

STN	Rozšírené digitálne bezšnúrové telekomunikácie (DECT) Špecifikácia skúšky Časť 1: Rádio	STN EN 300 176-1 V2.3.1 87 0176
------------	--	---

Digital Enhanced Cordless Telecommunications (DECT); Test specification; Part 1: Radio

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/19

Obsahuje: EN 300 176-1 V2.3.1:2018

128094

ETSI EN 300 176-1 V2.3.1 (2018-01)



Digital Enhanced Cordless Telecommunications (DECT); Test specification; Part 1: Radio

Reference

REN/DECT-00310

Keywords

DECT, radio, regulation, testing

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2018.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

3GPP™ and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M logo is protected for the benefit of its Members.

GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	10
Foreword.....	10
Modal verbs terminology.....	11
1 Scope	12
2 References	12
2.1 Normative references	12
2.2 Informative references	13
3 Definitions, symbols and abbreviations	14
3.1 Definitions	14
3.2 Symbols.....	17
3.3 Abbreviations	17
4 General	19
4.1 Document layout	19
4.1.1 Test suites	19
4.1.2 Test groups.....	19
4.1.3 Test cases	20
4.2 Presentation of equipment for testing purposes	20
4.2.0 General.....	20
4.2.1 Choice of model for testing (if applicable).....	20
4.2.2 Description of equipment.....	20
4.2.2.0 General	20
4.2.2.1 Protocol Implementation Conformance Statement (PICS)	21
4.2.2.2 Protocol Implementation Extra Information for Testing (PIXIT).....	21
4.2.2.3 Environmental test conditions.....	21
4.2.3 Host connected equipment	21
4.2.4 Manufacturer's declaration.....	21
4.3 Applicability of tests	21
4.3.0 General.....	21
4.3.1 Equipment that includes only a DECT RF receiver	22
4.3.2 Equipment that includes a radio transmitter	22
4.3.3 CTAs.....	22
4.3.4 Equipment with a synchronization port	22
4.3.5 Equipment incorporating the IPEI (PPs only).....	22
4.3.6 All FP equipment	22
4.3.7 PPs with direct PP to PP communication option	22
4.3.8 Installation related issues	22
4.3.9 Equipment with combined FT and PT functionality.....	22
4.3.9.0 General	22
4.3.9.1 Wireless Relay Station	23
4.3.9.2 Direct PP to PP communication	23
4.3.9.3 Distributed communications	23
4.3.10 Provision of 4 Mbit/s services. Equipment that is capable of using higher level modulation.....	23
4.3.11 Equipment supporting additional carriers	23
4.4 Interpretation of the measurement results	23
5 General test requirements.....	24
5.1 Test philosophy	24
5.2 Test site	25
5.2.1 Open air test site	25
5.2.1.1 Description	25
5.2.1.2 Calibration.....	25
5.2.2 Anechoic chamber	26
5.2.2.1 General	26
5.2.2.2 Description	26
5.2.2.3 Influence of parasitic reflections	29

5.2.2.4	Calibration and mode of use.....	29
5.2.3	Stripline coupler.....	29
5.2.3.0	General.....	29
5.2.3.1	Description.....	29
5.2.3.2	Calibration.....	29
5.2.3.3	Mode of use.....	29
5.3	Standard position.....	30
5.4	Test antenna of the LT.....	30
5.5	Substitution antenna.....	30
5.6	Test fixture.....	30
5.6.1	Description.....	30
5.6.1.0	General.....	30
5.6.1.1	Calibration of the test fixture for the measurement of transmitter characteristics.....	31
5.6.1.2	Calibration of the test fixture for the measurement of receiver characteristics.....	31
5.6.1.3	Mode of use.....	32
5.6.2	Equipment with a temporary or internal permanent antenna connector.....	32
5.6.2.0	General.....	32
5.6.2.1	Equipment with a temporary antenna connector.....	32
5.7	Indoor test site.....	33
5.7.0	General.....	33
5.7.1	Description.....	33
5.7.2	Test for parasitic reflections.....	34
5.7.3	Calibration and mode of use.....	34
5.8	Lower Tester (LT).....	34
5.8.1	Description.....	34
5.8.2	Connections between the EUT and the LT.....	34
5.8.3	Functions and abilities.....	35
5.8.4	Signal generation uncertainty.....	35
5.8.4.0	General.....	35
5.8.4.1	Modulated DECT-like carrier.....	35
5.8.4.2	CW interferers.....	35
5.8.4.3	DECT RF signal.....	35
5.8.4.4	Test modulation signals.....	35
5.8.5	Measurement uncertainty.....	36
5.9	Upper Tester (UT).....	36
5.9.1	Description of the UT.....	36
5.9.2	The test standby mode.....	36
5.9.3	Test messages.....	36
5.9.4	Dummy setting when EUT is a RFP and it is in test stand-by mode.....	37
5.10	Description of the lower tester FT and PT.....	37
5.11	General test methods.....	37
5.11.1	General.....	37
5.11.2	Sampling the RF signal.....	38
5.11.2.1	Introduction.....	38
5.11.2.2	Sampling method.....	38
5.11.3	Determining the reference position.....	38
5.11.3.0	General.....	38
5.11.3.1	Case 1: EUTs that cannot transmit.....	38
5.11.3.2	Case 2: EUTs that can transmit.....	38
5.11.4	Bit Error Rate (BER) and Frame Error Ratio (FER) measurements.....	38
5.12	Test setup.....	39
5.12.0	General.....	39
5.12.1	Test setup 1.....	39
5.12.2	Test setup 2.....	39
5.12.3	Test setup 3.....	39
5.12.4	Test setup 4.....	40
5.12.5	Test setup 5.....	40
5.13	Test arrangements for intermodulation measurements.....	41
5.13.1	PT to PT arrangement.....	41
5.13.2	FT to FT arrangement.....	41
5.13.3	FT to PT arrangement.....	42

6	Test conditions, power sources and ambient temperatures	42
6.1	General	42
6.2	Nominal test conditions	43
6.3	Extreme test conditions	43
6.4	Test power source - general requirements	44
6.5	Nominal test power source	45
6.5.1	Mains voltage	45
6.5.2	Regulated lead acid battery power sources	45
6.5.3	Nickel cadmium battery	45
6.5.4	Other power sources	45
6.6	Extreme test power source	45
6.6.1	Mains voltage	45
6.6.2	Regulated lead acid battery power sources	45
6.6.3	Nickel cadmium battery	45
6.6.4	Other power sources	45
6.7	Testing of host connected equipment and plug-in cards	46
6.7.0	Approaches	46
6.7.1	Alternative A: composite equipment	46
6.7.2	Alternative B: use of a test jig and three hosts	46
7	Accuracy and stability of RF carriers	46
7.0	Requirements	46
7.1	Definition	46
7.2	Test environment	47
7.3	Method of measurement	47
7.4	Verdict criteria when the EUT is a RFP	48
7.5	Verdict criteria when the EUT is a PP	48
8	Accuracy and stability of timing parameters	48
8.0	Requirements	48
8.1	Slot structure definitions	48
8.2	Definition of the position of p0	48
8.3	Measurement of packet timing jitter	49
8.3.1	Test environment	49
8.3.2	Method of measurement	49
8.3.3	Verdict criteria	49
8.4	Measurement of the reference timing accuracy of a RFP	49
8.4.1	Test environment	49
8.4.2	Method of measurement	50
8.4.3	Verdict criteria	50
8.5	Measurement of packet transmission accuracy of a PP	50
8.5.1	Test environment	50
8.5.2	Method of measurement	50
8.5.3	Verdict criteria	51
9	Transmission burst	51
9.0	Requirements	51
9.1	Definitions	51
9.1.1	Physical packets	51
9.1.2	Transmitted power	51
9.1.3	Normal Transmitted Power (NTP)	51
9.1.4	Transmitter attack time	52
9.1.5	Transmitter release time	52
9.1.6	Minimum power	52
9.1.7	Maximum power	52
9.1.8	Maintenance of transmission after packet end	52
9.1.9	Transmitter idle power output	52
9.1.10	Nominal transceiver definition	52
9.1.11	P _{NTP} definition	52
9.1.12	Multi-transceiver systems	53
9.2	Test environment	53
9.3	Method of measurement	53
9.4	Verdict criteria	53

10	Transmitted power.....	54
10.0	Requirements.....	54
10.1	Definitions.....	54
10.1.1	PP and RFP with an integral antenna.....	54
10.1.2	PP and RFP with external connections for all antennas.....	54
10.1.3	PP and RFP with both integral and external antennas	54
10.2	PP and RFP with an integral antenna	55
10.2.1	Test environment	55
10.2.2	Method of measurement	55
10.2.2.0	General	55
10.2.2.1	Measurement of NTP	55
10.2.2.2	Measurement of antenna gain	55
10.2.2.3	Determination of EIRP	56
10.2.3	Verdict criteria for all EUTs	56
10.3	PP and RFP with external antenna connection(s).....	56
10.3.1	Test environment	56
10.3.2	Method of measurement	56
10.3.3	Verdict criteria for all EUTs	57
11	RF carrier modulation	57
11.0	Requirements.....	57
11.1	Test environment.....	57
11.2	Method of measurement, parts 1 and 2.....	57
11.2.0	General.....	57
11.2.1	Part 1.....	57
11.2.2	Part 2.....	57
11.3	Method of measurement, parts 3 and 4.....	58
11.3.0	General.....	58
11.3.1	Part 3.....	58
11.3.2	Part 4.....	58
11.4	Verdict criteria for part 1.....	59
11.5	Verdict criteria for part 2.....	59
11.6	Verdict criteria for part 3.....	59
11.7	Verdict criteria for part 4.....	59
12	Unwanted RF power radiation	61
12.1	General test conditions	61
12.2	Emissions due to modulation.....	61
12.2.0	Requirements	61
12.2.1	Definition.....	61
12.2.2	Test environment	61
12.2.3	Method of measurement	61
12.2.4	Verdict criteria	62
12.3	Emissions due to transmitter transients	62
12.3.0	Requirements	62
12.3.1	Definition.....	62
12.3.2	Test environment	62
12.3.3	Method of measurement	63
12.3.4	Verdict criteria	63
12.4	Emissions due to intermodulation	64
12.4.0	Requirements	64
12.4.1	Definition.....	64
12.4.2	Test environment	64
12.4.3	Method of measurement	64
12.4.4	Verdict criteria	65
12.5	Spurious emissions when allocated a transmit channel	65
12.5.0	Requirements	65
12.5.1	Definition.....	65
12.5.2	Radiated emissions	65
12.5.2.1	Test environment.....	65
12.5.2.2	Method of measurement.....	65
12.5.2.3	Verdict criteria	66

12.5.3	Conducted spurious emissions when the EUT has a permanent external antenna connector	67
12.5.3.1	Test environment.....	67
12.5.3.2	Method of measurement.....	67
12.5.3.3	Verdict criteria	67
13	Radio receiver testing.....	67
13.1	Radio receiver sensitivity	67
13.1.0	Requirements	67
13.1.1	Definition.....	68
13.1.2	Test environment	68
13.1.3	Method of measurement	68
13.1.4	Verdict criteria.....	68
13.2	Radio receiver reference BER and FER	68
13.2.0	Requirements	68
13.2.1	Definition.....	68
13.2.2	Test environment	68
13.2.3	Method of measurement	69
13.2.4	Verdict criteria.....	69
13.3	Radio receiver interference performance.....	69
13.3.0	Requirements	69
13.3.1	Definition.....	69
13.3.2	Test environment	69
13.3.3	Method of measurement	69
13.3.4	Verdict criteria.....	70
13.4	Radio receiver blocking case 1: owing to signals occurring at the same time but on other frequencies	70
13.4.0	Requirements	70
13.4.1	Definition.....	70
13.4.2	Test environment	70
13.4.3	Method of measurement	70
13.4.4	Verdict criteria.....	71
13.5	Radio receiver blocking case 2: owing to signals occurring at a different time	72
13.5.0	Requirements	72
13.5.1	Definition.....	72
13.5.2	Test environment	72
13.5.3	Method of measurement	72
13.5.4	Verdict criteria.....	73
13.6	Receiver intermodulation performance	73
13.6.0	Requirements	73
13.6.1	Definition.....	73
13.6.2	Test environment	73
13.6.3	Method of measurement	73
13.6.4	Verdict criteria.....	74
13.7	Spurious emissions when the PP has no allocated transmit channel	74
13.7.0	Requirements	74
13.7.1	Definition.....	74
13.7.2	Test environment	74
13.7.3	Method of measurement	74
13.7.4	Verdict criteria (outside the DECT band).....	74
13.7.5	Verdict criteria (inside the DECT band).....	75
14	Intersystem synchronization (FP only).....	75
14.0	Requirements.....	75
14.1	Description	75
14.2	Test environment.....	75
14.3	Wired synchronization ports.....	75
14.3.1	FP as a master	75
14.3.1.1	Method of measurement.....	75
14.3.1.2	Verdict criteria	76
14.3.2	FP as a slave.....	76
14.3.2.1	Method of measurement.....	76
14.3.2.2	Verdict criteria	77
14.4	GPS synchronization	77

14.4.1	FP with integrated Global Positioning System (GPS) synchronization	77
14.4.1.1	Method of measurement	77
14.4.1.2	Verdict criteria	77
14.4.2	External GPS synchronization device	78
14.4.2.1	Method of measurement	78
14.4.2.2	Verdict criteria	78
15	EMC	78
16	Equipment identity testing	78
16.0	General	78
16.1	PP	78
16.2	FP	79
17	Efficient use of the radio spectrum	79
17.1	Channel selection	79
17.2	Channel confirmation	79
17.2.1	For the PT	79
17.2.2	For the FT	79
17.3	Channel release	80
17.4	General	80
17.5	Channel selection and confirmation for DECT ULE	80
17.5.1	General	80
17.5.2	For the PT	80
17.5.3	For the FT	81
18	WRS testing	81
18.0	General	81
18.1	Testing as a PP	81
18.2	Testing as an RFP	81
18.3	Manufacturer's declarations	82
19	Requirements for PPs with direct PP to PP communication mode	82
19.0	General	82
19.1	Setting the EUT in direct communications mode	82
19.2	When the EUT has not initiated a call	83
19.3	When the EUT initiates a call	83
19.4	Manufacturer's declarations	83
20	Distributed communications	83
20.0	General	83
20.1	Testing as a PP	84
20.2	Testing as an RFP	84
20.3	Manufacturer's declaration	85
21	Higher level modulation options	85
21.0	General	85
21.1	Activation of higher level modulations when EUT is in test stand-by mode	85
21.2	Manufacturer's declaration	86
Annex A (normative):	Procedures for test fixture calibration and for measurement of radiated spurious emissions	87
A.1	Calibration of test fixture for receiver measurements	87
A.1.0	General	87
A.1.1	Method of measurement	87
A.2	Radiated measurements	89
A.2.1	General	89
A.2.2	Radiated spurious emissions	89
A.2.2.1	Definition	89
A.2.2.2	Method of measurement	90
A.2.3	Cabinet radiation	91
A.2.3.1	Definition	91
A.2.3.2	Method of measurement	92

Annex B (normative):	Procedure for measurement of conducted spurious emissions	93
B.1	Conducted spurious emissions	93
B.1.1	Definition	93
B.1.2	Method of measurement	93
Annex C (normative):	Test Support Profile (TSP).....	94
C.1	Introduction	94
C.2	Standardized symbols for the status column	94
C.3	Capabilities of PP (EUT) under test	95
C.3.1	Services	95
C.3.2	Messages	95
C.3.3	Message parameters	97
C.3.4	Procedure support.....	101
C.3.5	CSF multiplexing functions.....	101
C.3.6	Timer and counter support.....	102
C.4	Capabilities of FP (EUT) under test	103
C.4.1	Services	103
C.4.2	Messages	103
C.4.3	Message parameters	105
C.4.4	Procedure support.....	109
C.4.5	CSF multiplexing functions.....	109
C.4.6	Timer and counter support.....	110
Annex D (normative):	Measurement of BER and FER.....	111
Annex E (informative):	Procedures for the measurement of synchronization loss at the EUT by the LT	112
E.1	Description	112
E.2	Method	112
Annex F (informative):	Guide lines for installation related issues	113
F.0	General	113
F.1	Antennas with directivity	113
F.2	DECT frame synchronization.....	113
F.2.0	General	113
F.2.1	Guidance for installation of frame synchronized DECT systems.....	114
F.2.1.1	GPS synchronization.....	114
F.2.1.2	Wired synch port synchronization	114
F.2.1.3	Requirements for DECT air synchronization.....	115
History		116

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Digital Enhanced Cordless Telecommunications (DECT).

The present document contains text pertaining to testing of the Digital Enhanced Cordless Telecommunications (DECT) Common Interface [1] to [4] and [i.11] to [i.14]. Such text should be considered as guidance to approval (or licensing) authorities.

Details of the DECT Common Interface may be found in ETSI EN 300 175 [1] to [4] and [i.11] to [i.14]. Further details of the DECT system may be found in the ETSI Technical Reports, ETSI TR 101 178 [i.1] and ETSI ETR 043 [i.2]. Information about ULE may be found in the ETSI Technical Specifications ETSI TS 102 939-1 [i.20] and ETSI TS 102 939-2 [i.21].

The present document is part 1 of a multi-part deliverable covering the test specification for Digital Enhanced Cordless Telecommunications (DECT), as identified below:

Part 1: "Radio";

Part 2: "Audio and speech".

National transposition dates	
Date of adoption of this EN:	25 January 2018
Date of latest announcement of this EN (doa):	30 April 2018
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 October 2018
Date of withdrawal of any conflicting National Standard (dow):	31 October 2018

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

1 Scope

The present document specifies tests applicable to all Digital Enhanced Cordless Telecommunications (DECT) equipment accessing the DECT frequency band 1 880 MHz to 1 900 MHz (including provisions for testing other or extended frequency bands as described in ETSI EN 300 175-1 [i.11] and ETSI EN 300 175-2 [1]). Part 2 of the present multi-part deliverable [i.15] specifies tests applicable to DECT speech and audio transmission using a collection of speech codecs, including Recommendation ITU-T G.726 [i.7] ADPCM codec, Recommendation ITU-T G.722 [i.8] "7 kHz codec", "MPEG-4 codec" [i.10] and others.

The aims of the present document are to ensure:

- efficient use of frequency spectrum;
- no harm done to any connected network and its services;
- no harm done to other radio networks and services;
- no harm done to other DECT equipment or its services;
- interworking of terminal equipment via the public network.

The tests of ETSI EN 300 176 are split into two parts:

- the present document (part 1) covers testing of radio frequency parameters, security elements and those DECT protocols that facilitate the radio frequency tests and efficient use of frequency spectrum;
- part 2 [i.15] describes testing of speech and audio requirements between network interface and DECT PT, or between a DECT CI air interface and alternatively a DECT PT or FT. Part 2 is not applicable to terminal equipment specially designed for the disabled (e.g. with amplification of received speech as an aid for the hard-of-hearing).

DECT terminal equipment consists of the following elements:

- a) Fixed Part (FP);
- b) Portable Part (PP);
- c) Cordless Terminal Adapter (CTA);
- d) Wireless Relay Station (WRS) (FP and PP combined);
- e) Hybrid Part (HyP) (a PP with capability to act as a FP to provide PP to PP communication).

Details of the DECT Common Interface may be found in ETSI EN 300 175-1 [i.11], ETSI EN 300 175 parts 2 to 3 [1] to [2], ETSI EN 300 175-4 [i.12], ETSI EN 300 175 parts 5 to 6 [3] to [4], and ETSI EN 300 175 parts 7 to 8 [i.13] to [i.14]. Further details of the DECT system may be found in the ETSI Technical Reports, ETSI TR 101 178 [i.1] and ETSI ETR 043 [i.2]. Information about ULE may be found in the ETSI Technical Specifications ETSI TS 102 939-1 [i.20] and ETSI TS 102 939-2 [i.21].

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://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.

The following referenced documents are necessary for the application of the present document.

- [1] ETSI EN 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical Layer (PHL)".
- [2] ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".
- [3] ETSI EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".
- [4] ETSI EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".
- [5] Recommendation ITU-T V.11: "Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s".
- [6] Recommendation ITU-T O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".
- [7] ETSI EN 300 700: "Digital Enhanced Cordless Telecommunications (DECT); Wireless Relay Station (WRS)".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TR 101 178: "Digital Enhanced Cordless Telecommunications (DECT); A High Level Guide to the DECT Standardization".
- [i.2] ETSI ETR 043: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Services and facilities requirements specification".
- [i.3] ETSI EN 301 649: "Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS)".
- [i.4] ETSI TS 102 527-1: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 1: Wideband speech".
- [i.5] ETSI TS 102 527-2: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 2: Support of transparent IP packet data".
- [i.6] ETSI TS 102 527-3: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 3: Extended Wideband speech services".
- [i.7] Recommendation ITU-T G.726 (1990): "40, 32, 24, 16 kbit/s Adaptive Differential Pulse Code Modulation (ADPCM)".
- [i.8] Recommendation ITU-T G.722: "7 kHz audio - coding within 64 kbit/s".
- [i.9] Void.

- [i.10] ISO/IEC JTC1/SC29/WG11 (MPEG): International Standard ISO/IEC 14496-3:2005/AMD 1:2007: "Information Technology - Coding of audio-visual objects - Part 3: Audio; AMENDMENT 1: Low Delay AAC profile".
- [i.11] ETSI EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".
- [i.12] ETSI EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".
- [i.13] ETSI EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".
- [i.14] ETSI EN 300 175-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech and audio coding and transmission".
- [i.15] ETSI EN 300 176-2: "Digital Enhanced Cordless Telecommunications (DECT); Test specification; Part 2: Audio and speech".
- [i.16] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- NOTE: See also ITU-T Recommendation X.290.
- [i.17] Void.
- [i.18] Council Directive 2004/108/EC of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC.
- [i.19] ETSI EN 301 406: "Digital Enhanced Cordless Telecommunications (DECT); Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU".
- [i.20] ETSI TS 102 939-1: "Digital Enhanced Cordless Telecommunications (DECT); Ultra Low Energy (ULE); Machine to Machine Communications; Part 1: Home Automation Network (phase 1)".
- [i.21] ETSI TS 102 939-2: "Digital Enhanced Cordless Telecommunications (DECT); Ultra Low Energy (ULE); Machine to Machine Communications; Part 2: Home Automation Network (phase 2)".
- [i.22] ETSI TR 100 028: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [i.23] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN