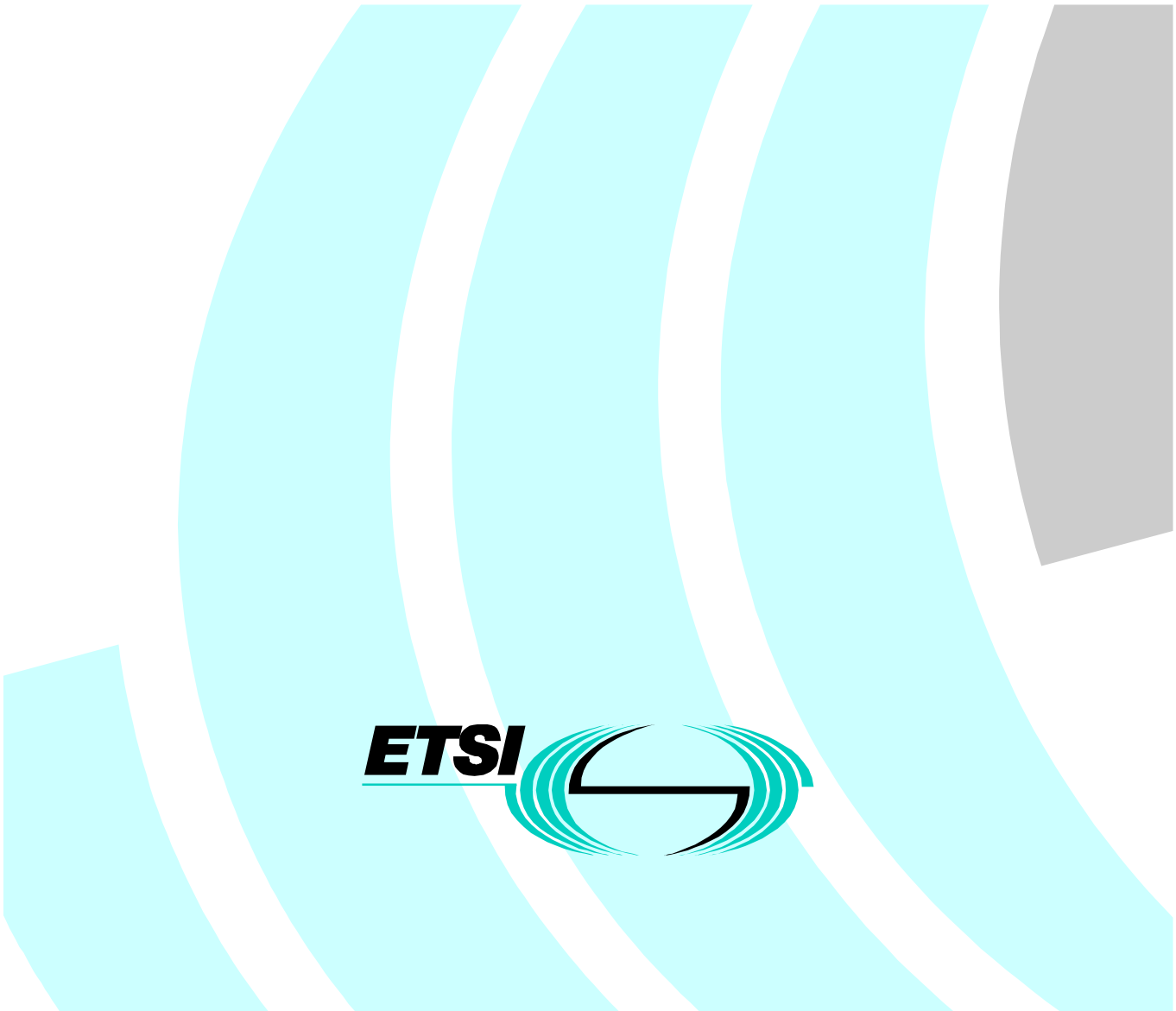
EN 301 439 V1.1.1 (1999-03)

European Standard (Telecommunications series)

Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); Attachment requirements for DECT/GSM dual-mode terminal equipment



Reference
DEN/DECT-010060 (dbo00ico.PDF)

Keywords
DECT, GSM, radio, terminal, regulation

ETSI

Postal address
F-06921 Sophia Antipolis Cedex - FRANCE

Office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - 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

Internet
secretariat@etsi.fr
Individual copies of this ETSI deliverable
can be downloaded from
http://www.etsi.org
If you find errors in the present document, send your
comment to: editor@etsi.fr

Contents

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 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 Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility ("the EMC Directive") (89/336/EEC as amended).

National transposition dates	
Date of adoption of this EN:	26 February 1999
Date of latest announcement of this EN (doa):	31 May 1999
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 November 1999
Date of withdrawal of any conflicting National Standard (dow):	30 November 1999

1 Scope

The present document specifies the additional technical characteristics to be provided by terminal equipment which is capable of connection with a DECT radio access (see note 1) to a public telecommunications network (see note 2) as well as with GSM radio access to GSM Public Land Mobile Networks (PLMN).

A DECT-terminal equipment comprises two elements, referred to as a Fixed Part (FP) and a Portable Part (PP), whereas a GSM terminal equipment is comprised of a mobile station (GSM MS). The objective of the present document is to ensure dual-mode operation of handsets comprised of a DECT PP and a GSM MS (Phase 2). These parts may, or may not, be separable.

The basic CTRs for DECT shall apply. These are the general attachment requirements [CTR 6], and for telephony the requirements for telephony applications [CTR 10] and requirements for the Generic Access Profile [CTR 22]. In addition, further CTRs may apply such as the CTRs for DECT access to GSM PLMN [CTR 36] and/or DECT access to ISDN [CTR 40].

The basic CTRs for GSM shall apply. These are the attachment requirements for Global System Mobile (GSM) mobile stations; Access [CTR 19 for Phase 2 and CTR 31 for multiband operation] and the requirements for telephony [CTR 20 for Phase 2 and CTR 32 for multiband operation].

The present document specifies all necessary additions to the Harmonized Standards rendered mandatory by the applicable CTRs for DECT/GSM dual-mode handsets.

As dual-mode handsets are expected to undergo a rapid technical development, the present documents may be amended at a later stage to meet these developments.

NOTE 1: Currently there are DECT profiles for interworking with ISDN (ETS 300 434 [15] and ETS 300 822 [16], which both allow access to ISDN networks and the services therein), GSM PLMN (ETS 300 370 [1] and others, which allow access to GSM PLMN and the services therein) and Generic Access to fixed networks (EN 300 444 [3], GAP, focusing on speech services). These are all covered by corresponding Harmonized Standards/CTRs. There also exists the CTM Access Profile (EN 300 824 [14], CAP).

NOTE 2: In the cases of the present document, the air interface may also be the network access.

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] ETS 300 370: "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); (DECT/GSM) Interworking Profile (IWP); Access and mapping (protocol/procedure description for 3,1 kHz speech service)".

[2] EN 301 242: "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); DECT/GSM integration based on dual-mode terminals".

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

[4] EN 300 607-1: "Digital cellular telecommunication system (Phase 2); Mobile Station (MS) conformance specification; Part 1: Conformance specification (GSM 11.10)".

[5] TBR 6: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements".

[6] TBR 10: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements: Telephony applications".

[7] TBR 19: "European digital cellular telecommunications system (Phase 2); Attachment requirements for Global System for Mobile communications (GSM) mobile stations; Access".

[8] TBR 20: "European digital cellular telecommunications system (Phase 2); Attachment requirements for Global System for Mobile communications (GSM) mobile stations; Telephony".

[9] TBR 22: "Radio Equipment and Systems (RES); Attachment requirements for terminal equipment for Digital Enhanced Cordless Telecommunications (DECT) Generic Access Profile (GAP) applications".

[10] TBR 31: "Digital cellular telecommunications system (Phase 2); Attachment requirements for mobile stations in the DCS 1 800 band and additional GSM 900 band; Access".

[11] TBR 32: "Digital cellular telecommunications system (Phase 2); Attachment requirements for mobile stations in the DCS 1 800 band and additional GSM 900 band; Telephony".

[12] TBR 40: "Digital Enhanced Cordless Telecommunications (DECT); Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment for DECT/ISDN interworking profile applications".

[13] 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).

[14] EN 300 824: "Digital Enhanced Cordless Telecommunications (DECT); Cordless Terminal Mobility (CTM); CTM Access Profile (CAP)".

[15] ETS 300 434: "Digital Enhanced Cordless Telecommunications (DECT) and Integrated Services Digital Network (ISDN) interworking for end system configuration".

[16] ETS 300 822: "Digital Enhanced Cordless Telecommunications (DECT); Integrated Services Digital Network (ISDN); DECT/ISDN interworking for intermediate system configuration; Interworking and profile specification".

[17] TBR 36: "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); DECT access to GSM Public Land Mobile Networks (PLMNs) for 3,1 kHz speech applications".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the definitions given in TBR 6 [5], TBR 10 [6], TBR 19 [7], TBR 20 [8], TBR 22 [9], TBR 31 [10], TBR 32 [11] and TBR 40 [12] apply, along with those found in EN 301 242 [2].

active communication: a state, where a communication link has been established between the DMT and a fixed part in either GSM or DECT mode.

automatic switched operation: the DMT is in either GSM or DECT mode and switches automatically between these modes when it looses current coverage or finds preferred coverage.

background scanning: the process whereby a DMT in manually or automatically switched operation attempts to identify the existence of stable networks in the mode other than the one it is in to which the terminal has access rights.

dual mode terminal: a terminal comprising both GSM and DECT parts.

GSM coverage: the sum of all GSM Public Land Mobile Network (PLMN) coverages where the DMT has at least limited service.

GSM: in the present document, the GSM part of a DMT can be GSM 900, Digital Cellular System 1800 (DCS 1800) or GSM/DCS dual band.

manually switched operation: the DMT is in either GSM or DECT mode and switches between these modes only after interaction with the user.

mode selection: a DMT based procedure, whereby operating mode, GSM or DECT, is chosen.

mode: a DMT has two modes, GSM and DECT. In GSM mode the DMT behaves as a GSM Mobile Station (MS) and in DECT mode the DMT behaves as a DECT Portable Part (PP).

parallel operation: the DMT has both GSM and DECT modes activated at the same time. It is capable of being location registered both to a DECT FP and a GSM PLMN at the same time and is capable of at least receiving simultaneously in both GSM and DECT modes.

preferred mode: either DECT or GSM is set to be the preferred mode. The DMT in automatic switched operation automatically switches to the preferred mode when it finds a suitable network in that mode and the DMT in parallel operation uses the preferred mode for outgoing calls.

3.2 Abbreviations

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

ARI	Access Rights Identity (see PARI, SARI and TARI)
CAP	CTM Access Profile
Cat	Category
CTM	Cordless Terminal Mobility
CTR	Common Technical Regulation
DCS	Digital Cellular System
DECT	Digital Enhanced Cordless Telecommunications
DMT	Dual-Mode Terminal
FP	Fixed Part
GAP	Generic Access Profile
GIP	DECT/GSM Interworking Profile
GSM	Global System for Mobile communications
ICS	Implementation Conformance Statement
ISDN	Integrated Services Digital Network
MS	Mobile Station
PLMN	Public Land Mobile Network
PP	Portable Part
PSTN	Public Switched Telephone Network
RFP	Radio Fixed Part
RT	Requirements Tables
SIM	Subscriber Identity Module
TBR	Technical Basis for Regulation
TD	Terminals Directive

4 Introduction and how to use the present document

The present document contains references to existing DECT and GSM TBRs. It identifies the essential requirements of these TBRs which are applicable to DECT/GSM dual-mode terminals, with any required additions or modifications. It introduces some new essential requirements specific to DECT/GSM DMTs. It identifies the test specifications to be applied to demonstrate compliance to these existing and new essential requirements.

The present document does not cover the use of the DECT/GSM Interworking Profile (GIP) in the DECT mode of a DECT/GSM DMT. Single mode DECT PPs which implement the GIP profile are type approved according to TBR 36 [17]. Use of the GIP profile requires the support of the DECT Access Rights Identity (ARI) class D.

The present document does not permit the support of direct mode MS to MS or PP to PP communication. DECT PP to PP communication is within the scope of TBR 6 [5], and requires the support of DECT ARI class E. DECT/GSM DMTs type approved according to the present document are therefore receive first devices, in that they do not transmit on either DECT or GSM frequency bands without having detected and locked to a suitable FP or base station.

5 Requirements

The DECT/GSM DMT features, services and requirements, as defined in the DECT TBRs (TBR 6 [5], TBR 10 [6], TBR 22 [9] and TBR 40 [12]), the GSM TBRs (TBR 19 [7], TBR 20 [8], TBR 31 [10] and TBR 32 [11]) and in the DECT/GSM dual-mode Standard EN 301 242 [2], are considered to fall under the essential requirements specified in Article 4 of the Council directive 98/13/EC [13] applying to terminal equipment, given in the following subclauses. The column Terminal Directive Category (TD Cat) identifies the applicable clauses of Article 4 of directive 98/13/EC [13].

NOTE: This clause does not specify the exact status (e.g. mandatory or optional) of the listed features, services and requirements. This is specified in annex A.

The interpretation of TD Category column in all tables is as follows:

d falls under item (d) from Article 4 of Council directive 98/13/EC [13];
(protection of the public telecommunications network from harm)

e falls under item (e) from Article 4 of Council directive 98/13/EC [13];
(effective use of the radio frequency spectrum, where appropriate)

f falls under item (f) from Article 4 of Council directive 98/13/EC [13];
(interworking of terminal equipment with public telecommunications network equipment for the purpose of establishing, modifying, charging for, holding and clearing real or virtual connection)

g falls under item (g) from Article 4 of Council directive 98/13/EC [13].
(interworking of terminal equipment via the public telecommunications network, in justified cases)

5.1 DECT requirements

5.1.1 Application of TBR 6

All the essential requirements of TBR 6 [5] apply for DECT/GSM DMTs.

5.1.2 Application of TBR 10

All the essential requirements of TBR 10 [6] apply for DECT/GSM DMTs.

5.1.3 Application of TBR 22

All of the essential requirements of TBR 22 [9] apply to DECT/GSM DMTs.

5.1.4 Application of TBR 40

For DMTs which are declared to support a DECT/ISDN Interworking profile, all of the essential requirements of the profile concerned in TBR 40 [12] apply.

5.2 GSM requirements

5.2.1 Application of TBR 19

All the essential requirements of TBR 19 [7] apply for DECT/GSM DMTs.

5.2.2 Application of TBR 20

All the essential requirements of TBR 20 [8] apply for DECT/GSM DMTs.

5.2.3 Application of TBR 31

All the essential requirements of TBR 31 [10] apply for DECT/GSM DMTs which support Digital Cellular System (DCS) 1800 service. This includes those essential requirements contained in clause 6 of TBR 31 [10], which apply under the conditions described in TBR 31 [10].

5.2.4 Application of TBR 32

All the essential requirements of TBR 32 [11] apply for DECT/GSM DMTs which support DCS 1800 service.

5.3 Additional DECT/GSM dual-mode requirements

In addition to the requirements listed above, the following DECT/GSM dual-mode specific requirements apply:

Table 1: Requirements and justifications

EN 301 242 [2] Item	DESCRIPTION	TBR JUSTIFICATION	TD Cat
6.2.2.4	Protection Against Excessive Signalling due to Automatic Switched Operation	Excessive switching and registration between DECT and GSM networks will cause excessive signalling, which will tie up network resources	d, f
4.1, 5.1, 6.1	DMT operates at mode change like single mode terminal on power up/down	Failure to notify network on power down or change of mode, where network requires such notification, may harm network and cause terminal not to be reachable when switched back to that mode.	d, f
7.5	Parallel Operation DMT, when active in one mode, behaves as though out of coverage in the other mode	Failure to behave as though out of coverage, and failing to perform location update/registration on ending the call may harm network with excessive signalling and cause terminal not to be reachable when the call is terminated	d, f

6 Test specification

6.1 Introduction

The basic approach to type approval testing of DECT/GSM DMTs is to treat the terminal as, in effect, two terminals, one DECT, the other GSM, and to apply the existing tests for each in the corresponding mode of operation.

In certain cases, it is necessary and worthwhile to perform particular tests while both receivers are active (either due to background scanning, or to parallel operation, if these features are supported).

Therefore, the approach taken in the following clause is to identify which tests are to be performed according to the mode of operation supported by the terminal. Additional tests are also specified, where required.

6.2 Applying DECT test specifications

Where the following clauses indicate that a DECT test is to be performed while GSM reception is active, any test modes, protocols or loopback, required in order to execute that test on a single mode DECT PP, shall be supported while GSM reception is active.

NOTE 1: A DMT which performs background scanning for GSM while active or idle in DECT mode is considered to have GSM reception active, regardless of whether the DMT contains dual receivers or not.

If a user of the DMT is able to modify the rate at which background scanning for GSM is performed, then all DECT tests which are indicated below to be performed while background scanning for GSM is active, shall be performed while the DMT is set to scan for at its highest selectable scan rate for GSM.

NOTE 2: A DMT which is manually switched to DECT will not normally perform background scanning for GSM, although this is not prohibited. A DMT which is performing background scanning for GSM will normally be set to automatic switched operation, be in the DECT mode, but with GSM as the preferred mode. There may be other circumstances under which the DMT will be in DECT mode, background scanning for GSM.

6.2.1 DMT does not support GSM reception when in DECT mode

IF

the DMT does not support GSM reception when in DECT mode (parallel operation, or background scanning for a GSM network while it is registered to a DECT FP) (items A.2/3, A.2/4, A.3/6 and A.3/9 not supported in Requirements Tables (RT) in annex A),

THEN

a) all TBR 6 [5] tests which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

b) all TBR 10 [6] tests which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

c) all TBR 22 [9] tests which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

d) all TBR 40 [12] tests (if the DMT supports a DECT/ISDN Interworking profile), which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

e) the EMC requirements as applicable to DECT PPs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met without change with the DMT manually switched to DECT mode.

6.2.2 DMT supports GSM reception while idle in DECT mode

IF

the DMT supports GSM reception while it is in DECT mode and is idle, (items A.2/3 or A.3/6 supported in the RT in annex A), but does not support GSM reception during active communication in DECT mode (items A.2/4 and A.3/9 not supported in the RT in annex A),

THEN

a) all TBR 6 [5] tests which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

b) all TBR 10 [6] tests which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

c) all TBR 22 [9] tests which normally apply to a DECT PP, except NWK layer tests in TBR 22 [9] subclause 6.1.1, shall be applied with the DMT manually switched to DECT mode;

d) all TBR 40 [12] tests (if the DMT supports a DECT/ISDN Interworking profile), which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

e) the tests contained within TBR 22 [9] subclause 6.1.1 shall be applied while the DMT is in DECT mode and GSM reception is activated (see note 1). For DMTs which support parallel operation, the DMT shall be location registered to both a DECT FP and a GSM base station during these tests;

NOTE 1: To activate GSM reception in DECT mode, it may be necessary to switch the terminal to parallel operation (if supported), or to switch the terminal to Automatic Switching operation, with background scanning for GSM activated.

NOTE 2: TBR 22 [9] subclause 6.1.1 NWK layer test cases can be run while the GSM receiver is active, without making any special allowances, because if the terminal is not capable of receiving on GSM while transmitting on DECT, the GSM receiver will be disabled during DECT transmissions. If the GSM receiver interferes with DECT transmission, this will be visible from the test results.

NOTE 3: In order to perform tests involving an outgoing call on a DMT during parallel operation, the DMT should have its preferred mode set to DECT. Otherwise, outgoing calls will be established on the GSM air interface.

f) The EMC emissions requirements as applicable to DECT PPs while idle, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met while the DMT is in DECT mode when GSM reception is activated (see note 1 above);

g) The EMC emissions requirements as applicable to DECT PPs in active communication, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met by the DMT in DECT mode;

NOTE 4: All EMC emissions tests should be run in DECT mode while the GSM receiver is active, without making any special allowances, because if the terminal is not capable of receiving on GSM while transmitting on DECT, as declared for this clause, the GSM receiver will be disabled during DECT transmissions. If the GSM receiver causes EMC interference during DECT transmission, this will be visible from the test results.

h) The EMC immunity requirements as applicable to DECT PPs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met with the DMT manually switched to DECT mode.

6.2.3 DMT supports GSM reception while idle or in active communication in DECT mode

IF

the DMT supports GSM reception while it is in DECT mode and is idle and while in active communication in DECT mode, (items A.3/6 and A.3/9 supported, or item A.2/4 supported in RT in annex A),

THEN

a) all TBR 6 [5] tests which normally apply to a DECT PP, except receiver tests in TBR 6 [5] subclauses 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, shall be applied with the DMT manually switched to DECT mode;

b) all TBR 10 [6] tests which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT mode;

c) all TBR 22 [9] tests which normally apply to a DECT PP, except NWK layer tests in TBR 22 [9] subclause 6.1.1, shall be applied with the DMT manually switched to DECT mode;

d) all TBR 40 [12] tests (if the DMT supports a DECT/ISDN Interworking profile), which normally apply to a DECT PP, shall be applied with the DMT manually switched to DECT;

e) the tests contained within TBR 6 [5] subclauses 13.1, 13.2, 13.3, 13.4, 13.5 and 13.6, shall be applied while the DMT is in DECT mode and GSM reception is activated (see note 1);

f) the tests contained within TBR 22 [9] subclause 6.1.1 shall be applied while the DMT is in DECT mode and GSM reception is activated (see note 1). For DMTs which support parallel operation, the DMT shall be location registered to both a DECT FP and a GSM base station during these tests;

NOTE 1: To activate GSM reception in DECT mode, it may be necessary to switch the terminal to parallel operation (if supported), or to switch the terminal to Automatic Switching operation, with background scanning for GSM activated.

NOTE 2: In order to perform the TBR 22 tests for outgoing call on a DMT during parallel operation, the DMT should have its preferred mode set to DECT. Otherwise, outgoing calls will be established on the GSM air interface.

g) the EMC emissions requirements as applicable to DECT PPs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met while the DMT is in DECT mode, and GSM reception is activated (see note 1 above);

h) the EMC immunity requirements as applicable to DECT PPs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met with the DMT manually switched to DECT mode.

6.3 Applying GSM test specifications

Where the following clauses indicate that a GSM test is to be performed while DECT reception is active, any test modes, protocols or loopback, required in order to execute that test on a single mode GSM MS, shall be supported while DECT reception is active.

NOTE 1: A DMT which performs background scanning for DECT while active or idle in GSM mode is considered to have DECT reception active, regardless of whether the DMT contains dual receivers or not.

If a user of the DMT is able to modify the rate at which background scanning for DECT is performed, then all GSM tests which are indicated below to be performed while background scanning for DECT is active, shall be performed while the DMT is set to scan for at its highest selectable scan rate for DECT.

NOTE 2: A DMT which is manually switched to GSM will not normally perform background scanning for DECT, although this is not prohibited. A DMT which is performing background scanning for DECT will normally be set to automatic switched operation, be in the GSM mode, but with DECT as the preferred mode. There may be other circumstances under which the DMT will be in GSM mode, background scanning for DECT.

6.3.1 DMT does not support DECT reception when in GSM mode

IF

the DMT does not support DECT reception when in GSM mode (parallel operation, or background scanning for a DECT FP while the DMT is in GSM mode), (items A.2/3, A.2/5, A.3/7 and A.3/10 not supported in RT in annex A),

THEN

a) all TBR 19 [7] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

b) all TBR 20 [8] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

c) all TBR 31 [10] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

d) all TBR 32 [11] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

e) the EMC requirements as applicable to GSM MSs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met with the DMT manually switched to GSM mode.

6.3.2 DMT supports DECT reception while idle in GSM mode

IF

the DMT supports DECT reception while it is in GSM mode and is idle, (items A.2/3 or A.3/7 supported in the RT in annex A), but does not support DECT reception during active communication (items A.2/5 and A.3/10 not supported in the RT in annex A),

THEN

a) all TBR 19 [7] tests which normally apply to a GSM MS, except those signalling tests contained in EN 300 607-1 [4] subclauses 26.2, 26.6, 26.7, 26.8 and 26.9, shall be applied with the DMT manually switched to GSM mode;

b) all TBR 20 [8] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

c) all TBR 31 [10] tests which normally apply to a GSM MS, except those signalling tests contained in EN 300 607-1 [4] subclauses 26.2, 26.6, 26.7, 26.8 and 26.9, shall be applied with the DMT manually switched to GSM mode;

d) all TBR 32 [11] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

e) the signalling tests required by TBR 19 [7] and/or TBR 31 [10] and contained within EN 300 607-1 [4] subclauses 26.2, 26.6, 26.7, 26.8 and 26.9 shall be applied while the DMT is in GSM mode and DECT reception is activated (see note 1). For DMTs which support parallel operation, the DMT shall be location registered to both a DECT FP and a GSM base station during these tests;

NOTE 1: To activate DECT reception in GSM mode, it may be necessary to switch the terminal to parallel operation (if supported), or to switch the terminal to Automatic Switching operation, with background scanning for DECT activated.

NOTE 2: EN 300 607-1 [4] signalling tests in subclauses 26.2, 26.6, 26.7, 26.8 and 26.9 can be run while the DECT receiver is active, without making any special allowances, because if the terminal is not capable of receiving on DECT while transmitting on GSM, the DECT receiver will be disabled during GSM transmissions. If the DECT receiver interferes with GSM transmission, this will be visible from the test results.

NOTE 3: In order to perform GSM tests involving an outgoing call on a DMT during parallel operation, the DMT should have its preferred mode set to GSM. Otherwise, outgoing calls will be established on the DECT air interface.

f) the EMC emissions requirements as applicable to GSM MSs while idle, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met while the DMT is in GSM mode, when DECT reception is activated (see note 1 above);

g) the EMC emissions requirements as applicable to GSM MSs in active communication, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met by the DMT in GSM mode;

NOTE 4: All EMC emissions tests should be run in GSM mode while the DECT receiver is active, without making any special allowances, because if the terminal is not capable of receiving on DECT while transmitting on GSM, as declared for this clause, the DECT receiver will be disabled during GSM transmissions. If the DECT receiver causes EMC interference during GSM transmission, this will be visible from the test results.

h) the EMC immunity requirements as applicable to GSM MSs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met with the DMT manually switched to GSM mode.

6.3.3 DMT supports DECT reception while idle or in active communication in GSM mode

IF

the DMT supports DECT reception while it is in GSM mode while idle or while in active communication, (items A.3/7 and A.3/10 supported, or item A.2/5 supported in RT in annex A),

THEN

a) all TBR 19 [7] tests which normally apply to a GSM MS, except those receiver tests contained in EN 300 607-1 [4] subclauses 14.1.1.1, 14.1.1.2, 14.2.1, 14.2.3, 14.3, 14.4.1, 14.4.4, 14.5.1, 14.5.2, 14.6.1, 14.6.2, 14.7.1, 14.7.2, 14.8.1, 14.8.2, and those signalling tests in subclauses 26.2, 26.6, 26.7, 26.8 and 26.9, shall be applied with the DMT manually switched to GSM mode;

b) all TBR 20 [8] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

c) all TBR 31 [10] tests which normally apply to a GSM MS, except those receiver tests contained in EN 300 607-1 [4] subclauses 14.1.1.1, 14.1.1.2, 14.2.1, 14.2.3, 14.3, 14.4.1, 14.4.4, 14.5.1, 14.5.2, 14.6.1, 14.6.2, 14.7.1, 14.7.2, 14.8.1, 14.8.2, and those signalling tests in subclauses 26.2, 26.6, 26.7, 26.8 and 26.9, shall be applied with the DMT manually switched to GSM mode;

d) all TBR 32 [11] tests which normally apply to a GSM MS, shall be applied with the DMT manually switched to GSM mode;

e) the receiver tests required by TBR 19 [7] and/or TBR 31 [10] and contained within EN 300 607-1 [4] subclauses 14.1.1.1, 14.1.1.2, 14.2.1, 14.2.3, 14.3, 14.4.1, 14.4.4, 14.5.1, 14.5.2, 14.6.1, 14.6.2, 14.7.1, 14.7.2, 14.8.1 and 14.8.2 shall be applied while the DMT is in GSM mode and DECT reception is activated (see note 1);

f) the signalling tests required by TBR 19 [7] and/or TBR 31 [10] and contained within EN 300 607-1 [4] subclauses 26.2, 26.6, 26.7, 26.8 and 26.9 shall be applied while the DMT is in GSM mode and DECT reception is activated (see note 1). For DMTs which support parallel operation, the DMT shall be location registered to both a DECT FP and a GSM base station during these tests;

NOTE 1: To activate DECT reception in GSM mode, it may be necessary to switch the terminal to parallel operation (if supported), or to switch the terminal to Automatic Switching operation, with background scanning for DECT activated.

NOTE 2: In order to perform GSM tests involving an outgoing call on a DMT during parallel operation, the DMT should have its preferred mode set to GSM. Otherwise, outgoing calls will be established on the DECT air interface.

g) the EMC emissions requirements as applicable to GSM MSs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met while the DMT is in GSM mode, and DECT reception is activated (see note 1 above);

h) the EMC immunity requirements as applicable to GSM MSs, contained in the relevant standards under the EMC directive, 89/336/EEC, shall be met with the DMT manually switched to GSM mode.

6.4 Dual-mode specific test specifications

6.4.1 Protection of GSM network against excessive signalling

6.4.1.1 Test purpose

The purpose of this test is to verify that the DMT complies with the requirements in subclause 6.2.2.4 of EN 301 242 [2]. These requirements are designed to protect a GSM network or a DECT FP against excessive signalling by limiting the frequency of mode changes as a result of background scanning of automatic switched operation terminals. The requirement is that the DMT shall not change from DECT to GSM mode as a result of background scanning more than twice every 8 minutes.

6.4.1.2 Selection criteria

This test case shall apply to all DMTs which support automatic switched operation, and which support background scanning for a GSM network, while in DECT mode with GSM as preferred mode (items A.2/2, A.3/6 and/or A.3/9 supported in RT in annex A).

6.4.1.3 Test method

The DMT shall contain valid GSM and DECT identities for a GSM network or network simulator, and a DECT FP, to both of which it is subscribed.

1) the DECT FP is activated;

2) the GSM network simulator is kept de-activated, or its signal is blocked;

3) The DMT is powered up;

4) the DMT is observed to lock and register to the DECT FP;

5) GSM is selected as the preferred mode on the DMT;

6) the GSM network simulator is activated;

7) the DMT is observed to lock and register to the GSM network simulator or network as a result of background scanning - a timer is started;

8) the GSM network simulator is immediately de-activated, or its signal is blocked;

9) the DMT is observed to lock and register to the DECT FP as a result of loss of GSM signal;

10) the GSM network simulator is activated;

11) the DMT is observed to lock and register to the GSM network simulator or network as a result of background scanning;

12) the GSM network simulator is immediately de-activated, or its signal is blocked;

13) the DMT is observed to lock and register to the DECT FP as a result of loss of GSM signal;

14) the GSM network simulator is activated;

15) the behaviour of the DMT is observed until 7 minutes 30 seconds have elapsed since step 7.

NOTE: It is possible to perform this test by hand, using a stopwatch. If a screened room is used, it is not necessary to use a GSM network simulator. Equally, it is possible to fully automate this test, using DECT and GSM protocol test tools which provide timestamps.

6.4.1.4 Verdict criteria

If, at step 15, the DMT is observed to lock and register to the GSM network simulator or network before 7 minutes 30 seconds have expired since step 7, the verdict shall be FAIL.

If, at step 15, the DMT does not lock and register to the GSM network simulator before 7 minutes 30 seconds have expired since step 7, the verdict shall be PASS.

If it is not possible to perform steps 7 to 15 within 7 minutes 30 seconds due to the slow background scanning performed by the DMT, the verdict shall be PASS.

6.4.2 Protection of DECT FP against excessive signalling

6.4.2.1 Test purpose

The purpose of this test is to verify that the DMT complies with the requirements in subclause 6.2.2.4 of EN 301 242 [2]. These requirements are designed to protect a GSM network or a DECT FP against excessive signalling by limiting the frequency of mode changes as a result of background scanning of automatic switched operation terminals. The requirement is that the DMT shall not change from GSM to DECT mode as a result of background scanning more than twice every 8 minutes.

6.4.2.2 Selection criteria

This test case shall apply to all DMTs which support automatic switched operation, and which support background scanning for a DECT FP, while in GSM mode with DECT as preferred mode (items A.2/2, A.3/7 and/or A.3/10 supported in RT in annex A).

6.4.2.3 Test method

The DMT shall contain valid GSM and DECT identities for a GSM network or network simulator, and a DECT FP, to both of which it is subscribed.

1) the GSM network simulator is activated;
2) the DECT FP is kept de-activated, or its signal is blocked;
3) The DMT is powered up;
4) the DMT is observed to lock and register to the GSM network simulator;
5) DECT is selected as the preferred mode on the DMT;
6) the DECT FP is activated;
7) the DMT is observed to lock and register to the DECT FP as a result of background scanning - a timer is started;
8) the DECT FP is immediately de-activated, or its signal is blocked;
9) the DMT is observed to lock and register to the GSM network simulator as a result of loss of DECT signal;
10) the DECT FP is activated;
11) the DMT is observed to lock and register to the DECT FP as a result of background scanning;
12) the DECT FP is immediately de-activated, or its signal is blocked;
13) the DMT is observed to lock and register to the GSM network simulator as a result of loss of DECT signal;

14) the DECT FP is activated;

15) the behaviour of the DMT is observed until 7 minutes 30 seconds have elapsed since step 7.

NOTE: It is possible to perform this test by hand, using a stopwatch. Any GSM network, for which the DMT has a valid subscription, can be used Equally, it is possible to fully automate this test, using DECT and GSM protocol test tools which provide timestamps.

6.4.2.4 Verdict criteria

If, at step 15, the DMT is observed to lock and register to the DECT FP before 7 minutes 30 seconds have expired since step 7, the verdict shall be FAIL.

If, at step 15, the DMT does not lock and register to the DECT FP before 7 minutes 30 seconds have expired since step 7, the verdict shall be PASS.

If it is not possible to perform steps 7 to 15 within 7 minutes 30 seconds due to the slow background scanning performed by the DMT, the verdict shall be PASS.

6.4.3 Attach/detach on GSM due to mode change

6.4.3.1 Test purpose

The purpose of this test is to verify that the requirements of subclauses 4.1 and 5.1 of EN 301 242 [2] are met, in that the DMT sends a detach message to the GSM network when it switches mode to DECT, when the GSM network signals its requirement for detach on switch off. The purpose is also to verify that correct attach procedures are performed when the DMT switches mode from DECT to GSM, when the GSM network signals its requirement for attach/location update.

6.4.3.2 Selection criteria

This test shall apply to all DMTs.

6.4.3.3 Test method

TBR 19 [7] (if GSM 900 is supported) or TBR 31 [10] (if DCS 1800 is supported) test 26.2.2 shall be executed, but wherever the MS is required to be switched off, the mode of the DMT shall be manually changed from GSM to DECT. Wherever the MS is required in subclause 26.2.2 to be switched on, the mode of the DMT shall be manually changed from DECT to GSM.

6.4.3.4 Verdict criteria

The DMT shall pass 26.2.2 of TBR 19 [7] or TBR 31 [10] using the method described in subclause 6.4.3.3 above.

6.4.4 Location Registration on DECT due to mode change

6.4.4.1 Test purpose

The purpose of this test is to verify that the requirements of subclauses 4.1 and 5.1 of EN 301 242 [2] are met, in that the DMT performs a location registration on the DECT FP when it switches mode to DECT.

6.4.4.2 Selection criteria

This test shall apply to all DMTs.

6.4.4.3 Test method

TBR 22 [9] NWK layer PP test TC_PT_MM_BV_LO_05 shall be executed, but wherever the IUT is required to be switched off, the mode of the DMT shall be manually changed from DECT to GSM. Wherever the IUT is required to be switched on, the mode of the DMT shall be manually changed from GSM to DECT.

6.4.4.4 Verdict criteria

The DMT shall pass test TC_PT_MM_BV_LO_05 of TBR 22 [9] using the method described in subclause 6.4.4.3 above.

6.4.5 Parallel operation behaviour during DECT call

6.4.5.1 Test purpose

The purpose of this test is to verify that a DMT, which supports parallel operation, when it is registered to both a DECT FP and a GSM base station, behaves as though out of coverage on GSM when it is in active communication in DECT mode (subclause 7.5 of EN 301 242 [2]).

6.4.5.2 Selection criteria

This test shall apply to all DMTs which support parallel operation, i.e. are capable of being simultaneously registered to both a DECT FP and a GSM network, but not capable of transmitting simultaneously to both (items A.2/3, or A.2/5 supported in RT in annex A).

6.4.5.3 Test method

To perform this test purpose, a modified form of the test case in EN 300 607-1 [4] subclause 26.7.4.5.3 shall be used. The EN 300 607-1 [4] test case involves performing a location update (following a change of cell) on a cell, and verifying 6 minutes later that periodic location updating takes place (timer T3212 is set to 6 minutes).

To perform the test purpose in 6.4.5.1, the DMT shall be registered on a DECT FP. The initial steps of EN 300 607-1 [4] subclause 26.7.4.5.3 shall be followed. At a point in time 3 minutes after the DMT performs the location update on cell B, an outgoing call on the DECT air interface shall be established, and the call shall be maintained for at least 6 minutes before being released.

6.4.5.4 Verdict criteria

The behaviour of the DMT shall be observed using the GSM test tool. If the DMT performs a location update on the GSM air interface immediately following release of the DECT call, the verdict shall be pass.

If the DMT fails to perform a location update on the GSM air interface immediately following release of the DECT call, the verdict shall be fail.

If the DMT performs the IMSI detach procedure on the GSM air interface, the verdict shall be fail.

6.5 Overview tables of test case selection

The following tables provide an overview of the selection of test cases for the six most common terminal configurations. They apply the selection rules given in subclauses 6.2, 6.3 and 6.4 above. They do not forbid other terminal configurations being tested according to the selection rules given above.

6.5.1 Overview table of DECT test case selection

The following table lists all the groups of DECT tests, according to the configuration of DMT being tested, together with the mode in which the test is to be performed. In the DMT configuration row, the associated items in the RT in annex A are indicated.

Table 2: DECT test case selection

DMT configuration: Test:	Manually Switched Operation, No Background Scanning (B/S) (A.2/1)	Automatic Switched Operation, No B/S (A.2/2)	Automatic Switched Operation, B/S for GSM when idle (A.2/2 & A.3/6)	Automatic Switched Operation, B/S for GSM always (A.2/2 & A.3/6 & A.3/9)	Parallel Idle Mode Operation (A.2/3)	Parallel Mode Operation (A.2/4)
TBR 6 [5] (not Receiver tests)	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT
TBR 6 [5] Receiver tests	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Auto. switched to DECT, B/S in operation	Manually switched to DECT	Parallel mode operation
TBR 10 [6]	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT
TBR 22 [9] (not NWK layer)	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT
TBR 22 [9] NWK layer	Manually switched to DECT	Manually switched to DECT	Auto. switched to DECT, B/S in operation	Auto. switched to DECT, B/S in operation	Parallel mode operation	Parallel mode operation
TBR 40 [12]	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT
EMC Emissions	Manually switched to DECT	Manually switched to DECT	Auto. switched to DECT, B/S in operation	Auto. switched to DECT, B/S in operation	Parallel mode operation	Parallel mode operation
EMC Immunity	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT
EN 301 439 6.4.1	Not Applicable	Not Applicable	Auto. switched to DECT, B/S in operation	Auto. switched to DECT, B/S in operation	Not Applicable	Not Applicable
EN 301 439 6.4.4	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT	Manually switched to DECT

6.5.2 Overview table of GSM test case selection

The following table lists all the groups of GSM tests, according to the configuration of DMT being tested, together with the mode in which the test is to be performed. In the DMT configuration row, the associated items in the RT in annex A are indicated.

Table 3: GSM test case selection

DMT configuration: Test:	Manually Switched Operation, No Background Scanning (B/S) (A.2/1)	Automatic Switched Operation, No B/S (A.2/2)	Automatic Switched Operation, B/S for DECT when idle (A.2/2 & A.3/7)	Automatic Switched Operation, B/S for DECT always (A.2/2 & A.3/7 & A.3/10)	Parallel Idle Mode Operation (A.2/3)	Parallel Mode Operation (A.2/5)
TBR 19 [7] /TBR 31 [10] (except selected receiver, signalling tests)	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM
TBR 19 [7] /TBR 31 [10] selected receiver tests	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Auto. switched to GSM, B/S in operation	Manually switched to GSM	Parallel mode operation
TBR 19 [7] /TBR 31 [10] selected signalling tests	Manually switched to GSM	Manually switched to GSM	Auto. switched to GSM, B/S in operation	Auto. switched to GSM, B/S in operation	Parallel mode operation	Parallel mode operation
TBR 20 [8] /TBR 32 [11]	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM
EMC Emissions	Manually switched to GSM	Manually switched to GSM	Auto. switched to GSM, B/S in operation	Auto. switched to GSM, B/S in operation	Parallel mode operation	Parallel mode operation
EMC Immunity	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM
EN 301 439 6.4.2	Not Applicable	Not Applicable	Auto. switched to GSM, B/S in operation	Auto. switched to GSM, B/S in operation	Not Applicable	Not Applicable
EN 301 439 6.4.3	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM	Manually switched to GSM
EN 301 439 6.4.5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Parallel mode operation	Parallel mode operation

Annex A (normative): Requirements Tables (RT)

A.1 Introduction

The RT tables indicate which features and procedures are Mandatory, Optional or Conditional. The features and procedures are referenced via an existing profile Implementation Conformance Statement (ICS) document.

The following table headers are applicable to RT.

Item is a number unique in the table to be used for references.

Reference references to EN 301 242 [2], the DECT/GSM dual-mode specification, unless otherwise specified.

Status contains the status required for implementation conforming to the present document.

Support is the column for the manufacturer's statement of whether the particular item is supported by the implementation.

The interpretation of status columns in all tables is as follows:

m mandatory - the capability is required to be supported.

o optional - the capability may be supported or not.

n/a not applicable - in the given context, it is impossible to use the capability.

x prohibited (excluded) - there is a requirement not to use this capability in the given context.

o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.

ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table or which is defined in the general condition table below.

i out-of-scope - this capability is outside the scope of the given specification, and hence irrelevant and not subject to conformance testing. This status is in particular applicable for data fields which are reserved for future use. The structure of such fields has to be supported, but the value is undefined and thus to be ignored.

If a procedure, message/frame, information element or timer/constant are not explicitly listed in any of the following tables these shall be considered as i.

A.2 Major capabilities

A.2.1 Mode of operation

Table A.1: Modes supported

Item	Entity name	Reference: EN 301 242 [2]	Status	Support
1	DECT Mode Supported	4	m	
2	GSM Mode Supported	3.1, 4	c101	
3	DCS 1800 Mode Supported	3.1, 4	c102	

c101: If A.1/3 then o, else m
c102: If A.1/2 then o, else m

A.2.2 Mode selection mechanism

Table A.2: Mode selection mechanism supported

Item	Call Control features	Reference: EN 301 242 [2]	Status	Support
1	Manually Switched Operation	4.2	m	
2	Automatic Switched Operation	4.2	o	
3	Parallel Operation - Idle mode only	4.2, 7	o	
4	Parallel Operation - reception in GSM while transmission in DECT	4.2, 7	o	
5	Parallel Operation - reception in DECT while transmission in GSM	4.2, 7	o	

A.2.3 Mode selection details

Table A.3: Mode selection details

Item	Call Control features	Reference: EN 301 242 [2]	Status	Support
1	Mode Selection Mechanism can be changed at any time when not in active communication	6.2.1	c301	
2	Mode can be changed at any time when not in active communication while using Manually Switched Operation	5.1	m	
3	DMT Indicates Mode Currently in Use	4.1	m	
4	Automatic Switched Operation Terminal selects DECT Mode at switch on with no Subscriber Identity Module (SIM) inserted	6.2.2.1	c301	
5	Automatic Switched Operation Performed as Required	6.2.2.4	c301	
6	DMT performs background scanning for GSM when registered and idle in DECT Mode	6.2.2.4.1	o	
7	DMT performs background scanning for DECT when registered and idle in GSM Mode	6.2.2.4.2	c301	
8	As result of Background Scanning, DMT does not automatically switch from non-preferred mode to preferred mode more than twice every 8 minutes	6.2.2.4.3	c301	
9	DMT performs background scanning for GSM when in active communication in DECT Mode	6.2.2.4.1	o	
10	DMT performs background scanning for DECT when in active communication in GSM Mode	6.2.2.4.2	o	
11	Mode switch involves switch off/switch on procedures	4.1	m	
12	Mode re-selection supported	6.2.2.5	c301	
13	DMT behaves as out of coverage in one mode while in active communication in the other	7.5	c302	

c301: If A.2/2 then m, else o
c302: If A.2/3 or A.2/4 or A.2/5 the m, else n/a

A.2.4 DECT profiles supported

Table A.4: DECT profiles supported

Item	DECT Profiles	Reference: EN 301 242 [2]	Status	Support
1	GAP	4.4	m	
2	DECT/ISDN End System Configuration	4.4	o	
3	DECT/ISDN Intermediate System Configuration	4.4	o	
4	CAP	4.4	o	
5	DECT/GSM Interworking Profile (ARI-D)	4.4	x	
6	Direct Mode (PP to PP, ARI-E)		x	

Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

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

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

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

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

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

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

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

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

ETS 300 535: "Digital cellular telecommunications system (Phase 2); Functions related to Mobile Station (MS) in idle mode (GSM 03.22)".

ETS 300 540: "Digital cellular telecommunications system (Phase 2); Transmission planning aspects of the speech service in the GSM Public Land Mobile Network (PLMN) system (GSM 03.50)".

ETS 300 577: "Digital cellular telecommunications system (Phase 2); Radio transmission and reception (GSM 05.05)".

ETR 100: "European digital cellular telecommunications system (Phase 2); Abbreviations and acronyms (GSM 01.04)".

ETR 159: "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); Wide area mobility using the GSM".

ETR 341: "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications(GSM); (DECT/GSM) Interworking Profile(IWP); Profile overview".

TR 101 176: "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); DECT/GSM advanced integration of DECT/GSM dual-mode terminal equipment".

TR 101 072 (1997): "Digital Enhanced Cordless Telecommunications/Global System for Mobile communications (DECT/GSM); Integration based on dual-mode terminals".

ETS 300 001: "Attachments to Public Switched Telephone Network (PSTN); General technical requirements for equipment connected to an analogue subscriber interface in the PSTN (NET 4)".

History

Document history				
V1.1.1	April 1998	Public Enquiry	PE 9831:	1998-04-03 to 1998-07-31
V1.1.1	December 1998	Vote	V 9908:	1998-12-22 to 1999-02-19
V1.1.1	March 1999	Publication		

ISBN 2-7437-2905-8
Dépôt légal : Mars 1999