



AMENDMENT

ETS 300 786
pr **A1**

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Reference: RE/TM-04063-15/A1

Key words: DRRS, radio, SDH, STM, transmission

**This draft amendment A1, if approved, will modify
the European Telecommunication Standard ETS 300 786 (1996)**

**Transmission and Multiplexing (TM);
Digital Radio Relay Systems (DRRS);
Sub-STM-1 DRRS operating in the 13 GHz, 15 GHz and 18 GHz
frequency bands with about 14 MHz
co-polar channel spacing**

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Foreword

This draft amendment to ETS 300 786 (1998) has been produced by the Transmission and Multiplexing (TM) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the One-step Approval Procedure phase of the ETSI standards approval procedure.

Once this amendment has been adopted, it is intended to incorporate it into ETS 300 786 Edition 1 and to convert the resulting document into EN 300 786 V1.2.1 for publication.

Proposed transposition dates	
Date of latest announcement of this amendment (doa):	3 months after ETSI publication
Date of latest publication or endorsement of this amendment (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

Amendments

Modify clause 2 and subclauses 6.5, 6.5.1, 6.5.2, 7.4, 7.4.1 and 7.4.2 as follows:

2 References

[28] ~~CEPT/ERC Recommendation 74-01: "Spurious Emissions". EN 301 390: "Transmission and Multiplexing (TM); Digital Radio Relay Systems (DRRS); Spurious emissions and receiver immunity at equipment antenna ports of DRRS".~~

6.5 Spurious emissions

~~Spurious Emissions are defined as emissions at frequencies which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products, but exclude emissions which result from the modulation process. The necessary bandwidth is defined as twice the transmitted symbol rate.~~

It is necessary to define spurious emissions from transmitters for two reasons:

- a) ~~to limit interference into other systems operating wholly externally to the system under consideration (external emissions), which limits are referred by CEPT/ERC Recommendation 74-01 [28].~~ to limit interference into systems operating wholly externally to the Sub-STM-1 system channel plan;
- b) to limit local interference within the Sub-STM-1 system where transmitters and receivers are directly connected via the filter and branching systems.

This leads to two sets of spurious emission limits where the specific limits given for 'internal' interference are required to be no greater than the 'external' level limits.

6.5.1 Spurious emissions - external

~~When EN 301 390 [28] is published, it shall be used as reference for the level limits until a Recommendation is issued by CEPT. In the meantime refer to the limits stated below.~~

~~The frequency range in which the spurious emission specifications apply is 30 MHz to 40 GHz. The limit values measured at point C' are:~~

~~-30 MHz to $\leq 21,2$ GHz ≤ -60 dBm in any 100 kHz band;~~

~~-> 21,2 GHz to 40 GHz ≤ -30 dBm in any 1 MHz band.~~

According to CEPT/ERC Recommendation 74-01 [28], the external spurious emissions are defined as emissions at frequencies which are removed from the nominal carrier frequency more than $\pm 250\%$ of the relevant channel separation.

Outside the band of $\pm 250\%$ of the relevant channel separation (CS), the Fixed Service radio systems spurious emission limits, defined by CEPT/ERC Recommendation 74-01 [28] together with the frequency range to consider for conformance measurement, shall apply at reference point C'.

6.5.2 Spurious emissions - internal

The levels of the spurious emissions from the transmitter, referenced to point B' are specified in the table 3.

The required level will be the total average level integrated over the bandwidth of the emission under consideration.

Table 3: Spurious Emission Limits - Internal

Spurious Emission Frequency Relative to Assigned Channel Frequency.	Specification Limit	Controlling Factor
The level of all spurious signals (including L.O., +/- IF, +/- 2 x IF)	≤ -90 dBm	If spurious signal's frequency falls within receiver half band and if branching is used on the same polarization.
The level of all spurious signals (including L.O., +/- IF, +/- 2 x IF)	≤ -45 dBm	If spurious signal's frequency falls within transmitter half band.
The level of all spurious signals (including L.O., +/- IF, +/- 2 x IF)	≤ -70 dBm	If spurious signal's frequency falls within receiver half band. For digital systems without branching networks (i.e. with duplexer) or on different polarization.
Note: The values stated in table 3 are limit values for CW signal as well as 'noise like' signals measured with the bandwidth acc. to 6.5.1.		

7.4 Spurious emissions

"Spurious emissions from the receiver are emissions at any frequency, measured at point C.

It is necessary to define spurious emissions from receivers for two reasons:

- to limit interference into other systems operating wholly externally to the system under consideration (external emissions), which limits are referred by CEPT/ERC Recommendation 74-01 [28] to limit interference into systems operating wholly externally to the Sub-STM-1 system channel plan;
- to limit local interference within the Sub-STM-1 system where transmitters and receivers are directly connected via the filter and branching systems.

This leads to two sets of spurious emission limits where the specific limits given for 'internal' interference are required to be no greater than the 'external' level limits.

7.4.1 Spurious emissions - external

When EN 301 390 [28] is published, it shall be used as reference for the level limits till a Recommendation will be issued by CEPT. In the meantime refer to the limits stated below.

The frequency range in which the spurious emission specifications apply is 30 MHz to 40 GHz. The limit values measured at point C are:

$30 \text{ MHz to } \leq 21,2 \text{ GHz} \leq -60 \text{ dBm in any } 100 \text{ kHz band}$

$> 21,2 \text{ GHz to } 40 \text{ GHz} \leq -30 \text{ dBm in any } 1 \text{ MHz band}$

At reference point C, the limit values of CEPT/ERC Recommendation 74-01 [28] shall apply.

7.4.2. Spurious emissions - internal

For spurious emissions at the local oscillator frequency provisional limits, referenced to point B, are specified below in table 5.

The required level will be the total average level integrated over the bandwidth of the emission under consideration.

Table 5 Limits of Spurious Emissions-Internal

Specification Limit	<u>Controlling factor</u>
≤ -110 dBm	<u>Spurious falling in the same receiver half-band</u> For systems with branching on the same polarization
≤ -90 dBm	<u>Spurious falling in the same receiver half-band</u> For systems without branching networks (i.e. with duplexer) or on different polarization
Note: The values stated in this table are limit values for CW signal as well as 'noise like' signals measured with the bandwidth acc. to clause 7.4.1	

History

Document history	
October 1998	First Edition
August 1999	One-step Approval Procedure OAP 9956: 1999-08-25 to 1999-12-24