ETSI TS 102 841 V1.1.1 (2010-04)

Technical Specification

Digital Enhanced Cordless Telecommunications (DECT);
New Generation DECT;
Extended wideband speech services;
Profile Test Specification (PTS) and Test Case Library (TCL)

Reference

DTS/DECT-NG258

Keywords

DECT, testing, codec, GAP, IMT-2000, interoperability, IP, profile, speech

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Digital Enhanced Cordless Telecommunications (DECT).

The present document is based on EN 300 175 parts 1 [1] to 8 [8], EN 300 444 [12], TS 102 527-1 [13] and TS 102 527-3 [14]. General attachment requirements and speech attachment requirements are based on EN 300 176-1 [9], EN 301 406 [11] (replacing TBR 006 [i.2]) and EN 300 176-2 [10] (previously covered by TBR 010 [i.3]). Further details of the DECT system may be found in TR 101 178 [i.1].

The information in the present document is believed to be correct at the time of publication. However, DECT standardization is a rapidly changing area, and it is possible that some of the information contained in the present document may become outdated or incomplete within relatively short time-scales.

All numbers and names used in examples are imaginary. Any similarities to actual persons, places or directory numbers is merely coincidental.

1 Scope

The present document contains the Profile Test Specification (PTS) and the Test Case Library (TCL) for "New Generation DECT; Part 3: Extended wideband speech" (TS 102 527-3 [14]). The present document covers both the Portable (PT) and the Fixed (FT) Radio terminations.

The Test Case Library (TCL) covers also some test cases for "DECT New Generation; part 1; Wideband speech" (TS 102 527-1 [13]) and for the "Generic Access Profile" (EN 300 444 [12]). This is done because such test cases are mandatory or especially relevant for New Generation DECT part 3 (see TS 102 527-3 [14]), and are not covered by existing GAP test specifications.

Due to the ascending compatibility of DECT profiles, all New Generation DECT part 3 devices (see TS 102 527-3 [14]) are required to be also compliant with "DECT New Generation; part 1; Wideband speech" (TS 102 527-1 [13]) and with the "Generic Access Profile" (GAP, EN 300 444 [12]). However, with the exception of some specific test cases, as noted above, the present document does not cover the compliance with GAP that is assumed to be enforced by separate test specifications (see note).

NOTE: The industry de-facto standard practice for insuring the compliance to GAP [12] is the use of TBR 022 [i.4] amended by TBR 022/A1 [i.5], even when these two documents do not have any longer their initial regulatory signification. TBR 022 [i.4] relies on the GAP Profile Test Specification (EN 300 494 parts 1 [i.6] to 3 [i.8]) and on the DECT Test Case Library (EN 300 497 parts 1 [i.9] to 9 [i.17]).

The objective of the present document is to provide a basis for approval tests of NG-DECT Part 3 equipment giving a high probability of air interface inter-operability between different manufacturer's DECT equipment.

2 References

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.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
  - for informative references.

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

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2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

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

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

[3] ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".

[4] ETSI EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".

[5] ETSI EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".

[6] ETSI EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".

[7] ETSI EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".

[8] ETSI EN 300 175-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech and audio coding and transmission".

[9] ETSI EN 300 176-1: "Digital Enhanced Cordless Telecommunications (DECT); Test specification; Part 1: Radio".

[10] ETSI EN 300 176-2: "Digital Enhanced Cordless Telecommunications (DECT); Test specification; Part 2: Audio and speech".

[11] ETSI EN 301 406: "Digital Enhanced Cordless Telecommunications (DECT); Harmonized EN for Digital Enhanced Cordless Telecommunications (DECT) covering the essential requirements under article 3.2 of the R&TTE Directive; Generic radio".

[12] ETSI EN 300 444: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP)".

[13] ETSI TS 102 527-1: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 1: Wideband Speech".

[14] ETSI TS 102 527-3: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 3: Extended wideband speech services".

[15] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

[i.1] ETSI TR 101 178: "Digital Enhanced Cordless Telecommunications (DECT); A high Level Guide to the DECT Standardization".

[i.2] ETSI TBR 006: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements".

[i.3] ETSI TBR 010: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements: Telephony applications".

[i.4] ETSI TBR 022: "Radio Equipment and Systems (RES); Attachment requirements for terminal equipment for Digital Enhanced Cordless Telecommunications (DECT) Generic Access Profile (GAP) applications".

[i.5] ETSI TBR 022/A1: Amendment to: "Radio Equipment and Systems (RES); Attachment requirements for terminal equipment for Digital Enhanced Cordless Telecommunications (DECT) Generic Access Profile (GAP) applications".

[i.6] ETSI EN 300 494-1: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP); Profile Test Specification (PTS); Part 1: Summary".

[i.7] ETSI EN 300 494-2: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP); Profile Test Specification (PTS); Part 2: Profile Specific Test Specification (PSTS) - Portable radio Termination (PT)".

[i.8] ETSI EN 300 494-3: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP); Profile Test Specification (PTS); Part 3: Profile Specific Test Specification (PSTS) - Fixed radio Termination (FT)".

[i.9] ETSI EN 300 497-1: "Digital Enhanced Cordless Telecommunications (DECT);Common Interface (CI); Test Case Library (TCL); Part 1: Test Suite Structure (TSS) and Test Purposes (TP) for Medium Access Control (MAC) layer".

[i.10] ETSI EN 300 497-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI);Test Case Library (TCL); Part 2: Abstract Test Suite (ATS) for Medium Access Control (MAC) layer - Portable radio Termination (PT)".

[i.11] ETSI EN 300 497-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI);Test Case Library (TCL); Part 3: Abstract Test Suite (ATS) for Medium Access Control (MAC) layer - Fixed radio Termination (FT)".

[i.12] ETSI EN 300 497-4: "Digital Enhanced Cordless Telecommunications (DECT);Common Interface (CI);Test Case Library (TCL);Part 4: Test Suite Structure (TSS) and Test Purposes (TP) - Data Link Control (DLC) layer".

[i.13] ETSI EN 300 497-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI);Test Case Library (TCL); Part 5: Abstract Test Suite (ATS) - Data Link Control (DLC) layer".

[i.14] ETSI EN 300 497-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI);Test Case Library (TCL); Part 6: Test Suite Structure (TSS) and Test Purposes (TP) - Network (NWK) layer - Portable radio Termination (PT)".

[i.15] ETSI EN 300 497-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI);Test Case Library (TCL); Part 7: Abstract Test Suite (ATS) for Network (NWK) layer - Portable radio Termination (PT)".

[i.16] ETSI EN 300 497-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI);Test Case Library (TCL); Part 8: Test Suite Structure (TSS) and Test Purposes (TP) - Network (NWK) layer - Fixed radio Termination (FT)".

[i.17] ETSI EN 300 497-9: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI);Test Case Library (TCL); Part 9: Abstract Test Suite (ATS) for Network (NWK) layer - Fixed radio Termination (FT)".

[i.18] ITU-T Recommendation P.311 (2005): "Transmission characteristics for wideband (150-7000 Hz) digital handset telephones".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 102 527-3 [14], TS 102 527-1 [13], EN 300 444 [12] and the following apply.

NG-DECT Part 1 (equipment): equipment complying with TS 102 527-1 [13]

NG-DECT Part 3 (equipment): equipment complying with TS 102 527-3 [14]

NG-DECT Part 1 Golden Device: Golden Device ,such as the one administered by the DECT Forum, used for compliance testing of NG-DECT Part 1 [13] equipment

Golden device: ideal example of a device used as reference device for compliance testing and against which later devices are tested and judged

3.2 Symbols

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

M	mandatory to support (provision mandatory, process mandatory)
O	optional to support (provision optional, process mandatory)
I	out-of-scope (provision optional, process optional) not subject for testing
C	conditional to support (process mandatory)
N/A	not applicable (in the given context the present document makes it impossible to use this capability)

Provision mandatory, process mandatory means that the indicated feature service or procedure shall be implemented as described in the present document, and may be subject to testing.

Provision optional, process mandatory means that the indicated feature, service or procedure may be implemented, and if implemented, the feature, service or procedure shall be implemented as described in the present document, and may be subject to testing.

NOTE: The used notation is based on the notation proposed in ISO/IEC 9646-7 [15].

3.3 Abbreviations

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

AC	Authentication Code
CC	Call Control
CFB	Call forwarding on Busy subscriber
CFNA	Call forwarding on No Answer
CFU	Call forwarding Unconditional
CI	Common Interface
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CNIP	Calling Name Identification Presentation
DECT	Digital Enhanced Cordless Telecommunications
DLC	Data Link Control
DTMF	Dual Tone Multi-Frequency
FP	Fixed Part
FT	Fixed radio Termination
GAP	Generic Access Profile
HPP	Headset Portable Part
HTTP	HyperText Transfer Protocol
IE	Information Element
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
IWU	InterWorking Unit
IXIT	Implementation eXtra Information for Testing
LiA	List Access
MAC	Medium Access Control
MM	Mobility Management
MMI	Mand and Machine Interface
NB	Narrow Band
NDT	Network Delay Type
NG	New Generation
NG-DECT	New Generation DECT
NWK	NetWorK
PHL	PHysical Layer
PIN	Personnal Identification Number
PP	Portable Part

PT	Portable radio Termination
PTS	Profile Test Specification
RF	Radio Frequency
TCL	Test Case Library
TS	Test System
VoIP	Voice over IP
WB	WideBand

4 Test method

This Clause describes the test method used to test the NG-DECT Part 3 devices.

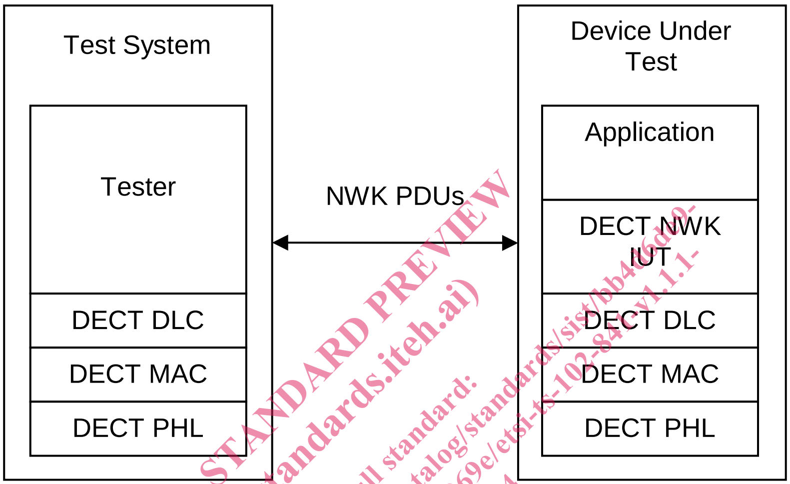


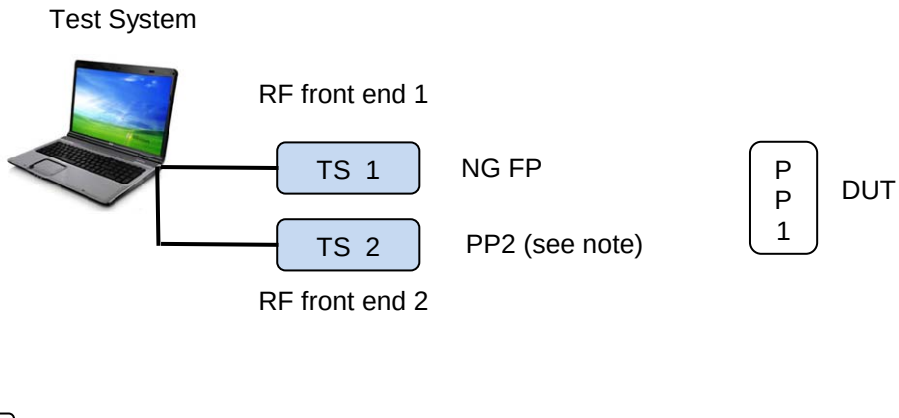
Figure 1: New Generation DECT remote test method

Tester: A tester is located in a remote DECT test system. It controls and observes the behaviour of the Implementation Under Test (IUT). The TS behaves as a FP (or a PP) when testing a PP (respectively a FP).

4.1 Test platform

4.1.1 PP test platform

The PP test platform is depicted on figure 2.



NOTE: PP2 behaves either as a NG PP or a legacy GAP PP according to test case

Figure 2: PP test platform

The first RF front-end of Test system "TS_1" plays the role of a NG FP to which the tested PP is paired.

The following devices are needed to perform parallel call test cases: either a NG PP or a GAP legacy PP. The second RF front-end of Test system "TS_2" plays the role of one of these PPs according to test case condition.

4.1.1.1 List content for tests

The following list contents will be used by the tester when running List access PP test cases.

4.1.1.1.1 List of supported lists

All lists are supported (list identifiers from 00H to 09H).

4.1.1.1.2 Missed calls list

Presence of 3 missed calls with a total number of 10 entries in the list.

Table 1: Missed calls test list content

Number	Name	Date and time	Unread	Line name	Line id	Nb of calls
497312456897	JENDREZEJZAK	09/09/09 06:45:00	1	Provider 1	0, 0, 0	2
0145567897		06/09/09 18:48:00	1	Provider 1	0, 0, 0	3
00441324778824	C.Alexander	06/09/09 15:36:36	0	Provider 1	0, 0, 0	1
0321259514	LE BIHAN	06/09/09 15:36:00	1	Provider 2	0, 0, 1	1
0296301005		06/09/09 12:35:00	0	Provider 1	0, 0, 0	1
008989945270	M.UWE	02/09/09 11:17:00	0	Provider 3	0, 0, 2	1
0177476923	C.FENRIJO	01/09/09 14:08:00	0	Provider 1	0, 0, 0	1
4526300099446770	B.ZIMMERMANN	30/08/09 18:50:00	0	Provider 3	0, 0, 2	1
0675000209	R.ALOUSSI	22/08/09 12:00:00	0	Provider 1	0, 0, 0	1
0247413706	VAN DER VYNC	20/08/09 18:15:00	0	Provider 2	0, 0, 1	1

Properties

For all fields, editable=0.

4.1.1.1.3 Outgoing calls list

Total number of 10 entries in the list.

Table 2: Outgoing calls test list content

Number	Name	Date and time	Line name	Line id
008989945270	UWE	08/09/09 13:13:13	Provider 1	0, 0, 0
0145567897		07/09/09 09:09:09	Provider 1	0, 0, 0
0675000321	WOJCIECHOSKI	06/09/09 08:33:33	Provider 1	0, 0, 0
0612345678	FENJIRO	06/09/09 08:22:22	Provider 2	0, 0, 2
0490413002	FENJIRO	06/09/09 08:12:12	Provider 2	0, 0, 2
00550123456789	G. DEL PIETRO	03/09/09 07:07:07	Provider 3	0, 0, 0
4526300099446770	B.ZIMMERMANN	31/08/09 23:23:23	Provider 1	0, 0, 0
00449876543210	C.ALEXANDER	31/08/09 16:16:16	Provider 3	0, 0, 2
0296301005		28/08/09 17:17:17	Provider 1	0, 0, 0
02298951214	LAGADEC	27/08/09 18:18:18	Provider 1	0, 0, 0

Properties

For all fields, editable=0.

4.1.1.1.4 Incoming accepted calls list

Total number of 10 entries in the list.

Table 3: Incoming accepted calls test list content

Number	Name	Date Time	Line name	Line id
02298951214	J.LAGADEC	07/09/09 12:12:12	Provider 1	0, 0, 0
0321259514	LE BIHAN	06/09/09 18:36:18	Provider 2	0, 0, 1
0308980764		06/09/09 08:24:24	Provider 1	0, 0, 0
0581321185	K.BORDONADO	06/09/09 08:16:16	Provider 1	0, 0, 0
00441324778824	C.Alexander	06/09/09 08:16:08	Provider 1	0, 0, 0
00550123456789	G. DEL PIETRO	02/09/09 09:18:09	Provider 3	0, 0, 2
0296301005		01/09/09 20:40:20	Provider 1	0, 0, 0
00449876543210	C.ALEXANDER	31/08/09 12:24:12	Provider 3	0, 0, 2
0425960406	D.LE BRAZ	25/08/09 18:36:18	Provider 2	0, 0, 1
0675000321	WOJCIECHOSKI	22/08/09 11:22:11	Provider 1	0, 0, 0

Properties

For all fields, editable=0.

4.1.1.1.5 All calls list

Total number of 30 entries in the list.