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**Global System for Mobile communications (GSM);
Mobile Stations (MS) equipment;
Harmonised Standard covering the essential requirements
of article 3.2 of Directive 2014/53/EU**

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Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Mobile Standards Group (MSG).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.10] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.9].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

National transposition dates	
Date of adoption of this EN:	13 March 2017
Date of latest announcement of this EN (doa):	30 June 2017
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 December 2017
Date of withdrawal of any conflicting National Standard (dow):	31 December 2018

Modal verbs terminology

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

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Introduction

The present document is part of a set of standards developed by ETSI that are designed to fit in a modular structure to cover radio equipment within the scope of the Radio Equipment Directive [i.9]. The present document is produced following the guidance in ETSI EG 203 336 [i.12] as applicable.

1 Scope

The present document specifies technical characteristics and methods of measurements for the following radio equipment type:

- GSM mobile station.

This radio equipment type is for operation within the Digital cellular telecommunications system in the GSM 900 and/or GSM 1800 frequency bands as shown in table 1, with a channel separation of 200 kHz, utilizing constant envelope modulation and carrying traffic channels according to the Time Division Multiple Access (TDMA) principle.

Table 1: Frequency bands for GSM 900 and GSM 1800 Mobile Station system

Type	TX	RX
P-GSM 900	890 MHz to 915 MHz	935 MHz to 960 MHz
GSM 1800	1 710 MHz to 1 785 MHz	1 805 MHz to 1 880 MHz
E-GSM 900	880 MHz to 915 MHz	925 MHz to 960 MHz
R-GSM 900	876 MHz to 915 MHz	921 MHz to 960 MHz
ER-GSM 900	873 MHz to 915 MHz	918 MHz to 960 MHz

The present document covers the essential requirements of article 3.2 of Directive 2014/53/EU [i.9] under the conditions identified in annex A.

The present document covers the general access requirements for terminal equipment up to and including 3GPP Rel-12. The general access requirements, applied to the terminal equipment, are for one release only. The present document does not cover the GPRS Class A mobiles and the ECSD mobiles.

For each test purpose and its corresponding conformance requirement, a reference is given to the test method in ETSI TS 151 010-1 [2]. The requirements apply at the air interface, which may be stimulated to perform the tests by additional equipment if necessary.

The measurement uncertainty is described in ETSI TS 151 010-1 [2], annex 5.

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the Radio Equipment Directive [i.9] will apply to equipment within the scope of the present document.

NOTE 1: A list of such ENs is included on the web site <http://www.newapproach.org>.

ETSI TS 151 010-1 [2] constitutes the conformance test suite for GSM. The verification of the conformance requirements in the present document is based on the tests described in this reference. The set of requirements in ETSI TS 151 010-1 [2] and the set of requirements in the present document need not be identical.

Some requirements only apply to specific types of mobile station (e.g. data tests only apply to mobile stations with a data facility, tests that only apply to GSM 900 or only to GSM 1800 or to both). The present document indicates the specific test which should be carried out for each mobile station type.

An active accessory is covered by the present document if it modifies the terminal performance in an aspect which affects conformance to essential requirements.

NOTE 2: Only active devices are subject to the present document. Accessories may be tested with specific terminals, and either approved for use with those terminals only, or may possibly be approved for use with a wider range of terminals, depending on the nature and effect of the accessory.

2 References

2.1 Normative references

References are specific, identified by date of publication and/or edition number or version number. Only the cited version applies.

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

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

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

- [1] Void.
- [2] ETSI TS 151 010-1 (V12.8.0) (05-2016): "Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification (3GPP TS 51.010-1 version 12.8.0 Release 12)".
- [3] Void.
- [4] ETSI TS 102 933-2 (V2.1.1) (06-2015): "Railway Telecommunications (RT); GSM-R improved Receiver parameters; Part 2: Radio conformance testing"

2.2 Informative references

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

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

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

- [i.1] ETSI TS 102 933-1 (V2.1.1) (06-2015): "Railway Telecommunications (RT); GSM-R improved Receiver parameters; Part 1: Requirements for radio reception".
- [i.2] ETSI ETS 300 905 (V5.3.2) (01-1998): "Digital cellular telecommunications system (Phase 2+) (GSM); Teleservices supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.03 version 5.3.2)".
- [i.3] ETSI TS 122 060 (V4.4.0) (06-2002): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Service description; Stage 1 (3GPP TS 22.060 version 4.4.0 Release 4)".
- [i.4] ETSI TS 100 905 (V7.0.0) (08-1999): "Digital cellular telecommunications system (Phase 2+) (GSM); Teleservices supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.03 version 7.0.0 Release 1998)".
- [i.5] ETSI TS 122 003 (V4.3.0) (03-2002): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Circuit Teleservices supported by a Public Land Mobile Network (PLMN) (3GPP TS 22.003 version 4.3.0 Release 4)".
- [i.6] ETSI TS 101 349 (V8.16.0) (09-2002): "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol (3GPP TS 04.60 version 8.16.0 Release 1999)".

- [i.7] ETSI TR 100 028 (all parts) (V1.4.1) (12-2001): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [i.8] Void.
- [i.9] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.
- [i.10] Commission Implementing Decision C(2015) 5376 final of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.
- [i.11] ETSI TR 100 028-2: "ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics Part 2".
- [i.12] ETSI EG 203 336: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Guide for the selection of technical parameters for the production of Harmonised Standards covering article 3.1(b) and article 3.2 of Directive 2014/53/EU".
- [i.13] ETSI TS 100 908 (V8.10.0) (10-2001): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path (3GPP TS 05.02 version 8.10.0 Release 1999)".
- [i.14] ETSI TS 145 002 (V4.5.0) (11-2001): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path (3GPP TS 45.002 version 4.5.0 Release 4)".
- [i.15] ETSI TS 144 060 (V12.3.0) (01-2015): "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control / Medium Access Control (RLC/MAC) protocol (3GPP TS 44.060 version 12.3.0 Release 12)".
- [i.16] ETSI TS 100 910 (V8.20.0) (11-2005): "Digital cellular telecommunications system (Phase 2+); Radio Transmission and Reception (3GPP TS 05.05 version 8.20.0 Release 1999)".
- [i.17] ETSI TS 145 005 (V12.5.0) (04-2015): "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception (3GPP TS 45.005 version 12.5.0 Release 12)".
- [i.18] ETSI TR 121 905 (V12.0.0) (10-2014): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Vocabulary for 3GPP Specifications (3GPP TR 21.905 version 12.0.0 Release 12)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI TR 121 905 [i.18] and the following apply:

EGPRS: any subset of the packet traffic channels PDTCH/MCS-1 to MCS-9 and related control channels

E-GSM: extended GSM 900 band (includes P-GSM band)

environmental profile: range of environmental conditions under which equipment within the scope of the present document is required to comply with the provisions of the present document

ER-GSM 900: extended Railway GSM 900 band (includes R-GSM band)

GPRS: any subset of the packet traffic channels PDTCH/CS-1 to CS-4 and related control channels

GSM 900: P-GSM, E-GSM and R-GSM band unless otherwise specified,

GSM: GSM 400, GSM 900, ER-GSM 900 and DCS 1800 band unless otherwise specified

P-GSM: primary GSM 900 band

R-GSM: Railways GSM 900 band (includes P-GSM band and E-GSM band)

3.2 Abbreviations

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

AM	Amplitude Modulation
DLMC	Downlink Multi-Carrier
ECSD	Enhanced Circuit Switched Data
EGPRS	Enhanced GPRS
ER-GSM	Extended Railways GSM
GPRS	General Packet Radio Service
GSM	Global System for Mobile communications
HSCSD	High Speed Circuit Switched Data
MS	Mobile Station which includes a GSM radio part
RF	Radio Frequency
RX	Reception
TCH/FS	Traffic CHannel for Full rate Speech
TDMA	Time Division Multiple Access
TX	Transmission

4 Technical requirements specifications

4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be declared by the manufacturer. The equipment shall comply with all the technical requirements of the present document which are identified as applicable in annex A at all times when operating within the boundary limits of the required operational environmental profile.

4.2 Conformance requirements

4.2.0 Introduction

The present document contains all requirements that are needed for terminals to meet the essential requirement as defined in the Directive 2014/53/EU [i.9], article 3.2:

- The present document gives normative reference to a clause of ETSI TS 151 010-1 [2] containing the conformance requirement text and references to the base standard.

To meet the essential requirement under article 3.2 of Directive 2014/53/EU [i.9], a set of essential parameters have been identified. Table 2 provides a cross reference between these essential parameters and the corresponding technical requirements for equipment within the scope of the present document.