SLOVENSKI STANDARD
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Elektromagnetna združljivost in zadeve v zvezi z radijskim spektrom (ERM) - Standard elektromagnetne združljivosti (EMC) za radijsko opremo in storitve - 24. del: Posebni pogoji za mobilno in prenosno (UE) radijsko in pomožno opremo po standardu IMT-2000 s CDMA (kodno porazdeljenim sodostopom) in neposredno modulacijo po razpršenem spektru ("Direct Spread") (UTRA - prizemni dostop do UMTS)

Electromagnetic compatibility and Radio spectrum Matters (ERM) - ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Part 24: Specific conditions for IMT-2000 CDMA Direct Spread (UTRA) for Mobile and portable (UE) radio and ancillary equipment

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Harmonized European Standard (Telecommunications series)

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 24: Specific conditions for IMT-2000 CDMA Direct Spread (UTRA) for Mobile and portable (UE) radio and ancillary equipment

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Foreword

This Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [3] (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 Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility ("the EMC Directive") (89/336/EEC as amended) and Directive 1999/5/EC [2] 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").

The present document is part 24 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

National transposition dates	
Date of adoption of this EN:	31 August 2007
Date of latest announcement of this EN (doa):	30 November 2007
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 May 2008
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1 Scope

The present document, together with EN 301 489-1 [1], covers the assessment of "3rd generation" digital cellular (IMT-2000 CDMA Direct Spread) (UTRA) mobile and portable (UE) radio terminal equipment and associated ancillary equipment in respect of ElectroMagnetic Compatibility (EMC).

Technical specifications related to the antenna port and emissions from the enclosure port of radio equipment are not included in the present document. Such technical specifications are found in the relevant product standards for the effective use of the radio spectrum.

The present document specifies the applicable test conditions, performance assessment and performance criteria of "3rd generation" digital cellular (IMT-2000 CDMA Direct Spread) (UTRA) mobile and portable (UE) radio terminal equipment and associated ancillary equipment.

Examples of digital cellular mobile and portable radio equipment covered by the present document are given in annex A.

In case of differences (for instance concerning special conditions, definitions, abbreviations) between the present document and EN 301 489-1 [1], the provisions of the present document take precedence.

Base station (BS) equipment operating within network infrastructure is outside the scope of the present document. However, the present document does cover mobile and portable equipment that is intended to be operated in a fixed location while connected to the AC mains (see clause 5.5).

The environment classification and the emission and immunity requirements used in the present document are as stated in EN 301 489-1 [1], except for any special conditions included in the present document.

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

[1] ETSI EN 301 489-1 (V1.6.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements".

[2] 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).

[3] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.

[4] Void.

[5] Void.

[6] ETSI TS 134 108: "Universal Mobile Telecommunications System (UMTS); Common test environments for User Equipment (UE); Conformance testing (3GPP TS 34.108 version 6.4.0 Release 6)".

[7] ETSI TS 125 101: "Universal Mobile Telecommunications System (UMTS); User Equipment (UE) radio transmission and reception (FDD) (3GPP TS 25.101 version 7.5.0 Release 7)".

[8] ETSI TS 134 109: "Universal Mobile Telecommunications System (UMTS); Terminal logical test interface; Special conformance testing functions (3GPP TS 34.109 version 6.2.0 Release 6)".

[9] Void.

[10] ITU-T Recommendation P.64 (1999): "Determination of sensitivity/frequency characteristics of local telephone systems".

[11] ITU-T Recommendation P.76 (1988): "Determination of loudness ratings; fundamental principles".

[12] ETSI TS 125 102: "Universal Mobile Telecommunications System (UMTS); User Equipment (UE) radio transmission and reception (TDD) (3GPP TS 25.102 version 7.4.0 Release 7)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 301 489-1 [1] and the following apply:

camped on a cell: UE is in idle mode and has completed the cell selection/reselection process and has chosen a cell. The UE monitors system information and (in most cases) paging information

NOTE: The services may be limited, and the PLMN may not be aware of the existence of the UE within the chosen cell.

data application ancillary: ancillary which provides send and/or receive data access to UMTS services via UE

End-User data: manufacturer defined data patterns for data transfer testing

NOTE: Represents EUT's typical user application data pattern (e.g. photo, video, text file, message) in its characteristics.

idle mode: state of User Equipment (UE) when switched on but with no Radio Resource Control (RRC) connection

International Mobile Telecommunications 2000 (IMT-2000): third generation mobile systems which provide access, by means of one or more radio links, to a wide range of telecommunications services supported by the fixed telecommunication networks (e.g. PSTN, ISDN or IP), and to other services which are specific to mobile users

maximum average power: average transmitter output power obtained over any specified time interval, including periods with no transmission, when the transmit time slots are at the maximum power setting

traffic mode: state of User Equipment (UE) when switched on and with Radio Resource Control (RRC) connection established

Universal Terrestrial Radio Access (UTRA): radio access network of the telecommunications system, incorporating mobile cellular and other functionality, that is the subject of specifications produced by 3GPP

User Equipment (UE): "Mobile Station" (MS) which is an entity capable of accessing a set of UTRA services via one or more radio interfaces

NOTE: This entity may be stationary or in motion within the UTRA service area while accessing the UTRA services, and may simultaneously serve one or more users.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AC	Alternating Current
BER	Bit Error Ratio
BLER	Block Error Ratio
BPF	Band Pass Filter
BS	Base Station
BW	BandWidth
CF	Centre Frequency
CRC	Cyclic Redundancy Check
DL	Down Link (from BS to UE)
DRX	Discontinuous Reception
DTX	Discontinuous Transmission (see note)
EMC	ElectroMagnetic Compatibility
EUT	Equipment Under Test
FDD	Frequency Division Duplex
IMT-2000	International Mobile Telecommunications 2000
LR	Location Registration
MRP	Mouth Reference Point (artificial head)
MS	Mobile Station
RF	Radio Frequency
RRC	Radio Resource Control
SPL	Sound Pressure Level
TDD	Time Division Duplex
TT	Transient phenomena applied to Transmitters
UARFCN	UTRA Absolute Radio Frequency Channel Number (see note)
UE	User Equipment
UL	Up Link (From UE to BS)
UTRA	Universal Terrestrial Radio Access

NOTE: Refer to Terminology specifications TR 121 905 and TR 125 990 (see bibliography) for further details.

4 Test conditions

For the purpose of the present document, the test conditions of EN 301 489-1 [1], clause 4, shall apply as appropriate. Further product related test conditions for digital cellular mobile and portable radio equipment are specified in the present document.

4.1 General

Whenever the Equipment Under Test (EUT) is provided with a detachable antenna, the EUT shall be tested with the antenna fitted in a manner typical of normal intended use, unless specified otherwise.

4.2 Arrangements for test signals

The provisions of EN 301 489-1 [1], clause 4.2 shall apply with the following modifications.

The wanted RF signal nominal frequency shall be selected by setting the UTRA Absolute Radio Frequency Channel Number (UARFCN) to an appropriate number.

A communication link shall be set up with a suitable base station simulator (hereafter called "the test system"). The test system shall be located outside of the test environment.

Where possible the test of the transmitter section and receiver section of the EUT may be carried out simultaneously to reduce test time.

Immunity tests shall be performed in two modes of operation:

- with a communication link established (traffic mode); and
- in the idle mode.

When the EUT is required to be in the traffic mode, a call is set up according to the Generic call set-up procedure and the following conditions shall be met.

See TS 134 108 [6] and TS 134 109 [8] Logical Test Interface for details regarding generic call set-up procedure and BER, BLER test loop scenarios:

- set and send continuously Up power control commands to the UE;
- the DTX shall be disabled;
- Inner Loop Power Control shall be enabled;
- transmitting and/or receiving (UL/DL) bit rate for reference test channel shall be 12,2 kbit/s.

When the EUT is required to be in the idle mode the following conditions shall be met:

- UE shall be camped on a cell;
- UE shall perform Location Registration (LR) before the test, but not during the test;
- UE's neighbour cell list shall be empty;
- paging repetition period and DRX cycle shall be set to minimum (shortest possible time interval).

Adequate measures shall be taken to avoid the effect of immunity RF test signals on the measuring equipment.

4.2.1 Arrangements for test signals at the input of transmitters

The provisions of EN 301 489-1 [1], clause 4.2.1 shall apply.

4.2.2 Arrangements for test signals at the output of transmitters

The provisions of EN 301 489-1 [1], clause 4.2.2 shall apply with the following modifications.

Where the equipment incorporates an external 50 Ω RF antenna connector that is normally connected via a coaxial cable, then the wanted signal to establish a communication link shall be delivered from that connector by a coaxial cable.

Where the equipment incorporates an external 50 Ω RF antenna connector, but this port is not normally connected via a coaxial cable, and where the equipment does not incorporate an external 50 Ω RF connector (integral antenna equipment), then the wanted signal, to establish a communication link, shall be delivered from the equipment to an antenna located within the test environment.

4.2.3 Arrangements for test signals at the input of receivers

The provisions of EN 301 489-1 [1], clause 4.2.3 shall apply with the following modifications.

Where the equipment incorporates an external 50 Ω RF antenna connector that is normally connected via a coaxial cable, then the wanted signal to establish a communication link shall be delivered to that connector by a coaxial cable.

Where the equipment incorporates an external 50 Ω RF antenna connector, but this port is not normally connected via a coaxial cable, and where the equipment does not incorporate an external 50 Ω RF connector (integral antenna equipment), then the wanted signal, to establish a communication link, shall be presented to the equipment from an antenna located within the test environment.

For immunity testing the wanted RF signal level at the input of the EUT shall be at least 40 dB above the reference sensitivity level to provide a stable communication link. The reference sensitivity level is defined in TS 125 101 [7] and TS 125 102 [12].