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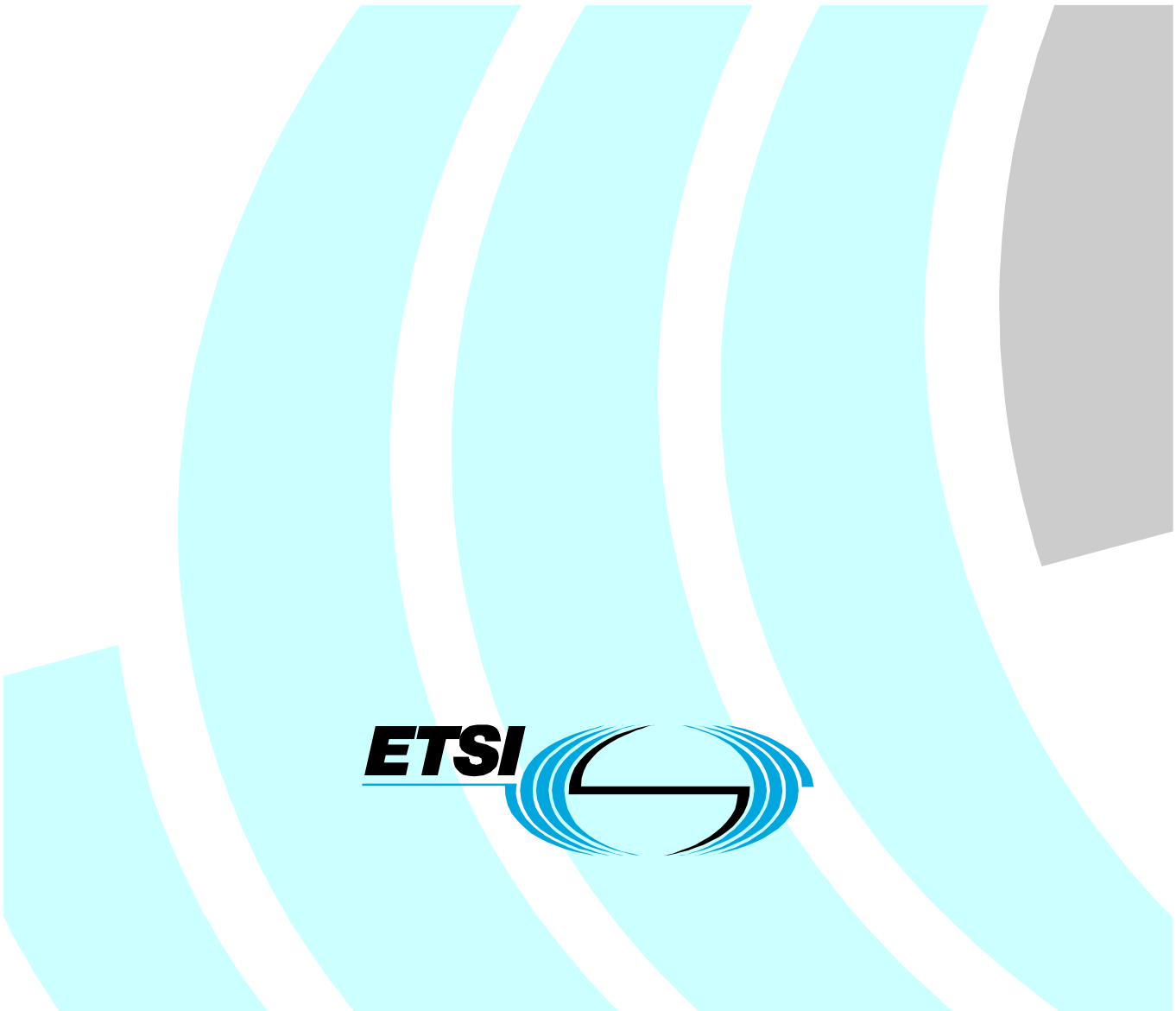
Candidate Harmonized European Standard (Telecommunications series)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Radar equipment operating in the 76 GHz to 77 GHz range; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive



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Contents

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Foreword

This Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM), and is now submitted for the ETSI standards One-step Approval Procedure.

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

The present document is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Directive 1999/5/EC [1] of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").

Technical specifications relevant to Directive 1999/5/EC [1] are given in annex A.

The present document is part 2 of a multi-part deliverable covering Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Radar equipment operating in the 76 GHz to 77 GHz range, as identified below:

Part 1: "Technical characteristics and test methods for radar equipment operating in the 76 GHz to 77 GHz range";

Part 2: "Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive".

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	18 months after doa

1 Scope

The present document applies to Road Transport Traffic and Telematics (RTTT) systems:

- with an integral antenna;
- for mobile applications only;
- operating in the frequency range from 76 GHz to 77 GHz.

The applicability of the present document covers only the 76 GHz to 77 GHz automotive Radar equipment for road vehicles. The present document does not necessarily include all the characteristics which may be required by a user, nor does it necessarily represent the optimum performance achievable.

The present document applies to radio equipment intended to operate in a frequency designation as defined in CEPT/ECC/DEC (02)01 [7] and in CEPT/ERC/REC 70-03 [5] in all or in part of the service frequency band from 76 GHz to 77 GHz.

The present document is intended to cover the provisions of Directive 1999/5/EC [1] (R&TTE Directive) article 3.2, which states that "… radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications and orbital resources so as to avoid harmful interference".

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the R&TTE Directive [1] will apply to equipment within the scope of the present document.

2 References

[1] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).

[2] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive) amended by Directive 91/263/EEC, Directive 92/31/EEC and Directive 93/68/EEC.

[3] Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (LV Directive).

[4] ETSI EN 301 091-1 (V1.3.2): "ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Radar equipment operating in the 76 GHz to 77 GHz range; Part 1: Technical characteristics and test methods for radar equipment operating in the 76 GHz to 77 GHz range".

[5] CEPT/ERC Recommendation 70-03 (November 17th, 2005): "Relating to the use of Short Range Devices (SRD)".

[6] ETSI EN 301 489 part 1 (V1.5.1) and part 3 (V1.4.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services".

[7] CEPT/ECC/DEC(02)01: "ECC Decision of 15 March 2002 on the frequency bands to be designated for the co-ordinated introduction of Road Transport and Traffic Telematic Systems".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in the R&TTE Directive [1], EN 301 091-1 [4] and the following apply:

environmental profile: range of environmental conditions under which equipment within the scope of EN 301 091-2 is required to comply with the provisions of the present document

3.2 Symbols

For the purposes of the present document, the symbols given in EN 301 091-1 [4] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in EN 301 091-1 [4] apply.

4 Technical requirements specifications

4.1 Environmental conditions

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be declared by the provider. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the declared operational environmental profile.

4.2 Conformance requirements

4.2.1 Transmitter

4.2.1.1 Permitted range of operating frequencies

The permitted range of operating frequencies shall not exceed the limits specified in clause 7.1.3 of EN 301 091-1 [4].

4.2.1.2 Radiated spatial mean power density (e.i.r.p.)

The radiated spatial mean power density (e.i.r.p.) shall not exceed the limits specified in clause 7.2.3 of EN 301 091-1 [4].

4.2.1.3 Radiated spatial peak power (e.i.r.p.)

The radiated spatial peak power (e.i.r.p.) shall not exceed the limits specified in clause 7.2.3 of EN 301 091-1 [4].

4.2.1.4 Out-of-band emissions

The transmitter out-of-band emissions shall not exceed the limits specified in clause 7.3.4 of EN 301 091-1 [4], table 4.

4.2.1.5 Spurious emissions

The transmitter spurious emissions, shall not exceed the limits specified in clause 7.4.4 of EN 301 091-1 [4], table 5.

4.2.2 Receiver spurious emissions

The receiver spurious emissions shall not exceed the limits specified in clause 8.1.3 of EN 301 091-1 [4].

NOTE: Not required on receivers co-located with transmitters.

5 Testing for compliance with technical requirements

5.1 Environmental conditions for testing

Tests defined in the present document shall be carried out at representative points within the boundary limits of the declared operational environmental profile.

Where technical performance varies subject to environmental conditions, tests shall be carried out under a sufficient variety of environmental conditions (within the boundary limits of the declared operational environmental profile) to give confidence of compliance for the affected technical requirements.

5.2 Essential radio test suites

5.2.1 Transmitter

5.2.1.1 Permitted range of operating frequencies

The test defined in clause 7.1.2 of EN 301 091-1 [4] shall be carried out.

5.2.1.2 Radiated spatial mean power (e.i.r.p.)

The test defined in clause 7.2.2 of EN 301 091-1 [4] shall be carried out.

5.2.1.3 Radiated spatial peak power (e.i.r.p.)

The test defined in clause 7.2.2 of EN 301 091-1 [4] shall be carried out.

5.2.1.4 Out-of-band emissions

The test defined in clause 7.3.3 of EN 301 091-1 [4] shall be carried out.

5.2.1.5 Spurious emissions

The test defined in clause 7.4.3 of EN 301 091-1 [4] shall be carried out.

5.2.2 Receiver spurious emissions

The test defined in clause 8.1.2 of EN 301 091-1 [4] shall be carried out.

5.3 Interpretation of results and measurement uncertainty

Clause 4.4 of EN 301 091-1 [4] shall apply.

Annex A (normative): HS Requirements & conformance Test specifications Table (HS-RTT)

The HS Requirements & conformance Test specifications Table (HS-RTT) in table A1 below serves a number of purposes, as follows:

- it provides a statement of all the essential requirements in words and by cross reference to a specific clause in the present document or to a specific clause in a specific referenced document;
- it provides a statement of all the test procedure corresponding to those essential requirements by cross reference to specific clause(s) in the present document or to a specific clause(s) in specific referenced document(s);
- it qualifies each requirement to be either:
  - Unconditional - meaning that the requirement applies in all circumstances, or
  - Conditional - meaning that the requirement is dependent on the supplier having chosen to support optional functionality defined within the schedule;
- in the case of Conditional requirements, it associates the requirement with the particular optional service or functionality;
- it qualifies each test procedure to be either:
  - Essential: meaning that it is included with the Essential Radio Test Suite and therefore the requirement shall be demonstrated to be met in accordance with the referenced procedures;
  - Other: meaning that the test procedure is illustrative but other means of demonstrating compliance with the requirement are permitted;
- when the schedule is completed in respect of a particular equipment including the testing outcomes, including a completed version of table A.1 it provides a means to assert the "presumption of conformity" with the HS.

Table A.1: HS Requirements & conformance Test specifications Table (HS-RTT)

Harmonized Standard EN 301 091-2						
Technical Requirement reference			Technical Requirement Conditionality		Test Specification	
No.	**Description**	**Reference Clause No**	**U/C**	**Condition**	**E/O**	**Reference Clause No**
1	Permitted range of operating frequencies	4.2.1.1	U		E	5.2.1.1
2	Radiated spatial mean power density	4.2.1.2	U		E	5.2.1.2
3	Radiated spatial peak power density	4.2.1.3	U		E	5.2.1.3
4	Out-of-band emissions	4.2.1.4	U		E	5.2.1.4
5	Spurious emissions	4.2.1.5	U		E	5.2.1.5
6	Receiver spurious emissions	4.2.2	U		E	5.2.2

Key to columns:

No. Table entry number;

Reference Clause reference number of conformance requirement within the present document;

EN-R Title of conformance requirement within the present document;

Status Status of the entry as follows:

M	Mandatory, shall be implemented under all circumstances;
O	Optional, may be provided, but if provided shall be implemented in accordance with the requirements;
O.n	this status is used for mutually exclusive or selectable options among a set. The integer "n" shall refer to a unique group of options within the EN-RT. A footnote to the EN-RT shall explicitly state what the requirement is for each numbered group. For example, "It is mandatory to support at least one of these options", or, "It is mandatory to support exactly one of these options".

Comments To be completed as required.

Annex B (informative): The EN title in the official languages

Language	EN title
Czech	Elektromagnetická kompatibilita a rádiové spektrum (ERM) - Zařízení krátkého dosahu - Telematika v silniční dopravě a v silničním provozu (RTTT) - Radarová zařízení pracující v pásmu 76 GHz až 77 GHz - Část 2: Harmonizovaná EN pokrývající základní požadavky článku 3.2 Směrnice R&TTE
Danish	Elektromagnetisk kompatibilitet og radiospektrumanliggender (ERM); Vejtransport og trafik telematik (RTTT); radarudstyr i 76 GHz til 77 GHz frekvensbåndet; Del 2: Harmoniseret EN, som dækker de væsentlige krav i R&TTE direktivets artikel 3.2
Dutch	Elektromagnetische compatibiliteit en radiospectrumzaken (ERM); Wegvervoer- en verkeerstelematica (RTTT); Radarapparatuur werkend in de frequentieband van 76 GHz tot 77 GHz; Deel 2: Geharmoniseerde EN welke invulling geeft aan de wezenlijke vereisten, neergelegd in artikel 3.2 van de R & TTE-richtlijn
English	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Radar equipment operating in the 76 GHz to 77 GHz range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
Estonian	Elektromagnetilise ühilduvuse ja raadiospektri küsimused (ERM); Lähitoimeseadmed (SRD); Maanteetranspordi ja liikluse telemaatikaseadmed (RTTT); Raadiosagedusalas 76 GHz kuni 77 GHz töötavad radarid; Osa 2: R&TTE direktiivi artikli 3.2 all harmoneeritud EN
Finnish	Sähkömagneettinen yhteensopivuus ja radiospektriasiat (ERM); Tiekuljetus ja liikenne telematikka (RTTT); 76 - 77 GHz:n taajuusalueilla toimivat tutkalaitteet; Osa 2: R&TTE direktiivin artiklan 3.2 mukainen yhdenmukaistettu standardi EN
French	CEM et spectre radioélectrique (ERM); Service Mobile Terrestre; Partie 2: EN harmonisée de l'article 3.2 de la Directive R&TTE
German	Elektromagnetische Verträglichkeit und Funkspektrumsangelegenheiten (ERM); Radargeräte für den Betrieb in den Frequenzbereichen von 76 GHz bis 77 GHz; Teil 2: Harmonisierte Europäische Norm (EN) mit wesentlichen Anforderungen nach R&TTE Richtlinie Artikel 3.2
Greek	
Hungarian	
Icelandic	
Italian	
Latvian	
Lithuanian	Elektromagnetinio suderinamumo ir radijo dažnių spektro dalykai. Trumpojo nuotolio įrenginiai. Duomenų apie kelių transportą ir eismą apdorojimo bei perdavimo priemonės. Radariniai įrenginiai veikiantys nuo 76 GHz iki 77 GHz dažnių juostoje. 2 dalis. Darnusis EN standartas, apimantis esminius reikalavimus pagal 1999/5/EC* direktyvos 3.2 straipsnį
Maltese	Kompatibilità elettromanjetika u materji relatati ma' spettru radjofoniku (ERM); Apparati ta' medda qasira; Telematika tat-Trasport u Traffiku bl-Art (RTTT); Tagħmir tar-Radar li jopera fil-medda 76 GHz sa 77 GHz; Parti 2: EN armonizzat taħt l-artiklu 3.2 tad-Direttiva R&TTE
Polish	Kompatybilność Elektromagnetyczna i Zagadnienia Widma Radiowego (ERM) - Urządzenia bliskiego zasięgu - Transport drogowy i telematyka transportu drogowego (RTTT) - Urządzenia radarowe pracujące w zakresie od 76 GHz do 77 GHz - Część 2: Zharmonizowana EN zgodna z artykułem 3.2 dyrektywy R&TTE
Portuguese	Assuntos de Espectro Radioeléctrico e Compatibilidade Electromagnética (ERM); Equipamentos de curto alcance; Sistemas de Telemática para Transporte e Tráfego Rodoviário (RTTT); Equipamentos de radar operando nas faixas de 76 GHz a 77 GHz; Parte 2: EN Harmonizada cobrindo os requisitos essenciais no âmbito do artigo 3º, nº 2, da Directiva R&TTE
Slovak	Elektromagnetická kompatibilita a záležitosti rádiového spektra (ERM). Zariadenia s krátkym dosahom. Telematika v cestnej doprave a prevádzke (RTTT). Radarové zariadenia pracujúce v rozsahu od 76 GHz do 77 GHz. Časť 2: Harmonizovaná EN vzťahujúca sa na základné požiadavky podľa článku 3.2 smernice R&TTE
Slovenian	Elektromagnetna združljivost in zadeve v zvezi z radijskim spektrom (ERM) - Naprave kratkega dosega - Cestna transportna in prometna telematika (RTTT) - Radarska oprema, ki deluje v frekvenčnem območju od 76 do 77 GHz - 2. del: Harmonizirani EN, ki zajema bistvene zahteve člena 3.2 direktive R&TTE
Spanish	
Swedish	

History

Document history		
V1.2.1	November 2004	Publication
V1.2.2	July 2005	Publication
V1.3.2	May 2006	One-step Approval Procedure OAP 20060922: 2006-05-24 to 2006-09-22