / UL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Max number of bits/radio frame before rate matching	519	
RM attribute	135-175		

## 8.1.78.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23a.1.1.1 of [1]

8.1.78.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1]

8.1.78.1.1.4 TFCS

TFCS size	12 (alt 18)
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1) (alt ((TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1),(TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF2, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1), (TF2, TF2, TF1))

8.1.78.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF4 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	904 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.96 (alt. 0.92)

8.1.78.2 Downlink

8.1.78.2.1 Transport channel parameters

8.1.78.2.1.1 Transport channel parameters for Conversational / unknown / DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Max number of bits/radio frame before rate matching	519	
	RM attribute	135-175	

8.1.78.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1. 23.2.1.1 of [1]

8.1.78.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1]



## 8.1.78.2.1.4 TFCS

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

## 8.1.78.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 3 codes x 1 time slot
	Max. Number of data bits/radio frame	716 bits
	TFCI code word	16 bits
	Puncturing limit	0.72

### 8.1.79 Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size.

NOTE: Conversational / unknown / DL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration is UL: 64kbps.

This is supported in Release '99.

## 8.1.79.1 Uplink

## 8.1.79.1.1 Transport channel parameters

## 8.1.79.1.1.1 Transport channel parameters for Conversational / unknown / UL:16 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	<b>RAB</b>	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Max number of bits/radio frame before rate matching	519	
	RM attribute	135-175	

8.1.79.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23a.1.1.1 of [1]

8.1.79.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1]

8.1.79.1.1.4 TFCS

TFCS size	12 (alt 18)
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1) (alt. ((TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF1, TF1),(TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF2, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1), (TF2, TF1, TF1))

8.1.79.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF4 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	904bits
	TFC1 code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.96 (alt. 0.92)

8.1.79.2 Downlink

8.1.79.2.1 Transport channel parameters

8.1.79.2.1.1 Transport channel parameters for Conversational / unknown / DL:16 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see subclause 4.2.1.1 in [3]).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Max number of bits/radio frame before rate matching	519	
	RM attribute	135-175	

8.1.79.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23.2.1.1 of [1]

8.1.79.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1]

8.1.79.2.1.4 TFCS

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

8.1.79.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 3 codes x 1 time slot
	Max. Number of data bits/radio frame	716 bits
	TFCI code word	16 bits
	Puncturing limit	0.72

8.1.80 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +  
Interactive or Background / UL:0 DL:0 kbps / PS RAB + Interactive  
or Background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps  
SRBs for DCCH

The minimum UE classes supporting this combination are UL: 32kbps plus support for 5 AM mode entities, DL: 32kbps plus support for 5 AM mode entities.

This is supported in Release '99.

## 8.1.80.1 Uplink

## 8.1.80.1.1 Transport channel parameters

## 8.1.80.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.3.4.1.4.1.1.1 of [1].

## 8.1.80.1.1.2 Transport channel parameters for Interactive or Background / UL:0 + UL:0 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB
RLC	Logical channel type	DTCH	DTCH
	RLC mode	AM	AM
	Payload sizes, bit	320	320
	Max data rate, bps	0	0
	AMD PDU header, bit	16	16
MAC	MAC header, bit	4	4
	MAC multiplexing	2 logical channel multiplexing	
Layer 1	TrCH type	DCH	
	TB sizes, bit	340	
	TFS	TF0, bits	0x340
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	0	
	Max number of bits/radio frame before rate matching	0	
	RM attribute	130-170	

## 8.1.80.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1].

## 8.1.80.1.1.4 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1)

## 8.1.80.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF8 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	452 bits
	TFCl code word	16 bits
	TPC	2 bit
	Puncturing Limit	0.68

## 8.1.80.2 Downlink

## 8.1.80.2.1 Transport channel parameters

## 8.1.80.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.3.4.1.4.2.1.1 of [1].

### 8.1.80.2.1.2 Transport channel parameters for Interactive or Background / DL:0 + DL:0 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB
RLC	Logical channel type	DTCH	DTCH
	RLC mode	AM	AM
	Payload sizes, bit	320	320
	Max data rate, bps	0	0
	AMD PDU header, bit	16	16
MAC	MAC header, bit	4	4
	MAC multiplexing	2 logical channel multiplexing	
Layer 1	TrCH type	DCH	
	TB sizes, bit	340	
	TFS	TF0, bits	0x340
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	0	
	Max number of bits/radio frame before rate matching	0	
	RM attribute	130-170	

### 8.1.80.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

### 8.1.80.2.1.4 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1)

### 8.1.80.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 2 codes x 1 time slot
	Max. Number of data bits/radio frame	472 bits
	TFCI code word	16 bits
	Puncturing limit	0.68

### 8.1.81 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64 kbps.

This is supported in Release '99.

#### 8.1.81.1 Uplink

##### 8.1.81.1.1 Transport channel parameters

###### 8.1.81.1.1.1 Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See subclause 6.10.3.4.1.13.1.1.1 of [1].

8.1.81.1.1.2 Transport channel parameters for Interactive or Background / UL:8 + UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.56.1.1.1 of [1]

8.1.81.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1].

8.1.81.1.1.4 TFCS

TFCS size	8 (alt. 12)
TFCS	(64 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1) (alt. (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1))

8.1.81.1.2 Physical channel parameters

DPCH Uplink	Midamble	256 chips
	Codes and time slots	SF4 x 1 code x 1 time slot SF8 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	1584 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.60(alt. 0.56)

8.1.81.2 Downlink

8.1.81.2.1 Transport channel parameters

8.1.81.2.1.1 Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See subclause 6.10.3.4.1.13.2.1.1 of [1].

8.1.81.2.1.2 Transport channel parameters for Interactive or Background / DL:8 + DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.56.2.1.1 of [1]

8.1.81.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

8.1.81.2.1.4 TFCS

TFCS size	8
TFCS	(64 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

8.1.81.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 6 codes x 1 time slot
	Max. Number of data bits/radio frame	1640 bits
	TFCI code word	16 bits
	Puncturing limit	0.60

## 8.1.82 Streaming / unknown / UL:8 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

### 8.1.82.1 Uplink

#### 8.1.82.1.1 Transport channel parameters

##### 8.1.82.1.1.1 Transport channel parameters for Streaming / unknown / UL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Max number of bits/radio frame before rate matching	267	
RM attribute	135-175		

##### 8.1.82.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.2.23a.1.1.2 of [1]

##### 8.1.82.1.1.3 Transport channel parameters for UL: 3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.2.2.1.1.1 of [1]

## 8.1.82.1.1.4 TFCS

TFCS size	8 (alt 12)
TFCS	(8 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1) (alt. ((TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1))

## 8.1.82.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF8 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	452 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.64

## 8.1.82.2 Downlink

## 8.1.82.2.1 Transport channel parameters

## 8.1.82.2.1.1 Transport channel parameters for Streaming / unknown / DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	16000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2028	
	Max number of bits/radio frame before rate matching	507	
	RM attribute	125-165	

## 8.1.82.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.2.23.2.1.2 of [1]

## 8.1.82.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.2.2.2.1.1 of [1]



## 8.1.82.2.1.4 TFCS

TFCS size	8
TFCS	(16 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

## 8.1.82.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 2 codes x 1 time slot
	Max. Number of data bits/radio frame	472 bits
	TFCI code word	16 bits
	Puncturing limit	0.48

## 8.1.83 Streaming / unknown / UL:8 DL:32 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release '99.

## 8.1.83.1 Uplink

## 8.1.83.1.1 Transport channel parameters

## 8.1.83.1.1.1 Transport channel parameters for Streaming / unknown / UL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Max number of bits/radio frame before rate matching	267	
	RM attribute	135-175	

## 8.1.83.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.2.23a.1.1.2 of [1]

## 8.1.83.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.2.2.1.1.1 of [1]

## 8.1.83.1.1.4 TFCS

TFCS size	8 (alt. 12)
TFCS	(8 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1) (alt (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1),(TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1))

## 8.1.83.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF8 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	452 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.64

## 8.1.83.2 Downlink

## 8.1.83.2.1 Transport channel parameters

## 8.1.83.2.1.1 Transport channel parameters for Streaming / unknown / DL: 32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	32000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4044	
	Max number of bits/radio frame before rate matching	1011	
RM attribute	125-165		

## 8.1.83.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.2.23.2.1.2 of [1]

## 8.1.83.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.2.2.2.1.1 of [1]

## 8.1.83.2.1.4 TFCS

TFCS size	12
TFCS	(32 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

## 8.1.83.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 5 codes x 1 time slot
	Max. Number of data bits/radio frame	1204 bits
	TFCI code word	16 bits
	Puncturing limit	0.80

## 8.1.84 Streaming / unknown / UL:32 DL:256 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps.

This is supported in Release '99.

## 8.1.84.1 Uplink

## 8.1.84.1.1 Transport channel parameters

## 8.1.84.1.1.1 Transport channel parameters for Streaming / unknown / UL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	32000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2124	
	Max number of bits/radio frame before rate matching	1062	
RM attribute	135-175		

## 8.1.84.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23a.1.1.1 of [1]

## 8.1.84.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1]

8.1.84.1.1.4 TFCS

TFCS size	12 (alt 18)
TFCS	(32 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1) (alt. ((TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0) (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0) (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF2, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1), (TF2, TF2, TF1))

8.1.84.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF4 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	904 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.60

8.1.84.2 Downlink

8.1.84.2.1 Transport channel parameters

8.1.84.2.1.1 Transport channel parameters for Streaming / unknown / DL:256 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	256000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	3x656
		TF4, bits	4x656
	TTI, ms	10	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
	Max number of bits/radio frame before rate matching	8076	
RM attribute	125-165		

8.1.84.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1. 23.2.1.2 of [1]

8.1.84.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1]

## 8.1.84.2.1.4 TFCS

TFCS size	20
TFCS	(256 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)=  (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF4,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF4,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF4,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1), (TF4,TF1,TF1),

## 8.1.84.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 5 codes x 4 time slots
	Max. Number of data bits/radio frame	5504 bits
	TFCI code word	16 bits
	Puncturing limit	0.64

### 8.1.85 Interactive or background / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

## 8.1.85.1 Uplink

## 8.1.85.1.1 Transport channel parameters

## 8.1.85.1.1.1 Transport channel parameters for Interactive or Background / UL:16 + UL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320 (alt 128)	320 (alt 128)	
	Max data rate, bps	16000	16000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340 (alt 0x148)	
		TF1, bits	1x340 (alt 1x148)	
		TF2, bits	2x340 (alt 5x148)	
	TTI, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	2148 (alt 2472)		
	Max number of bits/radio frame before rate matching	537 (alt 618)		
RM attribute	135-175			

## 8.1.85.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1]

## 8.1.85.1.1.3 TFCS

TFCS size	6
TFCS	(16 kbps RAB + 16 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)

## 8.1.85.1.2 Physical channel parameters

DPCH Uplink	Midamble	512 chips
	Codes and time slots	SF8 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	452 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.64 (alt. 0.60)

## 8.1.85.2 Downlink

## 8.1.85.2.1 Transport channel parameters

## 8.1.85.2.1.1 Transport channel parameters for Interactive or background / DL:16 + DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	16000	16000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
	TTI, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	2148		
	Max number of bits/radio frame before rate matching	537		
RM attribute	135-175			

## 8.1.85.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1]

## 8.1.85.2.1.3 TFCS

TFCS size	6
TFCS	(16 kbps RAB + 16 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)

## 8.1.85.2.2 Physical channel parameters

DPCH Downlink	Midamble	512 chips
	Codes and time slots	SF16 x 2 codes x 1 time slot
	Max. Number of data bits/radio frame	472 bits
	TFCI code word	16 bits
	Puncturing limit	0.68

### 8.1.86 Interactive or background / UL:64 DL:8 kbps / PS RAB + Interactive or Background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM entities, DL: 32 kbps plus support for 5 AM entities.

This is supported in Release '99.

#### 8.1.86.1 Uplink

See subclause 6.10.3.4.1.57.1 of [1]

#### 8.1.86.2 Downlink

See subclause 6.10.3.4.1.56.2 of [1]

### 8.1.87 Interactive or Background / UL:64 DL:128 kbps / PS RAB + Interactive or Background / UL:64 DL:128 kbps / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM entities, DL: 128kbps.

This is supported in Release '99.

#### 8.1.87.1 Uplink

See subclause 6.10.3.4.1.57.1 of [1].

## 8.1.87.2 Downlink

## 8.1.87.2.1 Transport channel parameters

## 8.1.87.2.1.1 Transport channel parameters for Interactive or background / DL:128 + DL:128 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	8556		
	Max number of bits/radio frame before rate matching	4278		
	RM attribute	120-160		

## 8.1.87.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

## 8.1.87.2.1.3 TFCS

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF3,TF0), (TF4,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF3,TF1), (TF4,TF1)

## 8.1.87.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 9 codes x 1 time slot
	Max. Number of data bits/radio frame	2468 bits
	TFCI code word	16 bits
	Puncturing limit	0.52

8.1.88 Interactive or Background / UL:64 DL:384 kbps / PS RAB +  
Interactive or Background / UL:64 DL:384 kbps / PS RAB + UL:3.4  
DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps.

This is supported in Release '99.

## 8.1.88.1 Uplink

See subclause 6.10.3.4.1.57.1 of [1].



## 8.1.88.2 Downlink

## 8.1.88.2.1 Transport channel parameters

## 8.1.88.2.1.1 Transport channel parameters for Interactive or background / DL:384 + DL:384 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	384000	384000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
		TF5, bits	12x340	
	TTI, ms	10		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	12828		
	Max number of bits/radio frame before rate matching	12828		
RM attribute	110-150			

## 8.1.88.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

## 8.1.88.2.1.3 TFCS

TFCS size	12
TFCS	(384 kbps RAB + 384 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1)

## 8.1.88.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 9 codes x 3 time slots
	Max. Number of data bits/radio frame	7436 bits
	TFCI code word	16 bits
	Puncturing limit	0.56

## 8.1.89 Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or Background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps, DL: 128kbps. The minimum UE class to support the alternative UL configuration (128-bit payload size) is UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

This is supported in Release '99.

## 8.1.89.1 Uplink

## 8.1.89.1.1 Transport channel parameters

## 8.1.89.1.1.1 Transport channel parameters for Interactive or Background / UL:128 + UL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320 (alt. 128)	320 (alt. 128)	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340 (alt. 148)		
	TFS	TF0, bits	0x340 (alt. 0x148)	
		TF1, bits	1x340 (alt. 1x148)	
		TF2, bits	2x340 (alt. 7x148)	
		TF3, bits	4x340 (alt. 14x148)	
		TF4, bits	8x340 (alt. 20x148)	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	8556 (alt. 9852)		
	Max number of bits/radio frame before rate matching	4278 (alt. 4926)		
RM attribute	120-160			

## 8.1.89.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1].

## 8.1.89.1.1.3 TFCS

TFCS size	9 (alt. 10)
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1) (alt (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1))

## 8.1.89.1.2 Physical channel parameters

DPCH Uplink	Midamble	256 chips
	Codes and time slots	SF2 x 1 code x 1 time slot+ SF4 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	3168 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.68(alt. 0.60)

## 8.1.89.2 Downlink

## 8.1.89.2.1 Transport channel parameters

## 8.1.89.2.1.1 Transport channel parameters for Interactive or background / DL:128 + DL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	8556		
Max number of bits/radio frame before rate matching	4278			
RM attribute	120-160			

## 8.1.89.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

## 8.1.89.2.1.3 TFCS

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH)= (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF3,TF0), (TF4,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF3,TF1), (TF4,TF1)

## 8.1.89.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 5 codes x 2 time slots
	Max. Number of data bits/radio frame	2744 bits
	TFCI code word	16 bits
	Puncturing limit	0.60

### 8.1.90 Interactive or background / UL:128 DL:32 kbps / PS RAB + Interactive or Background / UL:128 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128kbps, DL: 32kbps. The minimum UE class to support the alternative UL configuration (128-bit payload size) is UL: 128kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

This is supported in Release '99.

## 8.1.90.1 Uplink

See subclause 8.1.89.1 of [1].

## 8.1.90.2 Downlink

## 8.1.90.2.1 Transport channel parameters

## 8.1.90.2.1.1 Transport channel parameters for Interactive or background / DL:32 + DL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	32000	32000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	3x340	
		TF4, bits	4x340	
	TTI, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	4284		
	Max number of bits/radio frame before rate matching	1071		
RM attribute	135-175			

## 8.1.90.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

## 8.1.90.2.1.3 TFCS

TFCS size	10
TFCS	(32 kbps RAB + 32 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

## 8.1.90.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 3 codes x 1 time slot
	Max. Number of data bits/radio frame	812 bits
	TFCI code word	16 bits
	Puncturing limit	0.64

## 8.1.91 Streaming / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM entities, DL: 64 kbps.

This is supported in Release '99.

## 8.1.91.1 Uplink

See subclause 6.10.3.4.1.58.1 of [1].

### 8.1.91.2 Downlink

See subclause 8.1.82.2 of [1].

### 8.1.92 Streaming / unknown / UL:16 DL:32 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 5 AM entities, DL: 64 kbps.

This is supported in Release '99.

#### 8.1.92.1 Uplink

See subclause 6.10.3.4.1.58.1 of [1].

#### 8.1.92.2 Downlink

See subclause 8.1.83.2 of [1].

### 8.1.93 Interactive or background / UL:16 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI.

This is supported in Release '99.

#### 8.1.93.1 Uplink

See subclause 6.10.3.4.1.23b.1 of [1].

#### 8.1.93.2 Downlink

See subclause 6.10.3.4.1.23c.2 of [1].

### 8.1.94 Interactive or background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 64 kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI.

This is supported in Release '99.

#### 8.1.94.1 Uplink

See subclause 6.10.3.4.1.23b.1 of [1].

#### 8.1.94.2 Downlink

See subclause 6.10.3.4.1.25.2 of [1].

### 8.1.95 Interactive or background / UL:16 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps, DL: 128 kbps. The minimum UE class to support the alternative UL configuration is UL: 32kbps plus support for 8 TB/TTI.

This is supported in Release '99.

#### 8.1.95.1 Uplink

See subclause 6.10.3.4.1.23b.1 of [1].

#### 8.1.95.2 Downlink

See subclause 6.10.3.4.1.27.2 of [1].

### 8.1.96 Conversational / speech / UL:12.2 DL:12.2 kbps + Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 64 kbps plus support for 16 TB/TTI, DL: 128 kbps.

This is supported in release '99.

#### 8.1.96.1 Uplink

##### 8.1.96.1.1 Transport channel parameters

###### 8.1.96.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.3.4.1.4.1.1.1 of [1].

###### 8.1.96.1.1.2 Transport channel parameters for Streaming / unknown / UL:16 kbps

See subclause 6.10.3.4.1.58.1.1.1 of [1].

###### 8.1.96.1.1.3 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23a.1.1.1 of [1].

###### 8.1.96.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1].

8.1.96.1.1.5 TFCS

TFCS size	24 (alt. 36)
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 16 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (alt (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF0,TF2,TF0), (TF2,TF1,TF1,TF0,TF2,TF0), (TF0,TF0,TF0,TF1,TF2,TF0), (TF1,TF0,TF0,TF1,TF2,TF0), (TF2,TF1,TF1,TF1,TF2,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF0,TF2,TF1), (TF2,TF1,TF1,TF0,TF2,TF1), (TF0,TF0,TF0,TF1,TF2,TF1), (TF1,TF0,TF0,TF1,TF2,TF1), (TF2,TF1,TF1,TF1,TF2,TF1))

8.1.96.1.2 Physical channel parameters

DPCH Uplink	Midamble	256 chips
	Codes and time slots	SF4 x 1 code x 1 time slot + SF16 x 1 code x 1 time slot
	Max. Number of data bits/radio frame	1308 bits (alt. 1244 bits)
	TFCI code word	16 bits (alt. 32 bits)
	TPC	2 bits
	Puncturing Limit	0.88 (alt. 0.84))

8.1.96.2 Downlink

8.1.96.2.1 Transport channel parameters

8.1.96.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.3.4.1.4.2.1.1 of [1]

8.1.96.2.1.2 Transport channel parameters for Streaming / unknown / DL:128 kbps / PS RAB

See subclause 8.1.75.2.1.1 of [1].

8.1.96.2.1.3 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23.2.1.1 of [1].

8.1.96.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].



8.1.96.2.1.5 TFCS

TFCS size	48
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0), (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0), (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1), (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1), (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1), (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1)

8.1.96.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 6 codes x 2 time slots
	Max. Number of data bits/radio frame	3280 bits
	TFCI code word	32 bits
	Puncturing limit	0,64

8.1.97 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:128 DL:16 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are UL: 128 kbps plus support for 16 TB/TTI, DL: 64 kbps.

This is supported in release '99.

8.1.97.1 Uplink

8.1.97.1.1 Transport channel parameters

8.1.97.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See subclause 6.10.3.4.1.4.1.1.1 of [1]

## 8.1.97.1.1.2 Transport channel parameters for Streaming / unknown / UL:128 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	128000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	4x656
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
	Max number of bits/radio frame before rate matching	4038	
RM attribute	125-165		

## 8.1.97.1.1.3 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23a.1.1.1 of [1].

## 8.1.97.1.1.4 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.1.1.1 of [1].

8.1.97.1.1.5 TFCS

TFCS size	48 (alt. 72)
TFCS	<p>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, 8 kbps RAB, DCCH)=                  (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0),                  (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0),                  (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0),                  (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0),                  (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0),                  (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0),                  (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0),                  (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1),                  (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1),                  (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF2,TF0,TF1),                  (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1),                  (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1),                  (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1),                  (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1),                  (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1),                  (alt. (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0),                  (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0),                  (TF0,TF0,TF0,TF2,TF0,TF0), (TF1,TF0,TF0,TF2,TF0,TF0), (TF2,TF1,TF1,TF2,TF0,TF0),                  (TF0,TF0,TF0,TF3,TF0,TF0), (TF1,TF0,TF0,TF3,TF0,TF0), (TF2,TF1,TF1,TF3,TF0,TF0),                  (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0),                  (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0),                  (TF0,TF0,TF0,TF2,TF1,TF0), (TF1,TF0,TF0,TF2,TF1,TF0), (TF2,TF1,TF1,TF2,TF1,TF0),                  (TF0,TF0,TF0,TF3,TF1,TF0), (TF1,TF0,TF0,TF3,TF1,TF0), (TF2,TF1,TF1,TF3,TF1,TF0),                  (TF0,TF0,TF0,TF0,TF2,TF0), (TF1,TF0,TF0,TF0,TF2,TF0), (TF2,TF1,TF1,TF0,TF2,TF0),                  (TF0,TF0,TF0,TF1,TF2,TF0), (TF1,TF0,TF0,TF1,TF2,TF0), (TF2,TF1,TF1,TF1,TF2,TF0),                  (TF0,TF0,TF0,TF2,TF2,TF0), (TF1,TF0,TF0,TF2,TF2,TF0), (TF2,TF1,TF1,TF2,TF2,TF0),                  (TF0,TF0,TF0,TF3,TF2,TF0), (TF1,TF0,TF0,TF3,TF2,TF0), (TF2,TF1,TF1,TF3,TF2,TF0),                  (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1),                  (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1),                  (TF0,TF0,TF0,TF2,TF0,TF1), (TF1,TF0,TF0,TF2,TF0,TF1), (TF2,TF1,TF1,TF1,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF0,TF1), (TF1,TF0,TF0,TF3,TF0,TF1), (TF2,TF1,TF1,TF3,TF0,TF1),                  (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1),                  (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1),                  (TF0,TF0,TF0,TF2,TF1,TF1), (TF1,TF0,TF0,TF2,TF1,TF1), (TF2,TF1,TF1,TF2,TF1,TF1),                  (TF0,TF0,TF0,TF3,TF1,TF1), (TF1,TF0,TF0,TF3,TF1,TF1), (TF2,TF1,TF1,TF3,TF1,TF1),                  (TF0,TF0,TF0,TF0,TF2,TF1), (TF1,TF0,TF0,TF0,TF2,TF1), (TF2,TF1,TF1,TF0,TF2,TF1),                  (TF0,TF0,TF0,TF1,TF2,TF1), (TF1,TF0,TF0,TF1,TF2,TF1), (TF2,TF1,TF1,TF1,TF2,TF1),                  (TF0,TF0,TF0,TF2,TF2,TF1), (TF1,TF0,TF0,TF2,TF2,TF1), (TF2,TF1,TF1,TF2,TF2,TF1),                  (TF0,TF0,TF0,TF3,TF2,TF1), (TF1,TF0,TF0,TF3,TF2,TF1), (TF2,TF1,TF1,TF3,TF2,TF1))</p>

8.1.97.1.2 Physical channel parameters

DPCH Uplink	Midamble	256 chips
	Codes and time slots	{SF2 x 1 code x 1 timeslot} + {SF4 x 1 code x 1 timeslot}
	Max. Number of data bits/radio frame	3040 bits
	TFCI code word	32 bits
	TPC	2
	Puncturing limit	0.60

8.1.97.2 Downlink

8.1.97.2.1 Transport channel parameters

8.1.97.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See subclause 6.10.3.4.1.4.2.1.1 of [1].

8.1.97.2.1.2 Transport channel parameters for Streaming / unknown / DL:16 kbps / PS RAB

See subclause 8.1.82.2.1.1 of [1].

8.1.97.2.1.3 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See subclause 6.10.3.4.1.23.2.1.1 of [1].

8.1.97.2.1.4 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2.2.1.1 of [1].

8.1.97.2.1.5 TFCS

TFCS size	24
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 16 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0,TF0), (TF0,TF0,TF0,TF1,TF0,TF0), (TF1,TF0,TF0,TF1,TF0,TF0), (TF2,TF1,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1,TF0), (TF1,TF0,TF0,TF0,TF1,TF0), (TF2,TF1,TF1,TF0,TF1,TF0), (TF0,TF0,TF0,TF1,TF1,TF0), (TF1,TF0,TF0,TF1,TF1,TF0), (TF2,TF1,TF1,TF1,TF1,TF0), (TF0,TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF0,TF1), (TF0,TF0,TF0,TF1,TF0,TF1), (TF1,TF0,TF0,TF1,TF0,TF1), (TF2,TF1,TF1,TF1,TF0,TF1), (TF0,TF0,TF0,TF0,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF0,TF1,TF1), (TF2,TF1,TF1,TF0,TF1,TF1), (TF0,TF0,TF0,TF1,TF1,TF1), (TF1,TF0,TF0,TF1,TF1,TF1), (TF2,TF1,TF1,TF1,TF1,TF1)

8.1.97.2.2 Physical channel parameters

DPCH Downlink	Midamble	256 chips
	Codes and time slots	SF16 x 3 codes x 1 time slot
	Max. Number of data bits/radio frame	812 bits
	TFCI code word	16 bits
	Puncturing limit	0.52

8.2 Combinations on PDSCH, SCCH, PUSCH and PRACH

8.2.1 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.10.3.4.2.1 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps , DL: 384kbps.

This is supported in Release '99.

8.2.2 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.10.3.4.2.2 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 384kbps. The minimum UE class to support the alternative DL configuration is DL: 768kbps.

This is supported in Release '99.

8.2.3 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.10.3.4.2.3 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 2048kbps The minimum UE class to support the alternative DL configuration is DL: 2048kbps plus support maximum TB bits 81920, and TB TC bits 81920.

This is supported in Release '99.

#### 8.2.4 Interactive or background / UL: 384 DL: 2048 kbps / PS RAB + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH

See subclause 6.10.3.4.2.4 of [1].

The minimum UE classes supporting this combination are UL: 384kbps plus support of SF1, DL: 2048kbps. The minimum UE class to support the alternative DL configuration is DL: 2048kbps plus support maximum TB bits 81920, and TB TC bits 81920. The minimum UE class to support the alternative UL configuration is UL: 384kbps plus support for 64 TB/TTI and support of SF1.

This is supported in Release '99.

### 8.3 Combinations on PDSCH, SCCPCH, DPCH, PUSCH and PRACH

#### 8.3.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.10.3.4.3.1 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 384kbps. The minimum UE class to support the alternative DL configuration is DL: 768kps.

NOTE: It is assumed that the DPCH DL, PDSCH and SCCPCH use different TS.

This is supported in Release '99.

#### 8.3.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.10.3.4.3.2 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 384kbps. The minimum UE class to support the alternative DL configuration is DL: 768kps.

NOTE: It is assumed that the DPCH DL, PDSCH and SCCPCH use different TS.

This is supported in Release '99.

### 8.3.3 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.10.3.4.3.3 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 2048kbps plus support for maximum TB bits 81920, maximum TC TB bits 81920.

This is supported in Release '99.

## 8.4 Combinations on SCCPCH

### 8.4.1 Stand – alone signalling RB for PCCH

See subclause 6.10.3.4.4.1 of [1].

The minimum UE class supporting this combination is DL: 32 kbps. This is supported in Release '99

### 8.4.2 Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.3.4.4.2 of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

### 8.4.3 Interactive / Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.3.4.4.3 of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

### 8.4.4 Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.3.4.4.2a of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

### 8.4.5 SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.3.4.4.2b of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

## 8.4.6 SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.3.4.4.3a of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

## 8.4.7 RB for CTCH + SRB for CCCH + SRB for BCCH

See subclause 6.10.3.4.4.4 of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99.

## 8.5 Combinations on PRACH

### 8.5.1 SRB for CCCH + SRB for DCCH

See subclause 6.10.3.4.5.1 of [1].

The minimum UE class supporting this combination is UL: 32 kbps. This is supported by Release '99.

### 8.5.2 Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRB for DCCH

See subclause 6.10.3.4.5.2 of [1].

The minimum UE class supporting this combination is UL: 32 kbps. This is supported by Release '99.

### 8.5.3 Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRB for DCCH

See subclause 6.10.3.4.5.3 of [1].

The minimum UE class supporting this combination is UL: 32 kbps. This is supported by Release '99.

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## 9 Examples of Radio Bearers and Signalling Radio Bearers for 1.28 Mcps TDD

### 9.1 Combinations on DPCH

#### 9.1.1 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.11.5.4.1.1 of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

#### 9.1.1a Stand-alone UL: 1.7 DL: 1.7 kbps SRBs for DCCH (multiframe)

See subclause 6.11.5.4.11a of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

### 9.1.2 Stand-alone UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.2 of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

### 9.1.3 Stand-alone UL: 13.6 DL: 13.6 kbps SRBs for DCCH

See subclause 6.11.5.4.1.3 of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

### 9.1.4 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.4 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

### 9.1.4a Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2 kbps, 7.95, 5.9, 4.75) / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.4a of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

### 9.1.5 Conversational / speech / UL: 10.2 DL: 10.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.5 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

### 9.1.5a Conversational / speech / UL: (10.2, 6.7, 5.9, 4.75) DL: (10.2, 6.7, 5.9, 4.75) kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.5a of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.



**9.1.6 Conversational / speech / UL: 7.95 DL: 7.95 kbps / CS RAB + UL:  
3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.6 of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

**9.1.7 Conversational / speech / UL: 7.4 DL: 7.4 kbps / CS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.7 of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

**9.1.7a Conversational / speech / UL: (7.4, 6.7, 5.9, 4.75) DL: (7.4, 6.7, 5.9,  
4.75) kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.7a of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

**9.1.8 Conversational / speech / UL: 6.7 DL: 6.7 kbps / CS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.8 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

**9.1.9 Conversational / speech / UL: 5.9 DL: 5.9 kbps / CS rab + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.9 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

**9.1.10 Conversational / speech / UL: 5.15 DL: 5.15 kbps / CS RAB + UL:  
1.7 DL: 1.7 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.10 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

**9.1.11 Conversational / speech / UL: 4.75 DL: 4.75 kbps / CS RAB + UL:  
1.7 DL: 1.7 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.11 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

#### **9.1.12 Conversational / unknown / UL: 28.8 DL: 28.8 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.12 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

#### **9.1.13 Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.13 of [1].

The minimum UE classes supporting this combination are UL: 64kbps, DL: 64kbps.

This is supported in Release 4.

#### **9.1.14 Conversational / unknown / UL: 32 DL: 32 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.14 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

#### **9.1.15 Streaming / unknown / UL: 14.4 DL: 14.4 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.15 of [1].

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

#### **9.1.16 Streaming / unknown / UL: 28.8 DL: 28.8 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.16 of [1].

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

#### **9.1.17 Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.17 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 32kbps.

This is supported in Release 4.

**9.1.18 Void**

Void

**9.1.19 Void**

Void

**9.1.20 Void**

Void.

**9.1.21 Void**

Void.

**9.1.22 Void**

Void.

**9.1.23 Interactive or background / UL: 32 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.23 of [1].

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 32kbps.

This is supported in Release 4.

**9.1.23a Interactive or background / UL: 8DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.23a of [1].

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 32kbps.

This is supported in Release 4.

**9.1.23b Interactive or background / UL: 16 DL: 16 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.23b of [1].

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 32kbps.

This is supported in Release 4.

**9.1.23c Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH**

See subclause 6.11.5.4.1.23c of [1].

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 32kbps.

This is supported in Release 4.

### 9.1.23d Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH (20 ms TTI)

See subclause 6.11.5.4.1.23d of [1].

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 32kbps.

This is supported in Release 4.

### 9.1.24 Void

Void.

### 9.1.25 Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.25 of [1].

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 64 kbps.

This is supported in Release 4.

### 9.1.26 Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.26 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 64 kbps.

This is supported in Release 4.

### 9.1.27 Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.27 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128kbps.

This is supported in Release 4.

### 9.1.28 Interactive or background / UL: 128 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.28 of [1].

The minimum UE classes supporting this combination are UL: 128kbps; DL: 128kbps.

This is supported in Release 4.

### 9.1.29 Interactive or background / UL: 64 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.29 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128kbps.

This is supported in Release 4.

### 9.1.30 Interactive or background / UL: 144 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.30 of [1].

The minimum UE classes supporting this combination are UL: 128 kbps; DL: 128kbps.

This is supported in Release 4.

### 9.1.31 Interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.31 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 384 kbps.

This is supported in Release 4.

### 9.1.32 Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.32 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 384 kbps.

This is supported in Release 4.

### 9.1.33 Interactive or background / UL: 128 DL: 384 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.33 of [1].

The minimum UE classes supporting this combination are UL: 128 kbps; DL: 384 kbps.

This is supported in Release 4.

### 9.1.34 Interactive or background / UL: 384 DL: 384 kbps / PS RAB +UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.34 of [1].

The minimum UE classes supporting this combination are UL: 384 kbps; DL: 384kbps.

This is supported in Release 4.

### 9.1.35 Interactive or background / UL: 64 DL: 2048 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.35 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 2048kbps.

This is supported in Release 4.

### 9.1.36 Void

Void.

### 9.1.37 Void

Void.

### 9.1.38 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 32 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32kbps.

This is supported in Release 4.

### 9.1.38a Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 0 DL: 0 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38a of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32kbps

This is supported in Release 4.

### 9.1.38b Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38b of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps

This is supported in Release 4.

### 9.1.38c Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38c of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps

This is supported in Release 4.

### 9.1.38d Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38d of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps

This is supported in Release 4.

**9.1.38e** Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 0 DL: 0 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38e of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps

This is supported in Release 4.

**9.1.38f** Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38f of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps

This is supported in Release 4.

**9.1.38g** Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 16 DL: 16 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38g of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps

This is supported in Release 4.

**9.1.38h** Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 32 DL: 32 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38h of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 32 kbps

This is supported in Release 4.

**9.1.38i** Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38i of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps

This is supported in Release 4.

**9.1.38j** Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95, 5.9, 4.75) kbps / CS RAB + Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.38j of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 128 kbps

This is supported in Release 4.

**9.1.39** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.39 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64kbps.

This is supported in Release 4.

**9.1.40** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.40 of [1].

The minimum UE classes supporting this combination are UL: 64kbps; DL: 64 kbps.

This is supported in Release 4.

**9.1.41** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.41 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 128 kbps.

This is supported in Release 4.

**9.1.42** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.42 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 384 kbps..

This is supported in Release 4.

**9.1.43** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.43 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 384 kbps.

This is supported in Release 4.



**9.1.44** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Interactive or background / UL: 128 DL: 2048 kbps / PS RAB + UL:  
3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.44 of [1].

The minimum UE classes supporting this combination are UL: 384 kbps; DL: 2048 kbps.

This is supported in Release 4.

**9.1.45** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.45 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps.

This is supported in Release 4.

**9.1.46** Void

Void.

**9.1.47** Void

Void.

**9.1.48** Void

Void.

**9.1.49** Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB +  
Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.49 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps.

This is supported in Release 4.

**9.1.49a** Conversational / speech / UL: (12.2, 7.95, 5.9, 4.75) DL: (12.2, 7.95,  
5.9, 4.75) kbps / CS RAB + Conversational / unknown / UL: 64 DL:  
64 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.49 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps ; DL: 64 kbps.

This is supported in Release 4.

**9.1.50** Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB +  
Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.50 of [1].

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 128 kbps.

This is supported in Release 4.

**9.1.51** Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB +  
Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.51 of [1].

The minimum UE classes for this combinations are UL: 64 kbps; DL: 128 kbps.

This is supported in Release 4.

**9.1.51a** Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB +  
Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL: 3.4 DL:  
3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.51a of [1].

The minimum UE classes for this combinations are UL: 64 kbps ; DL: 64 kbps.

This is supported in Release 4.

**9.1.51b** Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB +  
Interactive or background / UL: 16 DL: 64 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.51b of [1].

The minimum UE classes for this combinations are UL: 64 kbps ; DL: 128 kbps.

This is supported in Release 4.

**9.1.52** Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB +  
Interactive or background / UL: 64 DL: 128 kbps / PS RAB + UL: 3.4  
DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.52 of [1].

The minimum UE classes for this combination are UL: 64 kbps; DL: 384 kbps.

This is supported in Release 4.

**9.1.53** Conversational / unknown / UL: 64 DL: 64 kbps / CS RAB +  
Interactive or background / UL: 128 DL: 128 kbps / PS RAB + UL:  
3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.53 of [1].

The minimum UE classes for this combination are UL: 384 kbps; DL: 384 kbps.

This is supported in Release 4.

#### 9.1.54 Void

Void.

#### 9.1.55 Void

Void.

#### 9.1.56 Interactive or background / UL: 8 DL: 8 kbps / PS RAB + Interactive or background / UL: 8 DL: 8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.56 of [1].

The minimum UE classes for this combination are UL: 32 kbps, DL: 32 kbps.

This is supported in Release 4.

#### 9.1.57 Interactive or background / UL: 64 DL: 64 kbps / PS RAB + Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.57 of [1].

The minimum UE classes for this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 4.

#### 9.1.58 Streaming / Unknown / UL: 16 DL: 64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.58 of [1].

The minimum UE classes for this combination are UL: 64 kbps, DL: 64 kbps.

This is supported in Release 4.

#### 9.1.59 Reserved for future use

#### 9.1.60 Reserved for future use

#### 9.1.61 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.561 of [1].

The minimum UE classes for this combination are UL: 32 kbps, DL: 32 kbps.

This is supported in Release 4.

## 9.2 Combinations on PDSCH, SCCH, PUSCH and PRACH

- 9.2.1 Interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH

See subclause 6.11.5.4.2.1 of [1].

The minimum UE classes supporting this combination are UL: 128kbs; DL: 384kbs.

This is supported in Release 4.

- 9.2.2 Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH

See subclause 6.11.5.4.2.2 of [1].

The minimum UE classes supporting this combination are UL: 128kbs, DL: 384kbs.

This is supported in Release 4.

- 9.2.3 Interactive or background / UL: 64 DL: 2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + UL: 16.8 DL: 33.6 kbps SRBs for DCCH, CCCH and BCCH + UL: 16.8 DL: 16 kbps SRBs for SHCCH

See subclause 6.11.5.4.2.3 of [1].

The minimum UE classes supporting this combination are UL: 128kbs, DL: 2Mbps.

This is supported in Release 4.

## 9.3 Combinations on PDSCH, SCCPCH, DPCH, PUSCH and PRACH

- 9.3.1 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH + interactive or background / UL: 64 DL: 256 kbps / PS RAB + UL: 16.8 kbps SRBs for CCCH and SHCCH + DL: 33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.11.5.4.3.1 of [1].

The minimum UE classes supporting this combination are UL: 128kbs; DL: 384kbs.

This is supported in Release 4.

- 9.3.2 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH + Interactive or background / UL: 64 DL: 384 kbps / PS RAB + UL: 16.8 kbps SRBs for CCCH and SHCCH + DL: 33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.11.5.4.3.2 of [1].

The minimum UE classes supporting this combination are UL: 128kbps; DL: 384kbps.

This is supported in Release 4.

### 9.3.3 Conversational / speech / UL: 12.2 DL: 12.2 kbps / CS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH + Interactive or background / UL: 64 DL: 2048 kbps / PS RAB + UL: 16.8 kbps SRBs for CCCH and SHCCH + DL: 33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.11.5.4.3.3 of [1].

The minimum UE classes supporting this combination are UL: 128kbps; DL: 2048kbps.

This is supported in Release 4.

## 9.4 Combinations on SCCPCH

### 9.4.1 Stand – alone signalling RB for PCCH

See subclause 6.11.5.4.4.1 of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release 4.

### 9.4.2 Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.11.5.4.4.2 of [1].

The minimum UE class supporting this combination is DL: 64 kbps.

This is supported in Release 4.

### 9.4.2a Interactive / Background 32 kbps PS RAB + Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.11.5.4.4.2a of [1].

The minimum UE class supporting this combination is DL: 64 kbps.

This is supported in Release 4.

### 9.4.2b SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.11.5.4.4.2b of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release 4.

### 9.4.3 Interactive / Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.11.5.4.4.3 of [1].

The minimum UE class supporting this combination is DL: 64 kbps..

This is supported in Release 4.

### 9.4.3a SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.11.5.4.4.3a of [1].

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release 4.

### 9.4.4 RB for CTCH + SRB for CCCH + SRB for BCCH

See subclause 6.11.5.4.4.4 of [1].

The minimum UE class supporting this combination is DL: 64 kbps..

This is supported in Release 4.

## 9.5 Combinations on PRACH

### 9.5.1 SRB for CCCH + SRB for DCCH

See subclause 6.11.5.4.5.1 of [1].

The minimum UE class supporting this combination is UL: 32 kbps.

This is supported in Release 4.

### 9.5.2 Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRBs for DCCH

See subclause 6.11.5.4.5.2 of [1].

The minimum UE class supporting this combination is UL: 32 kbps..

This is supported in Release 4.

### 9.5.3 Interactive/Background 12.8 kbps PS RAB + Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRBs for DCCH

See subclause 6.11.5.4.5.3 of [1].

The minimum UE class supporting this combination is UL: 32 kbps.

This is supported in Release 4.

## 9.6 Radio Bearer and Radio Bearer Combinations on DPCH and HS-PDSCH

In the following tables for the references to [1], the details of the configuration are defined there.

9.6.1 Interactive or background / UL:8 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

9.6.1.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.11.5.4.1.23a.1 of [1]			
TFCS				
Physical Channel				

9.6.1.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.11.5.4.6.1.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.11.5.4.6.1.2.2.2 of [1]	6.11.5.4.1.2.2.2 of [1]	

9.6.1a Interactive or background / UL:8 (multiframe) DL: [max bit rate depending on UE category] / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH (multiframe) (REL-5)

9.6.1a.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.11.5.4.6.1a.1.1.1 of [1]		6.11.5.4.1.2a.1.1.1 of [1]	
TFCS	6.10.3.4.1.23d.1.1.3 of [1]			
Physical Channel	6.11.5.4.6.1a.1.2 of [1]		6.11.5.4.6.1a.1.2 of [1]	

9.6.1a.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer	Signalling Radio Bearer

			on DPCH	on HS-PDSCH
Transport Channel		6.11.5.4.6.1.2.1.1 of [1]	6.10.3.4.1.2a.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.11.5.4.6.1.2.2.2 of [1]	6.11.5.4.1.2a.2.2 of [1]	

9.6.2 Interactive or background / UL:16 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

9.6.2.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.11.5.4.1.23b.1 of [1]			
TFCS				
Physical Channel				

9.6.2.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.11.5.4.6.1.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.11.5.4.6.1.2.2.2 of [1]	6.11.5.4.1.2.2.2 of [1]	

9.6.2a Interactive or background / UL:16(multiframe) DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH(multiframe) (REL-5)

9.6.2a.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
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Transport Channel	6.11.5.4.6.2a.1.1.1 of [1]		6.11.5.4.1.2a.1.1.1 of [1]	
TFCS	6.10.3.4.1.26.1.1.3 of [1]			
Physical Channel	6.11.5.4.6.2a.1.2 of [1]		6.11.5.4.6.2a.1.2 of [1]	

9.6.3a.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.11.5.4.6.2a.2 of [1]			
TFCS				
Physical Channel				

9.6.3 Interactive or background / UL:32 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

9.6.3.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.11.5.4.1.23d.1 of [1]			
TFCS				
Physical Channel				

9.6.3.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel		6.11.5.4.6.1.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.2.2.1.2 of [1]			
Physical Channel		6.11.5.4.6.1.2.2.2 of [1]	6.11.5.4.1.2.2.2 of [1]	

9.6.3a Interactive or background / UL:32(multiframe) DL: [max bit rate depending on UE category] / PS RAB +UL:3.4 DL:3.4 kbps SRBs for DCCH(multiframe) (REL-5)

9.6.3a.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.11.5.4.6.3a.1.1.1 of [1]		6.11.5.4.1.2a.1.1.1 of [1]	
TFCS	6.10.3.4.1.28.1.1.3 of [1]			
Physical Channel	6.11.5.4.6.3a.1.2 of [1]		6.11.5.4.6.3a.1.2 of [1]	

9.6.3a.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.11.5.4.6.2a.2 of [1]			
TFCS				
Physical Channel				

9.6.4 Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

9.6.4.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.11.5.4.1.26.1 of [1]			
TFCS				
Physical Channel				

## 9.6.4.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.11.5.4.6.2.2 of [1]			
TFCS				
Physical Channel				

## 9.6.5 Interactive or background / UL:128 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

## 9.6.5.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.11.5.4.1.28.1 of [1]			
TFCS				
Physical Channel				

## 9.6.5.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.11.5.4.6.2.2 of [1]			
TFCS				
Physical Channel				

## 9.6.6 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

## 9.6.6.1 Uplink

	Radio Bearer	<i>(reserved for Radio Bearer)</i>	Signalling Radio	<i>(reserved for Signalling Radio Bearer)</i>

	on DPCH	on E-DPCH )	Bearer on DPCH	on E-DPCH )
Transport Channel	6.11.5.4.1.38c.1 of [1]			
TFCS				
Physical Channel				

9.6.6.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.2.4.1.4.2.1.1 of [1]	6.11.5.4.6.1.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.2.4.1.4.2.1.3 of [1]			
Physical Channel	6.10.2.4.1.4.2.2 of [1]	6.11.5.4.6.1.2.2.2 of [1]	6.10.2.4.1.4.2.2 of [1]	

9.6.7 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

9.6.7.1 Uplink

	Radio Bearer on DPCH	(reserved for Radio Bearer on E-DPCH )	Signalling Radio Bearer on DPCH	( reserved for Signalling Radio Bearer on E-DPCH )
Transport Channel	6.11.5.4.1.40.1 of [1]			
TFCS				
Physical Channel				

9.6.7.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel				
TFCS				

Physical Channel	6.11.5.4.6.5.2 of [1]
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9.6.8 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (REL-5)

9.6.8.1 Uplink

	Radio Bearer on DPCH	<i>(reserved for Radio Bearer on E-DPCH)</i>	Signalling Radio Bearer on DPCH	<i>(reserved for Signalling Radio Bearer on E-DPCH)</i>
Transport Channel	6.11.5.4.1.51.1 of [1]			
TFCS				
Physical Channel				

9.6.8.2 Downlink

	Radio Bearer on DPCH	Radio Bearer on HS-PDSCH	Signalling Radio Bearer on DPCH	Signalling Radio Bearer on HS-PDSCH
Transport Channel	6.10.3.4.1.13.2.1.1 of [1]	6.11.5.4.6.1.2.1.1 of [1]	6.10.2.4.1.2.2.1.1 of [1]	
TFCS	6.10.3.4.1.13.2.1.3 of [1]			
Physical Channel	6.11.5.4.1.13.2.2 of [1]	6.11.5.4.6.1.2.2.2 of [1]	6.11.5.4.1.13.2.2 of [1]	

## Annex A: Service scenarios

This chapter presents a selection of service scenarios, which are used as a basis for the RAB scenarios. Only the basic scenarios having impact on the lower layers are considered. Because the real time applications have the tightest connection with the lower layers, the real time scenarios are studied more in detail in this document. Other scenarios can be derived as combinations of these basic scenarios.

Even though these scenarios are for IMS, they are applicable also for non-IMS PS scenarios. The differences between IMS and non-IMS are small in RAN level: Usually, the difference is that in non-IMS cases the IMS signalling stream is left out or replaced by non-IMS signalling stream. Other differences are indicated later in the text, whenever necessary.

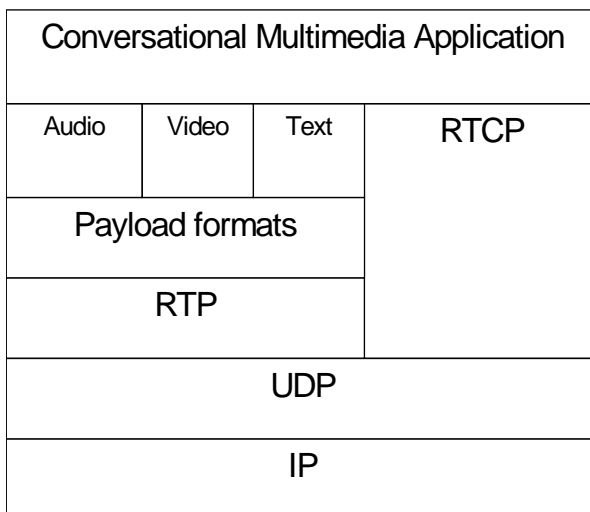
**Table A-1: Service scenarios**

		IMS Signalling	Speech (RTP)	Speech (RTCP)	Audio (RTP)	Audio (RTCP)	Video (RTP)	Video (RTCP)	Text (RTP)	Text (RTCP)	Data	Notes
1	Speech	X	X	X	-	-	-	-	-	-	O	
2	Audio	X	-	-	X	X	-	-	-	-	O	
3	Video	X	-	-	-	-	X	X	-	-	O	
4	Text	X	-	-	-	-	-	-	X	X	O	
5	Speech, Video	X	X	X	-	-	X	X	-	-	O	
6	Audio, Video	X	-	-	-	-	X	X	X	X	O	
7	Speech, Text	X	-	-	X	X	X	X	-	-	O	
8	Video, Text	X	X	X	-	-	-	-	X	X	O	
9	Speech, Video, Text	X	X	X	-	-	X	X	X	X	O	
10	Audio, Text	X	-	-	X	X	-	-	X	X	O	
11	Audio, Video, Text	X	-	-	X	X	X	X	X	X	O	
X = stream included in scenario - = stream not included in scenario O = stream optionally included in scenario												

NOTE: In some 3GPP specifications (e.g., [10]) "audio" and "speech" are not separated, but handled under title "audio".

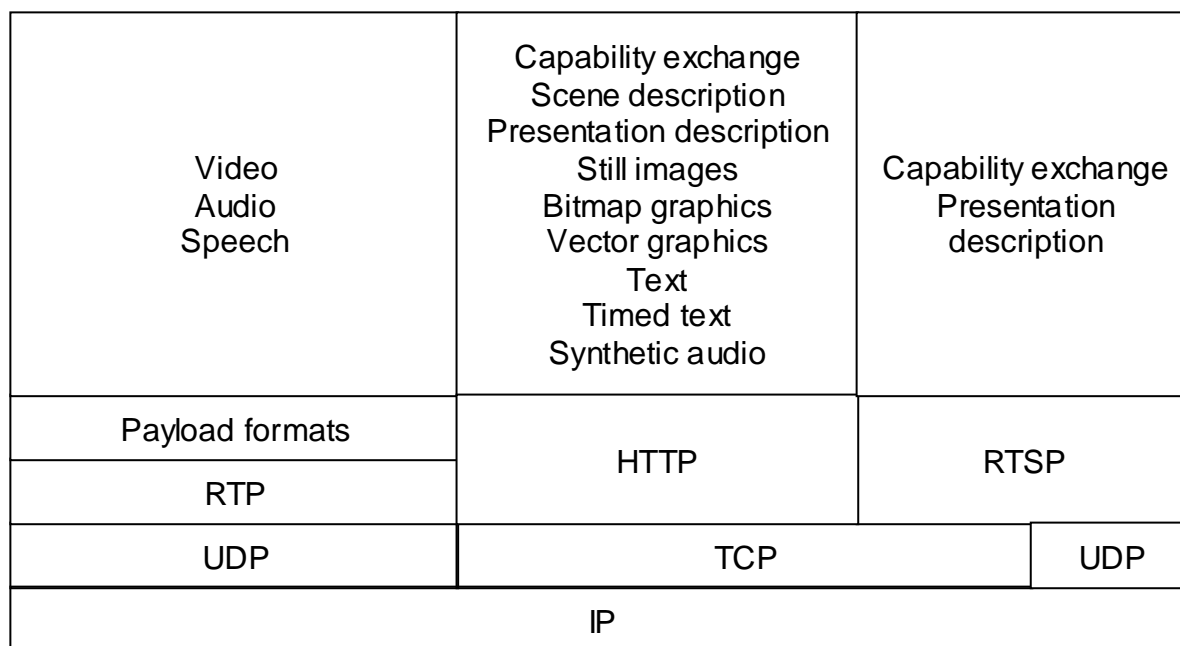
In most of the scenarios, the services can be either streaming or conversational. For PS streaming, there is no full IMS support in Release 5. However, this does not have major impact on the items presented in this document.

The protocol layers of the scenarios are presented in Figure A-1 for conversational and in Figure A-2 for streaming services ([10], [11]).



**Figure A-1 – User plane protocol stack for conversational multimedia terminal**

The protocol layers for IMS signalling stream, not presented in the figure, are (SDP/SIP/UDP/IP).



**Figure A-2: Protocol stack for PS streaming terminal**

## A.1 Common characteristics of scenarios

The characteristics of the streams in the next sub-chapters are common to all or most of the scenarios.

In scenarios, where the IP protocol header size or contents are relevant, it is assumed that IPv6 header without extension headers is used, i.e., the IP header size is 40 bytes. The UDP header size is 8 bytes.

### A.1.1 RTP and RTCP streams

### A.1.2 Signalling stream

### A.1.3 Data stream

The data stream may be used to carry any background or interactive data. Examples on data are still images, graphics, and scene / presentation descriptions, shown in Figure A-2 and [11], as well as web browsing and/or file download. Low delay is not guaranteed, and the data rates may vary between 0 kbps and the maximum bit rate of the context.

## A.2 Scenarios

In each of the scenarios, there is also an additional PDP context for SIP or RTSP, and optionally one or more PDP contexts for data. Which PDP contexts are primary or secondary, is not relevant for RAB scenarios.

### A.2.1 Speech

For the IMS speech service, the parameters that the transmitter should use (and the receiver shall at least support) are defined more precisely than for any other service in [10].

NOTE: Speech is defined under the term "audio" in [10].

Both AMR and AMR-WB are included. The parameters for speech are presented below, derived from [10] and [13]:

**Table A.2.1-1: Conversational IMS speech service parameters**

		Selection or parameter value		Notes
	Nr of AMR / AMR-WB frames in RTP packet	One		Min. 20 ms packet interval RTP header adds 12 bytes
	AMR / AMR-WB payload mode	Bandwidth efficient		
	AMR , lowest and highest modes	AMR / AMR-WB mode	Payload bytes per frame	Payload bits include ARM data, payload header, table of contents and padding.  Multi-channel session, interleaving or internal CRC not used.  Size of SID frame is 7 bytes.
		4.75	14	
		12.2	32	
AMR-WB, lowest and highest modes	6.6	18		
	23.85	61		

For non-IMS services, the above-mentioned restrictions are not applicable. However, it can be assumed that the parameters for conversational VoIP services do not usually deviate significantly from those given above.

For speech streaming, the codecs are the same as above (AMR and AMR-WB) [11]. In [14], examples on streaming services are presented. The most important difference to the conversational parameters is that the number of speech frames in one RTP packet may be much larger (e.g., 10). On the other hand, the payload mode can be different (octet aligned), CRCs included etc. (as in [14]), which gives larger payload presented in table A.2.1-1.



## A.2.2 Audio

"Audio" in this document refers to other than speech-based audio (music, combination of music and speech, etc...).

In [10] there is no distinction between audio and speech for conversational traffic. The default audio codecs for IMS are AMR and AMR-WB, hence the numbers in chapter A.2.1 are applicable.

According to [11], MPEG-4 AAC-LC codec should be supported for audio streaming, and in addition, also MPEG-4 AAC-LTP may be supported. As for the speech streaming, the RTP packets contain of several audio frames, as presented in [14].

## A.2.3 Video

The video codecs have a wide range of possible bit rates and packet sizes. For streaming and conversational video, the codecs are H.263 and MPEG 4 (see [11] and [15]). RTP packet size is restricted in IMS conversational video to 512 bytes [10].

Examples on video streaming are presented in [14]. There is a wide range of RTP packet rates, depending on various factors, e.g., codec rate or packetization.

## A.2.4 Text

According to [16], the data rate of T.140 text telephony over RTP is low: "The rate of character entry is usually at a level of a few characters per second or less. Therefore, the expected number of characters to transmit is low. Only one or a few new characters are expected to be transmitted with each packet". Hence, large part of the traffic consists of the overhead, i.e., RTP/UDP/IP headers and RTCP/UDP/IP packets. The data rate is mostly less than 1 kbps. Whenever the delay has to be guaranteed, the context cannot be of interactive or background traffic class, but e.g., streaming class has to be used.

It should be noted that text telephony does not include document viewing or other similar use, but only situations where the text is entered by human users in the both ends. For example, the "Text" service in Figure A-2 does not refer to text telephony.

## A.2.5 Speech and video

There are basically two different alternatives, depending on whether audio and video streams are on the same or different PDP contexts. The former case is basically similar to the scenario in the chapter A.2.3. The latter case has different implications on lower layers. For streaming case with speech and video over the same context, there is an example in [14].

## A.2.6 Audio and video

The difference in this scenario to the previous one is that the audio/speech coded may be different. On lower layers, this can be handled as the previous scenario.

## A.2.7 Video, audio, or speech with text

The additional text telephony stream adds a low bit rate PDP context. Whenever there is a requirement to synchronize the text with the voice or video stream, the text telephony context delay parameters have to be aligned with those of the others (i.e., the delay requirement may be stricter than for stand-alone text telephony).

## Annex B: Mapping of service scenarios to Radio Access Bearers

### B.1 Common requirements

The bearers in this document shall be based entirely on existing 25-series specifications. That is, no requirement on RABs that is not in line with existing RAN specifications, shall be presented.

In this chapter, the main principles for selecting the parameters are presented.

### B.2 Bearer characteristics

The following table lists general characteristics of the bearers in the scenarios:

	Parameter	Typical selection or parameter value	Notes
PDCP	PDCP header, bits	8	8 bit PDCP header is the default in the scenarios.  (For lossless SRNS relocation support, PDCP header can also contain sequence number of 16 bits.)
	Header compression	RFC 3095 (ROHC)	ROHC assumed to compress [RTP/UDP/IP (and ESP/IP) traffic].  No ROHC context identifier needed: PID field (5 bits) of PDCP header is sufficient to indicate all ROHC contexts in the given scenarios.  The most common header (shortest 2 <sup>nd</sup> order header) is 3 bytes when UDP checksum is present (with IPv6); see RLC payload sizes.  ROHC feedback packets transmitted in opposite direction, interspersed with main flow packets.  Segmentation of ROHC not in use, because only non-transparent RLC modes in these scenarios.
		RFC 2507	For TCP/IP compression (even though any IP headers, also those in UDP/IP could be compressed by RFC 2507).  TCP/IP used in interactive and background, therefore no impact on RLC payload sizes
RLC			
	RLC mode	UM or AM	TM not possible because no a priori information on (compressed) IP packets, and no mechanism specified for negotiating ROHC packet sizes parameters.  UM used for conversational traffic class, AM for all other classes.

	Payload sizes, bit		Number of different payload sizes to be limited so that max size of TFCS is reasonably low.  In some scenarios, one of payload sizes is IP payload with shortest ROHC header.  For AM, default payload size is 320 bits
	Max data rate, kbps		The actual data rate on IP layer is somewhat different from this nominal figure, due to: <ul style="list-style-type: none"> <li>• PDCP header</li> <li>• Length indicator part of RLC header</li> <li>• Retransmissions (in AM)</li> <li>• Header compression</li> </ul>
	UMD/AMD PDU header, bit	8 / 16	8 for UM, 16 for AM

**Table B.2-1: Common characteristics of L2**

In the scenarios, the RABs for data stream are not presented. Each of the scenarios may or may not have one or more RABs for data stream. The RABs can be selected from the interactive/background RABs.

## B.3 RAB Scenarios

NOTE: The following RAB combinations are only examples of possible implementations of the scenarios.

Due to flexibility in RAN specifications (and in PDP context parameters) there is a large number of other possible RABs and their combinations that could implement the scenarios. There are also other RAB combinations applicable for other scenarios, not listed below.

This chapter concentrates on the basic scenarios of chapter A.2.1, thus excluding most of the combinations of multiple sessions.

## Annex C: Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
09/2002	RP-17	RP-020663	-		Creation.	-	-
12/2002	RP-18	RP-020890	-		Merge of RP-020877 with RP-020814. Clause numbering changed. Approved at TSG RAN#18.	2.0.0	6.0.0
03/2003	RP-19	RP-030109	001		Streaming and interactive/background RAB combinations	6.0.0	6.1.0
	RP-19	RP-030109	002		QoS attributes for RABs in 25.993	6.0.0	6.1.0
	RP-19	RP-030109	003		TDD RABs in 25.993	6.0.0	6.1.0
06/2003	RP-20	RP-030288	004		Corrections to the UE capabilities and editorial changes	6.1.0	6.2.0
	RP-20	RP-030288	005		New configuration for CBS: CTCH, PCCH, 32kbps RAB and SRBs on 1 S-CCPCH	6.1.0	6.2.0
	RP-20	RP-030288	006		New SCCPCH Configurations	6.1.0	6.2.0
	RP-20	RP-030288	008		PS streaming and CS speech RAB combinations	6.1.0	6.2.0
	RP-20	RP-030288	009		RB configuration for the support of wideband AMR speech telephony services	6.1.0	6.2.0
	RP-20	RP-030288	010		Corrections on TDD RABs	6.1.0	6.2.0
09/2003	RP-21	RP-030497	012		IMS RAB scenarios	6.2.0	6.3.0
	RP-21	RP-030489	013		Addition of Streaming RABs	6.2.0	6.3.0
12/2003	RP-22	RP-030609	014		BTFD with Flexible TrCH position	6.3.0	6.4.0
	RP-22	RP-030609	015		Addition of Conversational – Interactive/Background RAB combination	6.3.0	6.4.0
03/2004	RP-23	RP-040100	019		Alignment with 34.108 for TDD	6.4.0	6.5.0
	RP-23	RP-040100	024		S-CCPCH combination for HS-DSCH channel type switching	6.4.0	6.5.0
	RP-23	RP-040109	025		DCH combination for HS-DSCH channel type switching	6.4.0	6.5.0
06/2004	RP-24	RP-040205	026		Corrections on required capabilities for 32kbps UE class and addition of the 12kbps class	6.5.0	6.6.0
	RP-24	RP-040205	027		Addition of RAB Parameters For RABs Removed From TS34.108 But Retained In TS25.993	6.5.0	6.6.0
09/2004	RP-25	RP-040325	028		Physical layer multiplexing configuration in case of AMR and two PS RABs with zero bit rates	6.6.0	6.7.0
	RP-25	RP-040325	029		Physical layer multiplexing configuration in case of two PS RABs	6.6.0	6.7.0
	RP-25	RP-040325	030		Correction of RAB configuration in 1.28Mcps TDD	6.6.0	6.7.0
	RP-25	RP-040325	032		Conversational PS RAB for HS-DSCH	6.6.0	6.7.0
12/2004	RP-26	RP-040483	031	3	Addition of HSDPA RABs	6.7.0	6.8.0
	RP-26	RP-040475	033		Addition RAB combinations for UL>DL PS rates	6.7.0	6.8.0
	RP-26	RP-040475	034		Radio bearer combination for PS streaming in section 7.1.74	6.7.0	6.8.0
	RP-26	RP-040475	035	1	Correct TFCS used in 128DL RAB	6.7.0	6.8.0
03/2005	RP-27	RP-050064	036		Addition of asymmetric RAB-combinations with voice	6.8.0	6.9.0
	RP-27	RP-050071	037		AMR-WB reference RAB configurations	6.8.0	6.9.0
06/2005	RP-28	RP-050325	0038		Introduction of fixed DTX positions for I/B RAB combinations	6.9.0	6.10.0
	RP-28	RP-050325	0039		Inclusion of HSDPA RABs already defined in 34.108	6.9.0	6.10.0
	RP-28	RP-050321	0040		CCCH message enhancements	6.9.0	6.10.0
	RP-28	RP-050325	0041		Introduction of Streaming RABs over HSDPA	6.9.0	6.10.0
09/2005	RP-29	RP-050455	0042		Redefinition of Radio Access Bearer (RAB) combinations	6.10.0	6.11.0
	RP-29	RP-050455	0043		Proposed new notation for HSDPA Radio Bearers (RB)	6.10.0	6.11.0
	RP-29	RP-050455	0044		Combinations of radio bearers on DPCH with WB-AMR and I/B PS	6.10.0	6.11.0
	RP-29	RP-050455	0045		Inclusion of additional example RAB combinations	6.10.0	6.11.0
	RP-29	RP-050455	0046		Addition of RAB-combinations with AMR 5.9 voice and AMR 12.2 with two PDP contexts	6.10.0	6.11.0
	RP-29	RP-050487	0047		Maximum number of bits per TTI for extended CCCH	6.10.0	6.11.0
	RP-29	RP-050586	0050	1	Reference RB configuration for AMR utilising 5.9, and 4.75 kbps with SF256 in DL	6.10.0	6.11.0
12/2005	RP-30	RP-050799	0048	3	Addition of VoIP RAB combinations	6.11.0	6.12.0
	RP-30	RP-050799	0049	3	Addition of VoIP RAB combination for multiplexed RTP and RTCP flows	6.11.0	6.12.0
	RP-30	RP-050799	0051	1	Addition of multi-rate AMR-NB configuration with SRB#5	6.11.0	6.12.0
	RP-30	RP-050799	0052	1	Introduction of high bit rate SRB	6.11.0	6.12.0
	RP-30	RP-050799	0053	3	Addition of multi-rate AMR configuration over HSDPA	6.11.0	6.12.0
	RP-30	RP-050799	0054	1	Miscellaneous corrections	6.11.0	6.12.0
	RP-30	RP-050799	0055		Introduction of conversational mono rate AMR 5.9 kbps RAB with SF 128.	6.11.0	6.12.0
	RP-30	RP-050799	0057		PL for Conversational / speech (12.65, 8.85, 6.6) kbps + Interactive 0 kbps	6.11.0	6.12.0
	RP-30	RP-050799	0060		WB-AMR configurations	6.11.0	6.12.0
	RP-30	RP-050799	0061	1	Addition of VoIP RAB combinations	6.11.0	6.12.0

	RP-30	RP-050799	0062		Addition of VoIP RAB combination for multiplexed RTP and RTCP flows	6.11.0	6.12.0
03/2006	RP-31	RP-060088	0056	2	Reference RAB configurations for MBMS	6.12.0	6.13.0
	RP-31	RP-060082	0063		Corrections to TR 25.993	6.12.0	6.13.0
	RP-31	RP-060083	0064		VT bearer configurations	6.12.0	6.13.0
	RP-31	RP-060083	0065		Introduction of additional WB-AMR RAB combinations	6.12.0	6.13.0
	RP-31	RP-060087	0066		Introduction of EUL RB configurations	6.12.0	6.13.0
	RP-31	RP-060082	0067	1	Uplink Streaming 128 kbps combinations	6.12.0	6.13.0
	RP-31	RP-060087	0068	1	VoIP reference configuration for E-DCH	6.12.0	6.13.0
	RP-31	RP-060089	0069		Alternative reference RB configurations for MBMS	6.12.0	6.13.0
06/2006	RP-32	RP-060368	0070		Correction of transport block sizes in MBMS reference bearer configurations	6.13.0	6.14.0
	RP-32	RP-060367	0071		Addition of the combinations on DPCH and HS-PDSCH for LCR TDD	6.13.0	6.14.0
	RP-32	RP-060367	0073		Correction of internal references	6.13.0	6.14.0
	RP-32	RP-060367	0074		Reference configuration of AMR (5.9 kbps, 4.75 kbps) and HSDPA and E-DCH	6.13.0	6.14.0
	RP-32	RP-060367	0075		Puncturing limit correction in 7.1.112	6.13.0	6.14.0
	RP-32	RP-060372	0076		New configurations with 'flexible TFCS'	6.13.0	6.14.0
	RP-32	RP-060371	0077	1	Introduction of high data rate SRB	6.13.0	6.14.0
09/2006	RP-33	RP-060572	0078		Correction to chapter numbering in E-DPDCH and HS-DPSCH RB combinations	6.14.0	6.15.0
	RP-33	RP-060572	0084		Correction on combinations with Streaming / unknown / UL:0 DL:64 kbps / CS RAB	6.14.0	6.15.0
	RP-33	-	-		Upgrade to the Release 7 - No technical change	6.15.0	7.0.0
12/2006	RP-34	RP-060721	0079	3	Addition of VoIP RAB combination for multiplexed RTP and RTCP flows when ROHC is in steady state	7.0.0	7.1.0
	RP-34	RP-060721	0085		Additional I/B RAB combinations	7.0.0	7.1.0
	RP-34	RP-060721	0086		7.6 kbps signalling RB for MCCH	7.0.0	7.1.0
	RP-34	RP-060721	0087		Reference SRB configuration for MCCH	7.0.0	7.1.0
03/2007	RP-35	RP-070152	0088	1	Correction on RAB combinations for VoIP for TR 25.993	7.1.0	7.2.0
	RP-35	RP-070152	0089		Addition of IMS MM Telephony configurations over HSPA	7.1.0	7.2.0
	RP-35	RP-070152	0090		Correction to TF size in MBMS reference configuration	7.1.0	7.2.0
	RP-35	RP-070152	0091		UE capability requirement for 7.6 kbps signalling RB for MCCH	7.1.0	7.2.0
	RP-35	RP-070152	0092		Additional HSPA RAB Combinations	7.1.0	7.2.0
	RP-35	RP-070152	0093		Additional HSDPA RAB Combinations	7.1.0	7.2.0
06/2007	RP-36	RP-070396	0094	1	Addition of RAB combinaison for SRB mapped on DL "HSDPA + DCH"	7.2.0	7.3.0
	RP-36	RP-070396	0095		Additional DCH RAB Combinations	7.2.0	7.3.0
	RP-36	RP-070396	0096		HSPA RAB Combinations	7.2.0	7.3.0
	RP-36	RP-070396	0097		Additional HSPA RAB Combinations	7.2.0	7.3.0
09/2007	RP-37	RP-070623	0098		HSUPA and HSDPA with SRBs on 13.6 kbps DCH	7.3.0	7.4.0
	RP-37	RP-070625	0099		References to radio bearer for MCCH and MTCH testing	7.3.0	7.4.0
	RP-37	RP-070624	0100		Add references to additional combinations on PRACH adopted in 34.108	7.3.0	7.4.0
	RP-37	RP-070624	0101		Additional DCH RAB Combination	7.3.0	7.4.0
	RP-37	RP-070624	0102		Very low bit rate WB-AMR configuration	7.3.0	7.4.0
	RP-37	RP-070624	0103		Additional DCH RAB combination	7.3.0	7.4.0
12/2007	RP-38	RP-070895	0104		MBMS ptp RAB on HS	7.4.0	7.5.0
	RP-38	RP-070892	0106		Removal of incorrect configuration	7.4.0	7.5.0
03/2008	RP-39	RP-080190	0107	1	RB combinations for flexible PDU sizes and MAC-e-hs	7.5.0	7.6.0
	RP-39	RP-080180	0108	-	RAB combinations MBMS PTP on DPCH	7.5.0	7.6.0
05/2008	RP-40	RP-080405	0109	-	RAB combinations for CS voice over HSPA	7.6.0	8.0.0
09/2008	RP-41	RP-080687	0111	-	RAB combinations for CS voice over HSPA	8.0.0	8.1.0
12/2008	RP-42	RP-081012	0112	1	Update of references to TS 34.108 CS voice over HSPA RAB combinations	8.1.0	8.2.0
09/2009	RP-45	RP-090916	0114	-	CS over HSPA RAB combinations adding	8.2.0	8.3.0

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# History

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V8.2.0	January 2009	Publication
V8.3.0	October 2009	Publication