



**Electromagnetic compatibility
and Radio spectrum Matters (ERM);
Conformance testing for Mode 1 of
the digital Private Mobile Radio (dPMR™);
Part 3: Interoperability Test Suite Structure and
Test Purposes (TSS&TP) specification**

PREVIEW
https://standards.etsi.org/standards-rel/102-726-3-v2.2.1-7196-4027-8406-891442/files/etsi-ts-102-726-3-v2.2.1-7196-4027-8406-891442.pdf

ReferenceRTS/ERM-TGDMM-353

Keywordsdigital, interoperability, mobile, radio, testing,
TSS&TP**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

<http://portal.etsi.org/tb/status/status.asp>

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

<https://portal.etsi.org/People/CommitteeSupportStaff.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.

© European Telecommunications Standards Institute 2015.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Contents

| | |
|--|-----------|
| Intellectual Property Rights | 4 |
| Foreword..... | 4 |
| Modal verbs terminology..... | 4 |
| Executive summary | 4 |
| 1 Scope | 5 |
| 2 References | 5 |
| 2.1 Normative references | 5 |
| 2.2 Informative references..... | 5 |
| 3 Abbreviations | 6 |
| 4 Test Suite Structure (TSS)..... | 6 |
| 5 Test Purposes (TP) | 7 |
| 5.0 Preamble..... | 7 |
| 5.1 Framing | 7 |
| 5.1.1 Addressing | 7 |
| 5.1.1.1 All Call..... | 7 |
| 5.1.1.2 Dialling Plan | 7 |
| 5.1.1.3 Talking Party ID..... | 12 |
| 5.1.2 Base Station framing..... | 13 |
| 5.1.3 Channel Access..... | 17 |
| 5.1.3.0 General | 17 |
| 5.1.3.1 OACSU | 19 |
| 5.1.3.2 PTT Call..... | 20 |
| 5.1.4 END frame..... | 20 |
| 5.1.5 Message frame | 21 |
| 5.1.5.1 Message Information field | 21 |
| 5.1.6 Payload | 21 |
| 5.1.6.1 Packet data | 21 |
| 5.1.6.2 Short data | 21 |
| 5.1.6.3 T1 data | 24 |
| 5.1.6.4 T2 data | 25 |
| 5.1.6.5 Voice..... | 26 |
| 5.1.6.5.1 Voice and attached data..... | 26 |
| 5.1.6.5.2 Late entry..... | 27 |
| 5.1.6.5.3 Slow user data | 28 |
| 5.1.7 Power save | 29 |
| 5.1.8 Superframe..... | 29 |
| 5.1.8.1 Traffic channel | 29 |
| 5.1.8.2 Voice TCH | 29 |
| Annex A (normative): dPMR™ interoperability test configurations..... | 30 |
| A.1 Generic test configurations..... | 30 |
| A.1.1 Mode 1 equipment..... | 30 |
| A.1.2 Mode 2 equipment - MS..... | 30 |
| A.1.3 Mode 2 equipment - BS..... | 30 |
| A.1.3.1 BS2 general configuration | 30 |
| A.1.3.2 BS2 Limited Mode | 30 |
| A.1.3.3 BS2 Transparent Mode | 30 |
| Annex B (normative): dPMR™ TPLan interoperability testing user definitions..... | 31 |
| Annex C (informative): Change History | 34 |
| History | 35 |

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 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 (<http://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.

Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document is part 3 of a multi-part deliverable covering the Conformance testing for Modes 1 and 2 of the digital Private Mobile Radio (dPMR™) as identified below:

- Part 1: "Protocol Implementation Conformance Statement (PICS) proforma";
 - Part 2: "Test Suite Structure and Test Purposes (TSS&TP) specification";
 - Part 3: "Interoperability Test Suite Structure and Test Purposes (TSS&TP) specification".**
-

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.

Executive summary

The present document describes the interoperability test requirements for digital Private Mobile Radio compliant to the ETSI TS102 658 standard.

It is intended to be used in conjunction with the Protocol Implementation Conformance standard (PICS) ETSI TS 102 726-1 [i.2] which describes the applicable functions of the equipment being evaluated. The actual test procedure and the required test result for each of those functions can be found in the present document.

1 Scope

The present document specifies the interoperability Test Purposes (TPs) for the Digital Private Mobile Radio (dPMR™) standard, ETSI TS 102 658 [1]. TPs are defined using the TPLan notation described in ETSI ES 202 553 [i.1]. Test purposes have been written based on the test specification framework described in ETSI TS 102 351 [2] and based on the methodology defined in ISO/IEC 9646-2 [3].

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 reference document (including any amendments) applies.

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

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

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

- [1] ETSI TS 102 658 : "Digital Private Mobile Radio (dPMR) using FDMA with a channel spacing of 6,25 kHz".
- [2] ETSI TS 102 351 (V2.1.1): "Methods for Testing and Specification (MTS); Internet Protocol Testing (IPT); IPv6 Testing: Methodology and Framework".
- [3] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2; Abstract Test Suite specification".
- [4] ETSI TS 102 587-3: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Peer-to-Peer Digital Private Mobile Radio; Part 3: Requirements catalogue".

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 reference 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 ES 202 553: "Methods for testing and Specification (MTS); TPLan: A notation for expressing test Purposes".
- [i.2] ETSI TS 102 726-1: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Conformance testing for Mode 1 of the digital Private Mobile Radio (dPMR™); Part 1: Protocol Implementation Conformance Statement (PICS) proforma".

3 Abbreviations

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

| | |
|-------|---|
| BS2L | Mode 2 Repeater using Limited Access Mode |
| BS2T | Mode 2 Repeater using Transparent Access Mode |
| CF | (Test) ConFfiguration |
| dPMR™ | digital Private Mobile Radio |
| EUT | Equipment Under Test |
| M1 | Mode 1 |
| M2 | Mode 2 |
| OACSU | Off Air Call Set-Up |
| QE | Qualified Equipment |

NOTE: That complies with TS 102 658 [1].

| | |
|-----|------------------------|
| RC | Requirements Catalogue |
| RQ | ReQuirement |
| TP | Test Purpose |
| TSS | Test Suite Structure |

4 Test Suite Structure (TSS)

The Test Suite Structure is based on the dPMR™ Requirements Catalogue [4]. It is defined by the groups within the following TPlan specification of test purposes. The numbering is not contiguous so that new TPs can be added at a later date without the need to completely renumber the TSS groups.

The test purposes have been divided into four groups:

Group 1: Common requirements.

Group 2: Services.

Group 3: Channel access.

Group 4: Addressing

The sub-grouping of these three groups follows the structure of the RC. Some of the sub-groups of the RC contained no testable requirement. Headings for those sub-groups are in this test purpose document in the node group to give a full view on the relation between RQ and TSS&TP.

| | |
|-----------|---------------------------|
| 5.1 | Framing |
| 5.1.1 | Addressing |
| 5.1.1.1 | All Call |
| 5.1.1.2 | Dialling Plan |
| 5.1.1.3 | Talking Party ID |
| 5.1.2 | Base Station framing |
| 5.1.3 | Channel Access |
| 5.1.3.0 | General |
| 5.1.3.1 | OACSU |
| 5.1.3.2 | PTT Call |
| 5.1.4 | END frame |
| 5.1.5 | Message frame |
| 5.1.5.1 | Message Information field |
| 5.1.6 | Payload |
| 5.1.6.1 | Packet data |
| 5.1.6.2 | Short data |
| 5.1.6.3 | T1 data |
| 5.1.6.4 | T2 data |
| 5.1.6.5 | Voice |
| 5.1.6.5.1 | Voice and attached data |
| 5.1.6.5.2 | Late entry |
| 5.1.6.5.3 | Slow user data |
| 5.1.7 | Power save |
| 5.1.8 | Superframe |
| 5.1.8.1 | Traffic channel |
| 5.1.8.2 | Voice TCH |


```

TP id      : TP_PMR_1417_02
summary    : 'Abbreviated dialling string with wildcard and no match'
RQ ref     : RQ_001_1417
TP type    : interoperability
Role       : M1, M2
config ref: CF_dPMR_01_I -- QE1 and EUT
TD ref     : TBD
with {
    (EUT Complies_with_Standard_User_Interface and
     abbreviated_dialling_available)
    EUT and QE1 'addresses are same except for last two or more digits'
    EUT and QE1 in standby
}
ensure that {
    when { EUT_User enters or selects the asterisk_symbol and
           presses the hash_key or dedicated_send_key }
    then { QE1_User does not receive the Call }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id      : TP_PMR_1417_03
summary    : 'Abbreviated dialling string with wildcard'
RQ ref     : RQ_001_1417
TP type    : interoperability
Role       : M1, M2
config ref: CF_dPMR_01_I -- QE1 and EUT
TD ref     : TBD
with {
    (EUT Complies_with_Standard_User_Interface and abbreviated_dialling_available)
    EUT and QE1 'addresses are same except for the last digit'
    EUT and QE1 in standby
}
ensure that {
    when { EUT_User enters or selects the asterisk_symbol and
           presses the dedicated_send_key }
    then { QE1_User receives the Call }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id      : TP_PMR_1418_01
summary    : 'Talkgroup call'
RQ ref     : RQ_001_1418
TP type    : interoperability
Role       : M1, M2
config ref: CF_dPMR_01_I -- QE1 and EUT
TD ref     : TBD
with {
    (EUT Complies_with_Standard_User_Interface and
     'an address input mask enabled covering at least one of the last four digits') and
    (EUT and QE1 'addresses having the same digits outside of the mask' and
     in standby)
}
ensure that {
    when { EUT_User enters or selects a masked_dialling_string of QE1
           containing an asterisk_symbol 'as the last digit' and
           presses the hash_key or dedicated_send_key }
    then { QE1_User receives the TalkGroup_Call }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

```


