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

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**ICS:**

33.070.30      Öä åæ } ^/á à[ |zæ ^      Digital Enhanced Cordless  
à!^: ç|çã } ^/á |^ \ [ { ~ } ä åä      Telecommunications (DECT)  
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# EN 300 176-1 V1.3.2 (1999-06)

*European Standard (Telecommunications series)*

## **Digital Enhanced Cordless Telecommunications (DECT); Approval test specification; Part 1: Radio**

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## Intellectual Property Rights

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 SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available **free of charge** from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

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 SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Project Digital Enhanced Cordless Telecommunications (DECT).

The present document contains text pertaining to approval testing of the Digital Enhanced Cordless Telecommunications (DECT) Common Interface. Such text should be considered as guidance to approval (or licensing) authorities.

Details of the DECT Common Interface may be found in EN 300 175 parts 1 to 7 [1] to [7]. Further details of the DECT system may be found in the ETSI Technical Reports, ETR 015 [21], ETR 043 [22], and ETR 056 [23].

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

**Part 1: "Radio";**

Part 2: "Speech".

Annex J has been removed, as the GPS synchronization requirements are now specified in EN 300 175-2 [2].

### National transposition dates

Date of adoption of this EN:	4 June 1999
Date of latest announcement of this EN (doa):	30 September 1999
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 March 2000
Date of withdrawal of any conflicting National Standard (dow):	31 March 2000

# 1 Scope

The present document specifies the approval 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) and the approval tests applicable to DECT speech transmission using ITU-T Recommendation G.726 [14] ADPCM speech codec at 32 kbit/s.

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,

through testing those provisions of EN 300 175, parts 1 to 7 [1] to [7] which are relevant to these aims.

The tests of the present document split into two parts:

- this part 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 describes testing of DECT 32 kbit/s ADPCM speech 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 comprises two equipment elements, referred to as a Fixed Part (FP) and a Portable Part (PP). Part 2 of the present document is structured to allow type approval of either:

- a) the FP and PP together; or <https://standards.iteh.ai/catalog/standards/sist/0196570b-834d-4b95-ad7c-c0c5756ddcf0/sist-en-300-176-1-v1-3-2-2003>
- b) the FP and PP as separate items.

Additional tests apply for equipment implementing ETSI defined profiles (e.g. GAP, DECT-GSM, DECT-ISDN). These tests are found in related ENs and may supersede the requirements of 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, 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.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".
- [2] EN 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical layer (PHL)".

- [3] EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".
- [4] EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".
- [5] EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".
- [6] EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".
- [7] EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".
- [8] EN 300 175-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech coding and transmission".
- [9] ISO/IEC 9646-1 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts". (See also CCITT Recommendation X.290 (1991)).
- [10] CCITT Recommendation V.11 (1988): "Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s".
- [11] CCITT Recommendation O.153 (1988): "Basic parameters for the measurement of error performance at bit rates below the primary rate".
- [12] 98/13/EC: "Council Directive of 12 February 1998 on the approximation of the laws of the Member States concerning telecommunications terminal equipment and satellite earth station equipment, including the mutual recognition of their conformity" (Terminal Directive).
- [13] EN 55022: "Limits and methods of measurements of radio interferers characteristics of information technology equipment".  
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- [14] ITU-T Recommendation G.726 (1990): "40, 32, 24, 16 kbit/s adaptive differential pulse code modulation (ADPCM)".
- [15] 89/336/EEC: "Council Directive of 3rd May 1989 on the approximation of the laws of the Member States relating to Electromagnetic Compatibility" (EMC Directive).
- [16] EN 300 700: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Wireless Relay Station (WRS)".
- [17] DT.04: "Recommendations for the accredited conformance testing of DECT equipment".
- [18] TBR 006: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements".
- [19] TBR 010: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements; Telephony applications".
- [20] TBR 022: "Radio Equipment and Systems (RES); Attachment requirements for terminal equipment for Digital Enhanced Cordless Telecommunications (DECT) Generic Access Profile (GAP) applications".
- [21] ETR 015: "Digital Enhanced Cordless Telecommunications (DECT); Reference document".
- [22] ETR 043: "Digital Enhanced Cordless Telecommunications (DECT); Common interface; Services and facilities requirements specification".
- [23] ETR 056: "Digital Enhanced Cordless Telecommunications (DECT); System description document".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**antenna diversity:** antenna diversity implies that the Radio Fixed Part (RFP) for each bearer independently can select different antenna properties such as gain, polarization, coverage patterns, and other features that may effect the practical coverage. A typical example is space diversity, provided by two vertically polarized antennas separated by 10 cm to 20 cm

**bearer handover:** internal handover process provided by the Medium Access Control (MAC) layer, whereby one MAC connection can modify its underlying bearers while maintaining the service provided to the Data Link Control (DLC) layer

NOTE 1: Bearer handover is slot based.

**cell:** domain served by a single antenna system (including a leaky feeder) of one FP

NOTE 2: A cell may include more than one source of radiated Radio Frequency energy (i.e. more than one Radio End Point).

**Central Control Fixed Part (CCFP):** physical grouping that contains the central elements of a FP. A FP shall contain a maximum of one CCFP

NOTE 3: A CCFP controls one or more RFPs.

**conducted measurements:** measurements which are made using a direct connection to the equipment under test

**DECT-like carrier:** modulated RF DECT carrier used for interference testing which conforms to the requirements in EN 300 175-2 [2] in terms of frequency and timing and uses a pseudo-random sequence for modulation

**Double Slot (SLOT):** one 12th of a Time Division Multiple Access (TDMA) frame which is used to support one high capacity physical channel

**duplex bearer:** use of two simplex bearers operating in opposite directions on two physical channels. These pairs of channels always use the same RF carrier and always use evenly spaced slots (i.e. separated by 0,5 TDMA frame)

**Equipment Under Test (EUT):** equipment submitted to the test laboratory for type examination

**Fixed Part (DECT Fixed Part) (FP):** physical grouping that contains all of the elements in the DECT network between the local network and the DECT air interface

NOTE 4: A DECT FP contains the logical elements of at least one Fixed radio Termination (FT), plus additional implementation specific elements.

**Fixed radio Termination (FT):** logical group of functions that contains all of the DECT processes and procedures on the fixed side of the DECT air interface

NOTE 5: A FT only includes elements that are defined in the DECT CI standard. This includes radio transmission elements (layer 1) together with a selection of layer 2 and layer 3 elements

**full slot (slot):** one 24th of a TDMA frame which is used to support one physical channel

**half slot:** one 48th of a TDMA frame which is used to support one physical channel

**handover:** process of switching a call in progress from one physical channel to another physical channel. These processes can be internal or external

NOTE 6: There are two physical forms of handover: intra-cell handover and inter-cell handover. Intra-cell handover is always internal. Inter-cell handover can be internal or external.