



SLOVENSKI STANDARD

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European digital cellular telecommunications system; Attachment requirements for
Global System for Mobile communications (GSM) mobile stations; Telephony

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ICS:

33.070.50	Globalni sistem za mobilno telekomunikacijo (GSM)	Global System for Mobile Communication (GSM)
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Foreword

This Technical Basis for Regulation (TBR) has been produced by the Special Mobile Group (SMG) Technical Committee of the European Telecommunications Standards Institute (ETSI). This TBR covers the attachment requirements for terminal equipment for the Global System for Mobile communications (GSM) telephony.

This TBR contains the procedures and requirements for the approval testing of GSM equipment supporting telephony.

The requirements of other TBRs apply in addition to this TBR.

For each test, *SUPPLEMENTARY INFORMATION* is provided, giving a justification why this item has been selected for regulatory testing, and a reference to the relevant article of the Terminal Directive [1].

This TBR is based on I-ETS 300 020-1 [2].

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1 Scope

This Technical Basis for Regulation (TBR) specifies the technical requirements to be provided by terminal equipment capable of connection to a public telecommunications network. These requirements apply to terminals for phase 1 of the public land mobile radio service utilising constant envelope modulation, operating in the 900 MHz band with a channel separation of 200 kHz, and carrying 8 full rate traffic channels per carrier according to the Time Division Multiple Access (TDMA) principle.

The objective of this TBR is to cover the requirements for GSM Telephony (speech).

NOTE: Certain access aspects are part of TBR 5 [7].

For each conformance requirement, one or more test purposes are given. For each test purpose, a single reference is given to the test method in I-ETS 300 020-1 [2]. The requirements apply to speech transmission.

The measurement uncertainty is handled, as described in I-ETS 300 020-1 [2].

This TBR covers the essential requirements of the Terminal Directive 91/263/EEC [1] Article 4g. Articles 4d, 4e and 4f are covered by TBR 5 [7].

The Terminal Directive 91/263/EEC [1] Articles 4a and 4b are covered by other directives, and, therefore, not by this TBR.

In this TBR, there are no EMC technical requirements in terms of the Terminal Directive 91/263/EEC [1], Article 4c.

NOTE: Technical requirements for EMC performance and testing of the equipment are covered by the relevant standards applicable to the EMC Directive 89/336/EEC, Annex A.
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Terminal equipment may be subject to additional requirements in other Common Technical Regulations (CTR) depending on the equipments' functionality.

I-ETS 300 020-1 [2] constitutes the full conformance test suite for GSM. The verification of the conformance requirements in this TBR is based on the tests described in this reference. The set of requirements in I-ETS 300 020-1 [2] and the set of requirements in this TBR need not be identical.

2 Normative references

This TBR incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revision of any of these publications apply to the requirements specified in this TBR, only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] Terminal Directive 91/263/EEC: "Council directive of 29 April 1991 on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity. ("The Terminal Directive)".
- [2] I-ETS 300 020-1 (GSM 11.10 v 3.14.0): "European digital cellular telecommunications system (phase 1); Mobile station conformity specifications, ETSI 1992".
- [3] CCITT Recommendation X.290 (1991): "Open Systems Interconnection - Conformance Testing Methodology and Framework, General Concepts".
- [4] CCITT Recommendation X.291 (1991): "Open Systems Interconnection - Conformance Testing Methodology and Framework, Abstract Test Suite Specification".

- [5] CCITT Recommendation X.294 (1991): "Open Systems Interconnection - Conformance Testing Methodology and Framework, Requirements on Test Laboratories and Clients for the Conformance Assessment Process".
- [6] ETS 300 085 (1990): "Integrated Services Digital Network (ISDN); 3,1 kHz telephony teleservice attachment requirements for handset terminals".
- [7] prTBR 5: "European digital cellular telecommunications system; Attachment requirements for Global System for Mobile communications (GSM) mobile stations; Mobile Services".

3 Information from the client to the test laboratory

The applicability of the individual tests in this TBR is dependent on the type of equipment submitted for approval.

The information required to be supplied from the client to the test laboratory appears in I-ETS 300 020-1 [2] Annex 3.

NOTE: The terms PICS and PIXIT in I-ETS 300 020-1 [2] are not the same as the corresponding terms in CCITT Recommendation X.290 [3] and CCITT Recommendation X.291 [4].

4 Other requirements to GSM mobile stations

Some special test functions (I-ETS 300 020-1 III [2]) shall be implemented by the manufacturer.

5 Structure of TBR

- Test group objective (only where applicable): gives a narration of the common objective for a group of closely related test cases.
- Test purpose (single or multiple): describes the purpose for performing a particular test i.e. which behaviour, action, etc. is to be tested.
- Test case references (procedures in GSM 11.10): points to the detailed test method and procedure in 11.10 to be used for the test.
- Conformance requirement: describes the requirements to be met in the test.
- Requirement reference (from the core specifications); identifies the GSM core specification(s) accommodating the requirement(s) for these test results. The identification is as accurate as possible, basically down to a logical unit of the given specification (chapter, section, subsection, etc.) determined on a per case basis.

6 References to GSM core specifications

This TBR incorporates by versioned references provisions from other GSM specifications. These documents are considered for further evidence when using this TBR.

NOTE: This list covers the scope for all GSM related TBRs and thus may contain more than actually referred to in this TBR.

<u>Number</u>	<u>Version</u>	<u>Title</u>
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GSM

02.02	3.2.0	Bearer Services Supported by a GSM PLMN
02.03	3.4.0	Teleservices Supported by a GSM PLMN
02.04	3.7.1	Description of Supplementary Services
02.06	3.2.0	Types of Mobile Stations
02.07	3.4.1	Mobile Station Features

02.09	3.1.0	Security Aspects
02.11	3.7.0	Service Accessibility
02.16	3.0.1	International MS Equipment Identities
02.17	3.2.0	Subscriber Identity Modules, Functional Characteristics
02.30	3.9.0	Man-machine Interface of the Mobile Station
02.40	3.2.0	Procedures for Call Progress Indications
02.82	3.6.1	Call Offering Supplementary Services
02.88	3.6.1	Call Restriction Supplementary Services
03.03	3.6.0	Numbering, Addressing and Identification
03.05	3.2.0	Technical performance objectives
03.10	3.3.0	GSM PLMN Connection Types
03.13	3.0.2	Discontinuous Reception (DRX) in the GSM System
03.14	3.0.2	Support of DTMF via the GSM System
03.20	3.3.2	Security-related Network Functions
03.40	3.6.0	Technical Realization Short Message Service Point-to-point
03.41	3.4.0	Technical Realization of Short Message Service Cell Broadcast
03.43	3.0.1	Technical Realization of Videotex
03.44	3.0.1	Support of Teletex in a GSM PLMN
03.45	3.3.0	Technical Realization of Facsimile Group 3 Service - transparent
03.46	3.2.1	Technical Realization of Facsimile Group 3 Service - non transparent
03.50	3.3.0	Transmission Planning Aspects of the Speech Service in the GSM PLMN System
04.01	3.0.1	MS-BSS Interface - General Aspects and Principles
04.02	3.0.2	GSM PLMN Access Reference Configuration
04.03	3.0.3	MS-BSS Interface : Channel Structures and Access Capabilities
04.04	3.3.4	MS-BSS Layer 1 - General Requirements
04.05	3.1.5	MS-BSS Data Link Layer - General Aspects
04.06	3.9.0	MS-BSS Data Link Layer Specification
04.07	3.3.3	Mobile Radio Interface Signalling Layer 3 - General Aspects
04.08	3.13.0	Mobile Radio Interface - Layer 3 Specification
04.10	3.2.3	Mobile Radio Interface - Layer 3 - Supplementary Services Specification -General Aspects
04.11	3.3.0	Point-to-point Short Message Service Support on Mobile Radio Interface
04.12	3.2.1	Cell Broadcast Short Message Service Support on Mobile Radio Interface
04.21	3.4.0	Rate Adaptation on MS-BSS Interface
04.22	3.7.0	Radio Link Protocol for Data and Telematic Services on the MS-BSS Interface
04.80	3.2.0	Mobile Radio Interface Layer 3 - SS Specification - Formats and Coding
04.82	3.1.3	Mobile Radio Interface Layer 3 - Call Offering SS Specification
04.88	3.1.3	Mobile Radio Interface Layer 3 - Call Restriction SS Specification
05.01	3.3.2	Physical Layer on the Radio Path (General Description)
05.02	3.6.1	Multiplexing and Multiple Access on the Radio Path
05.03	3.5.1	Channel Coding
05.04	3.1.2	Modulation
05.05	3.15.0	Radio Transmission and Reception
05.08	3.7.0	Radio Subsystem Link Control
05.10	3.5.1	Radio Subsystem Synchronization
06.01	3.0.0	Speech Processing Functions : General Description
06.10	3.2.0	GSM Full Rate Speech Transcoding
06.11	3.0.1	Substitution and Muting of Lost Frames for Full-rate Speech Traffic Channels
06.12	3.0.1	Comfort Noise Aspects for Full Rate Speech Traffic Channels
06.31	3.1.0	Discontinuous Transmission (DTX) for Full Rate Speech Traffic Channels
06.32	3.0.0	Voice Activity Detection
07.01	3.14.0	General on Terminal Adaptation Functions for MSs
07.02	3.8.0	Terminal Adaptation Functions for Services Using Asynchronous Bearer Capabilities
07.03	3.4.0	Terminal Adaptation Functions for Services Using Synchronous Bearer Capabilities
09.02	3.8.0	Mobile Application Part Specification
11.11	3.13.0	Specification of the Internal Logical Organization of the SIM and its Interfaces
11.40	3.6.0	System Simulator Specification (MS conformance test system)
12.10	3.0.1	Maintenance Provisions for Operational Integrity of MSs

7 Abbreviations

For the purposes of this TBR the following abbreviations apply:

Abbreviation	Full Term
BFI	Bad Frame Indication
CC	Call Control
DAI	Digital Audio Interface
DISC	DISConnect frame
DTX	Discontinuous Transmission (mechanism)
ERP	Ear Reference Point
IMSI	International Mobile Subscriber Identity
MRP	Mouth Reference Point
MTC	Mobile Terminating Call
MS	GSM Mobile Station
PCM	Pulse Code Modulation
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation Extra Information for Testing
PLMN	Public Land Mobile Network
RF	Radio Frequency
SACCH	Slow Associated Control CHannel
SDCCH	Stand-alone Dedicated Control CHannel
SID	Silence Descriptor
SIM	Subscriber Identity Module
SS	System Simulator
TCH	Traffic CHannel
TCH/FS	Full rate Traffic CHannel for Speech
TDMA	Time Division Multiple Access
TMSI	Temporary Mobile Subscriber Identity
VAD	Voice Activity Detection

8 Receiver

Reference: **GSM 05.05**

8.1 Test 1

Test purpose:

To verify that the Bad Frame Indication (BFI) performance for reference sensitivity on a TCH/FS does not exceed the requirements.

Test case:

GSM 11.10 II.4.1.2/3