

Apparatus for connection to public telecommunications systems using signalling systems over a 2048 kbit/s G.703 interface —

Part 3: Requirements for apparatus for connection to Channel Associated Signalling Systems (CASS)

ICS 33.040.60

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents



Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee TCT/6, Digital networks, upon which the following bodies were represented:

- British Approvals Board for Telecommunications
- British Telecommunications plc
- Cable and Wireless Communications plc
- Department of Trade and Industry — Communications Information Industries Directorate
- Federation of the Electronics Industry
- OFTEL (Office of Telecommunications)

This British Standard, having been prepared under the direction of the Telecommunications Assembly, was published under the authority of the Standards Board and comes into effect on 15 November 1998

© BSI 1998

Amendments issued since publication

Amd. No.	Date	Text affected

The following BSI references relate to the work on this standard:
Committee reference TCT/6
Draft for comment 97/636051 DC

ISBN 0 580 28215 5

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Normative references	1
3 Definitions and abbreviations	1
4 General	3
5 Physical connection	3
6 Physical interface	3
7 Call control functions for Type 1 channel associated signalling systems	4
8 Call control functions for Type 2 channel associated signalling systems	7
9 Information to be provided by the supplier	8
Annex A (normative) Testing conditions	10
Annex B (normative) Channel associated signalling tests	10
Bibliography	13
Figure 1 — Frequencies for the coding of digits	2
Figure B.1 — Configuration for testing channel associated signalling systems	10
Table 1 — Signalling codes used in Type 1 signalling	2
Table 2 — Signalling codes used in Type 2 signalling	2
Table 3 — Signalling channels for channel associated signalling	4
Table 4 — Frequency and cadences for supervisory tones	5

Foreword

This part of BS 7378 has been prepared by Technical Committee TCT/6, Digital networks. It supersedes the information on Channel Associated Signalling System (CASS) protocol currently given in BS 6450-4:1993.

BS 6450-4 is currently being restructured and a revision will be published in due course. When the new edition of BS 6450-4 is published it will contain revised references to this document in place of the requirements for CASS it currently contains.

Whereas the minimum essential requirements are covered in PD 7006, this part of BS 7378 provides a fuller description of the requirements of CASS. This part of BS 7378 is not required for regulatory purposes. PD 7006 records the essential requirements, consistent with Articles 4(c) to 4(f) of Directive 91/263/EEC, for the connection of terminal equipment to those telecommunications systems designated as a public telecommunications system by an order made under Section 9 of the Telecommunications Act 1984. As a consequence, although this document contains information that is also published in PD 7006:1995 it does not supersede it.

The DTI has proposed changes to National Approvals, to reduce the requirements in this case to no harm only, with consequential effect on PD 7006. In these circumstances, there is a risk that in future there will be no independent authoritative source for the CASS protocols (other than that obtainable from the original operator specifications: MNR 3 for Cable and Wireless (Mercury) CASS Type 1; and SIN 205 for BT CASS Type 2. BS 7378-3 has been developed to obviate this possibility, and to ensure that there is a single fully developed standard that could be used for any other application should the need arise (e.g. as could occur for proprietary interfaces, perhaps under the new CTE Directive). Based on BS 7378-1 for the underlying G.703 framing structure, it incorporates specifications for both types of CASS signalling. This part of BS 7378 is for use by those concerned with products that use CASS signalling.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations. In particular, attention is drawn to the Telecommunications Act 1984.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 13 and a back cover.

1 Scope

This part of BS 7378 specifies requirements for apparatus for connection to public telecommunications systems using channel associated signalling systems (CASS). These requirements apply to all such apparatus, irrespective of whether the apparatus provides additional interfaces, telecommunications services or functions.

NOTE 1 "Connection to public telecommunications systems" means both direct connection to a network termination point (NTP) and indirect connection where interworking occurs by means of the applicable NTP via one or more items of intervening apparatus.

The requirements made in this part of BS 7378 cover call set-up and clearing. They do not cover any supplementary services requirements that might exist. Requirements are specified in terms of apparatus performance at the interface at the apparatus terminations (see 4.1). The requirements are general design requirements intended to prevent interference with the PTOs' networks and with other users, but compliance is not intended to ensure full compatibility with CASS and will not necessarily ensure that the apparatus is satisfactory for the user's purpose.

NOTE 2 In addition to the design requirements specified in this standard, the requirements of other product standards may apply depending on the function of the apparatus.

NOTE 3 If the apparatus is to be connected to, or to interwork with, any service run by public telecommunications operators, it will have to meet the approval requirements applicable to that service.

The requirements for the safety of the public telecommunications systems from electrical conditions originating in the connected apparatus are not specified in this standard.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

BS 7378-1:1997, *Apparatus for connection to public telecommunications systems using signalling systems over a 2048 kbit/s G.703 interface — Part 1: Requirements for apparatus for connection to Digital Access Signalling Systems No. 2 (DASS 2)*.

CCITT Recommendation G.711 (1988), *Pulse code modulation (PCM) of voice frequencies*.

3 Definitions and abbreviations

3.1 Terms and definitions

For the purpose of this part of this standard, the definitions given in BS 7378-1:1997 apply, together with the following.

3.1.1

"abcd" bits

group of four bits within a signalling channel which are used to communicate a call control signal

NOTE The "a" bit is transmitted first.

3.1.2

channel

path for the conveyance of individual messages

NOTE 1 A channel may comprise any number of time slots. Channels need not comprise the same number of time slots.

NOTE 2 A pair of channels is required for bi-directional communication.

3.1.3

channel associated signalling

method of signalling in which signalling information relating to the traffic carried by a single channel is transmitted in the channel itself or in a signalling channel permanently associated with it

3.1.4

decadic pulsing

representation, by means of time slot 16 codes, of loop disconnect signalling which is nominally at a rate of 10 pulses per second

3.1.5

direct dialling in (DDI)

mode of operation of apparatus that enables incoming PSTN calls to apparatus to be routed, by use of information provided by the public network during the call set-up phase, to individual destinations without the intervention of the apparatus operator

NOTE The last two or more PSTN routing digits are utilized within the apparatus rather than in the public exchange, thus the DDI apparatus becomes part of the public national numbering plan.

3.1.6

interdigital pause (IDP)

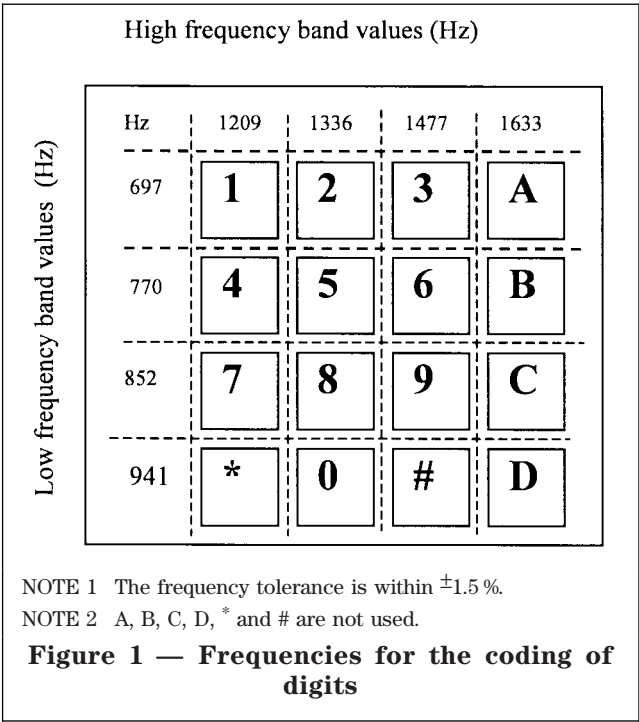
interval between successive digit signals

3.1.7

multi-frequency tone signalling

signals comprising two groups of four single frequency tones with each digit represented by a combination of two simultaneous tones, one from each group, as given in Figure 1

NOTE Successive tone signals are separated by an interdigital pause.



3.1.8 signalling channel
channel assigned to the conveyance of call control messages

3.1.9 time slot
assignment on a temporary basis, at regular cyclic intervals, of a portion of the complete bit stream associated with a port and which is used for the conveyance of all or part of a particular message

NOTE A time slot may comprise any number of bits, usually eight contiguous bits.

3.1.10 Type 1 signalling
channel-associated signalling arrangement which supports outgoing calls and either DDI or non-DDI incoming calls

NOTE The abcd bits used to describe the various call control signals are shown in Table 1.

3.1.11 Type 2 signalling
channel-associated signalling arrangement which only supports DDI incoming calls

NOTE The abcd bits used to describe the various call control signals are shown in Table 2.

Table 1 — Signalling codes used in Type 1 signalling

Signalling code				Signals from the PSTN to the apparatus	Signals from the apparatus to the PSTN
a	b	c	d		
0	0	0	1		Register recall
0	1	0	1	Answer, seize, make	Seize, make, answer, delay, dial
1	1	0	1	Free, break	
1	1	1	1	Busy	Backward busy
1	0	1	1	CAI Ringing	not used
1	0	0	1	CAI Silence	not used

Table 2 — Signalling codes used in Type 2 signalling

Signalling code				Signals from the PSTN to the apparatus (forward direction)	Signals from the apparatus to the PSTN (backward direction)
a	b	c	d		
0	0	1	1	Seize	Answer
0	1	1	1	not used	Free
1	0	1	1	Break	not used
1	1	1	1	Idle	Busy (also used for Recall)

3.2 Abbreviations
For the purpose of this part of this standard, the abbreviations given in BS 7378-1:1997 apply, together with the following.

- CAI call arrival indication
- CASS channel associated signalling system
- DDI direct dialling in
- DP decadic pulsing
- IDP interdigital pause
- MF multi-frequency
- NTP network termination point
- PSTN public switched telephone network