

TS 100 588 V6.0.0 (1999-04)

Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Base Station System - Mobile-services Switching Centre
(BSS - MSC) interface;
Layer 1 specification
(GSM 08.04 version 6.0.0 Release 1997)**



GSM®
GLOBAL SYSTEM FOR
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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
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Foreword

This Technical Specification (TS) has been produced by the Special Mobile Group (SMG).

The present document defines the layer 1 specification for the Base Station System (BSS) to Mobile-services Switching Centre (MSC) interface within the digital cellular telecommunications system (Phase 2/Phase 2+).

The contents of the present document is subject to continuing work within SMG and may change following formal SMG approval. Should SMG modify the contents of the present document it will be re-released with an identifying change of release date and an increase in version number as follows:

Version 6.x.y

where:

- 6 indicates Release 1997 of GSM Phase 2+
- x the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- y the third digit is incremented when editorial only changes have been incorporated in the specification.

1 Scope

The present document defines the structure of the physical layer (layer 1) of the BSS-MSC interface for supporting traffic channels. Use of the physical layer for supporting Signalling System No.7 signalling links is covered in Technical Specification GSM 08.06.

The physical layer is the lowest layer in the OSI Reference Model and it supports all functions required for transmission of bit streams on the physical medium.

For the present document only digital transmission will be considered, the use of analogue transmission is a national concern.

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.
- For this Release 1997 document, references to GSM documents are for Release 1997 versions (version 6.x.y).

- [1] GSM 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".
- [2] CCITT Recommendation G.705: "Characteristics required to terminate digital links on a digital exchange".
- [3] CCITT Recommendation G.709: "Synchronous multiplexing structure".
- [4] CCITT Recommendation G.711: "Pulse code modulation (PCM) of voice frequencies".
- [5] CCITT Recommendation G.732: "Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s".
- [6] GSM 08.06: "Digital cellular telecommunications system (Phase 2+); Signalling transport mechanism specification for the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

3 Definitions and abbreviations

Abbreviations used in the present document are listed in GSM 01.04

4 Layer 1 Specification

All CCITT recommendations referred to are Blue Book.

Layer 1 shall utilise digital transmission at a rate of 2048 kbit/sec with a frame structure of 32 * 64kbit/sec time slots, as specified in CCITT Recommendation G.705 section 3.

Therefore the physical/electrical characteristics are defined in CCITT Recommendation G.703.

The functional characteristics are defined in CCITT Recommendation G.732 section 2 and 3.

Fault conditions should be treated in accordance with CCITT Recommendation G.732 section 4.

Speech encoding shall be the A-law as defined in CCITT Recommendation G.711.

The idle pattern must be transmitted on every timeslot that is not assigned to a channel, and to every timeslot of a channel that is not allocated to a call. The idle pattern shall be 01010100.

Synchronisation at the BSS for the transmitted 2048 kbit/sec bit stream shall be derived from the received 2048 kbit/sec bit stream.

Data encoding is covered in Technical Specification GSM 08.20.

NOTE: A predetermined number of the 64kbit/sec time slots may be used for signalling, to one or more base station systems.

Annex A (informative): Change Request History

Change history					
SMG No.	TDoc. No.	CR. No.	Section affected	New version	Subject/Comments
SMG#07				4.0.3	ETSI Publication
SMG#20				5.0.0	Release 1996 version
SMG#27				6.0.0	Release 1997 version

History

Document history		
V6.0.0	April 1999	Publication