

**Draft standard to match to and work with
ETS 300 001/NET4**

**Apparatus using cordless
attachments (excluding
cellular radio apparatus) for
connection to analogue
interfaces of public switched
telephone networks run by
certain public
telecommunications operators**

**Part 6. Specification for cordless portable
parts and cordless fixed parts as separate
stand alone items**

Committees responsible for this Published Document

The preparation of this Published Document was entrusted by the Standards Policy Committee (TCT/-) to Technical Committee TCT/2, upon which the following bodies were represented:

British Approvals Board for Telecommunications
 British Facsimile Industry Consultative Committee
 British Radio and Electronic Equipment Manufacturers' Association
 British Telecommunications plc
 Cable and Wireless plc
 Communications Marketing and Servicing Association
 Computing Services Association
 Department of Trade and Industry (Telecommunications and Posts Division)
 EEA (the Electronics and Business Equipment Association)
 Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
 Engineering Equipment and Materials Users' Association
 Independent Broadcasting Authority
 Independent Telecommunications Suppliers' Association
 Institution of Electrical Engineers
 Kingston Communications (Hull) plc
 Mercury Communications Limited
 Mobile Radio Users' Association
 National Communications Union
 OFTEL (Office of Telecommunications)
 Telecommunication Engineering and Manufacturing Association
 Telecommunications Industry Association
 Telecommunications Managers' Association
 Telecommunications Users' Association (TUA)
 United Kingdom Offshore Operators' Association

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

British Gas plc
 British Micro Computer Manufacturers' Group (BMMG)
 Department of Trade and Industry (Radiocommunications Division)
 Electricity Supply Industry in England and Wales
 Society of Telecom Executives
 UK Telepoint Operators' Group

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Preface

This Published Document, PD 6570 : Part 2, has been prepared during the run-up to the anticipated designation of NET4 in November 1992.

It has been prepared under the direction of the Telecommunications Standards Policy Committee.

The text for the standard set out herein has been approved by both the TCT/2/3 Subcommittee and the TCT/2 Technical Committee and is derived from PD 6572.

However, because of the shortness of available time, it has not been possible to pursue the normal BSI procedure of correction and examination by the BSI's editorial department.

Consequently, this Published Document may contain errors and lack the quality of presentation of the usual BSI Published Documents.

The readers and users of this Published Document are requested to be indulgent and to notify us of any errors or ambiguities that might be encountered.

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APPARATUS USING CORDLESS ATTACHMENTS (EXCLUDING CELLULAR RADIO APPARATUS) FOR CONNECTION TO ANALOGUE INTERFACES OF PUBLIC SWITCHED TELEPHONE NETWORKS RUN BY CERTAIN PUBLIC TELECOMMUNICATIONS OPERATORS.

PART 6. Specification for cordless portable parts and cordless fixed parts as separate stand alone items of apparatus

Foreword

This Part of PD 6570 has been prepared under the direction of the Telecommunications Standards Policy Committee. It forms one of a series of British Standards that are being produced following the commencement of liberalization in October 1981 of the supply of certain telecommunications apparatus within the United Kingdom and the anticipated designation of NET 4 in November 1992.

This series of standards includes facility specifications giving particular requirements for individual facilities, together with standards covering general requirements for the connection of apparatus to communication various public telecommunications systems.

At the present time, these networks include the public switched telephone network, the telex network, the packet switching service and leased private circuits run by British Telecommunications plc, Kingston Communications (Hull) plc and Mercury Communications Limited.

The requirements specified in the standards are intended to ensure that apparatus complying with them, when connected to telecommunications networks, will neither adversely affect any network nor interfere with the service available to other users. The standards include safety requirements only for the protection of personnel operating the network and for the protection of users from hazards that may arise from the connection of the apparatus to the network.

The multi-part standard to which this Part belongs is intended to specify all the functions and facilities that require specifying for approval purposes for all variants of apparatus, using cordless attachments, submitted for approval for connection to analogue interfaces of public switched telephone networks.

This standard is a facility standard and the requirements specified are mandatory when applied to apparatus submitted for approval under the Telecommunications Act 1984.

This standard is presented for designation under Section 22 of the Telecommunications Act 1984. It is stipulated in that Section of the Act that apparatus falling within the scope of a designated standard may only be approved for connection to a telecommunication system if it complies with that standard, subject to such exceptions as may be determined by or under the designation.

A copy of the designation will be included, when available, with all copies of this standard and attention is drawn to the conditions made in such a designation.

Any further information on, or details of, the designation of this standard may be obtained from the Office of Telecommunications (OFTEL), Export House, 50 Ludgate Hill, London EC4M 7JJ.

Application for approval of apparatus should be addressed in the first instance to the Director, British Approvals Board for telecommunications (BABT), Claremount House, 34 Molesey Road, Hersham, Walton-on-thames, Surrey KT12 4RQ.

Some apparatus may incorporate facilities for which a mandatory standard is necessary, but for which no standard has yet been designated. Other apparatus may incorporate innovative features not foreseen when the relevant standard was written and designated and for which that standard is not fully appropriate. The BABT can sometimes deal with these cases by writing a 'Special investigation test schedule' (SITS) which has the effect of stating requirements where there is no designated British Standard or of supplementing or varying the requirements in the application of the designation British Standard. Information on any relevant SITS may be obtained from the Director, BABT.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Section one. General requirements for cordless fixed and portable parts

0 Introduction

0.1 The philosophy of this Part of PD 6570 is to consider the national requirements of the UK in specifying and testing cordless telephone apparatus which is compliant with the European Telecommunications Standards Institute (ETSI) specification I-ETS 300 131 'Common air interface specification to be used for the interworking between cordless telephone apparatus in the frequency band 864.1 MHz to 868.1 MHz, including public access services'.

0.2 Part 6 of PD 6570 is to be used in conjunction with Part 1 of PD 6570, the ETSI specification I-ETS 300 131, and other Parts of PD 6570 where appropriate, to provide the means for separately specifying and testing cordless portable parts and cordless fixed parts to suitably satisfy the characteristics and requirements of UK public switched telephone networks with analogue connection.

1 Scope

This Part of PD 6570 specifies requirements for cordless telephone apparatus using radio links, for connection to public switched telephone networks in the UK when the apparatus is intended to meet the common air interface requirements of the ETSI specification I-ETS 300 131.

Part 6 applies in conjunction with PD 6570: Part 1, and the requirements of Part 6 are additional to those of Part 1.

Part 6 does not apply to apparatus for connection to shared service lines.

This standard applies to apparatus intended for connection to a public telephone system. It is possible that such apparatus is suitable for indirect connection, i.e. connected to other apparatus, including cable and wiring, that has a direct connection to a public telephone system, provided that other requirements that are outside the scope of this standard are complied with.

2 Abbreviations and definitions

For the purpose of this Part of PD 6570 the abbreviations and definitions referred to in PD 6570: Part 1 apply together with those given in PD 6568 and the following:

2.1 Abbreviations

2.1.1 CTA. Cordless telephone apparatus.

2.1.2 CPP. Cordless portable part.

2.1.3 CFP. Cordless fixed part.

2.1.4 NTTA. Network termination and testing apparatus.

2.1.5 Qr. Q rating.

2.1.6 SLFP. Single PSTN line fixed part.

2.1.7 SLG. Single line group.

2.1.8 CCFP. Common control fixed part.

2.1.9 RFP. Radio fixed part.

2.1.10 CAI. Common air interface.

2.2 Definitions

2.2.1 cordless telephone apparatus (CTA). Apparatus which permits by radio means some or all of the functions of normal telephone apparatus and comprises one or more cordless fixed parts, one or more aerial systems and one or more cordless portable parts.

2.2.1.1 single-line CTA. A functional configuration of CTA that has one single PSTN line fixed part, one common control fixed part, at least one radio fixed part and one or more cordless portable parts.

2.2.1.2 multiple single-line CTA. A functional configuration, of all of the parts of a CTA, that maintains the exclusive association between each single PSTN line fixed part and its associated single line group but in which economies of scale are permitted with respect to the provision of common control fixed parts and/or radio fixed parts.

NOTE 1. If such exclusive association is not maintained then the apparatus is deemed to be 'Call Routing Apparatus'. Such apparatus is outside the scope of this Part but may be within the scope of other parts of PD 6570.

NOTE 2. Certain configurations of multiple single-line CTA that do maintain SLFP/SLG exclusive association will attract connection constraints nevertheless (see 21.5.2).

2.2.2 cordless portable part (CPP). A portable part of the cordless telephone apparatus which, by integral radio and aerial means and in conjunction with an associated cordless fixed part, permits some or all of the functions of normal telephone apparatus including manual initiation and termination of calls by a deliberate act.

NOTE. Automatic initiation and termination of calls by CTA is also permitted.

2.2.3 single PSTN line fixed part (SLFP). A fixed part of the cordless telephone apparatus providing the interface between a single PSTN line at the NTTA and the common control fixed part.

2.2.4 common control fixed part (CCFP). A fixed part of the cordless telephone apparatus providing the common controlling functions for one or more single PSTN line fixed parts and one or more radio fixed parts.

2.2.5 radio fixed part (RFP). A fixed part of the cordless telephone apparatus that interfaces between the common control fixed part and an aerial system for one duplex communication channel.

NOTE. Multiple RFP. It is a requirement of the DTI (RD) WIRELESS TELEGRAPHY licence exemption that no more than 12 RFPs may be

contained (nested) in a single enclosure.

2.2.6 cordless fixed part (CFP). A functional configuration of some or all of the fixed component (SLFP, CCFP, RFP) parts, associated with one SLG, of a cordless telephone apparatus that, in conjunction with one or more cordless portable parts, permits some or all of the functions of normal telephone apparatus.

2.2.7 single line group (SLG). One or more cordless portable parts that are allocated to the same single PSTN line fixed part.

2.2.8 NTTA. An item of telecommunication apparatus comprised in a specific public telecommunication system that enables telecommunication apparatus, approved under Section 22 of the Telecommunications Act 1984 for connection to that system, to be so connected.

2.2.9 cordless intercommunication. The condition where cordless portable parts are in communication with a facility not actively involving the PSTN.

2.2.10 [Not assigned]

2.2.11 active speech level. As defined in CCITT Recommendations P.10. The measurement of it is described in CCITT Recommendations P.56.

2.2.12 S_{DS} . The sending sensitivity of the apparatus from CAI to test point (see figure 5), when terminated in the impedance used to define impedance class (a) in ETS 300 001/NET4.

2.2.13 S_{DR} . The receiving sensitivity of the apparatus from test point (see figure 5) to CAI, when fed from a source with an impedance equal to the impedance used to define impedance class (a) in ETS 300 001/NET4.

2.2.14 S_{DJ} . The sending sensitivity of the apparatus from CAI to test point (see figure 5), when terminated in a non-reactive impedance of 600 ohms.

2.2.15 S_{JD} . The receiving sensitivity of the apparatus from test point (see figure 5) to CAI, when fed from a source with a non-reactive impedance of 600 ohms.

2.2.16 S_{RMD} . The electro-acoustic sending sensitivity from the mouth reference point to the CAI for the reference CPP.

2.2.17 S_{RDe} . The electro-acoustic receiving sensitivity from the CAI to the artificial ear reference point for the reference CPP.

2.2.18 S_{ST} . The sidetone sensitivity of the apparatus between the send and receive CAI points.

3 Facilities and functions

3.1 CTA specified in this Part of PD 6570 shall provide a cordless telephone facility using radio links operating in the band 864.1 MHz to 868.1 MHz. The facility shall be in accordance with both the Radiocommunications Agency specification MPT 1334 and the ETSI specification I-ETS 300 131, and may include the facilities and the functions of 3.2 to 3.7.

3.2 A single PSTN connection is available to one or more CPPs, using one or more radio links, with or without call transfer capability between CPPs. Wired telephone facilities may be provided that may have call transfer capabilities with CPPs.

3.3 Multiples of the telephone facilities described in 3.2 may be provided within a single apparatus consisting of one or more modules.

NOTE. This Part of PD 6570 does not cover the facility to interconnect or switch between the PSTN connections within a CTA or the facility of a CPP to operate with more than one SLFP in the same CTA.

3.4 A common control fixed part of CTA may select any suitable RFPs to establish a communication path as required, between a SLFP and its CPPs, or between the CPPs within a SLG.

3.5 Intercommunication may be provided between component parts of the CTA which are within the same SLG and are under the continuous control of the CCFP.

3.6 Conference facilities may be provided between component parts of the CTA which are within the same SLG.

3.7 Additional facilities may include those contained in PD 6569.

Compliance of CTA to meet the requirements shall be by the tests of this standard and those of the appropriate Part or Parts of PD 6569. Where an integral simple telephone facility is also provided, the tests of PD 6568 shall apply for that part of the CTA.

4 Marking and labelling

CPP marking and labelling shall comply with I-ETS 300 131 clause 9.9.

CFP marking and labelling shall comply with clause 12 of this standard.

5 Information to be provided by the supplier

5.1 Information required for testing purposes

Applicable to CPP and CFP

5.1.1 The requirements of clause 9.8 of I-ETS 300 131 shall apply.

5.1.2 Where the CPP or CFP is provided with any ringing detectors the supplier shall state their precise locations and criteria for the correct functioning of the ringing detectors together with the nominal direction of maximum sound emission, if applicable.

5.1.3 Where CPP or CFP utilises an external power source to provide the CPP or CFP functions, the supplier shall provide such information or means as is necessary to enable the CPP or CFP to be tested in conjunction with an appropriate external power source.

5.1.4 The supplier shall state which of the facilities and functions listed in 3 are available.

5.1.5 The supplier shall state which facilities or functions, not listed in 3, are included that are designed to interact with or affect the network.

5.1.6 The supplier shall state which, if any, of the test tone frequencies quoted in this standard will produce anomalous results due to being submultiples of some sampling frequency or other processing rate within the CPP or CFP. The supplier shall also state the substitute frequency that shall be used, within the limits of ± 1 % of the nominal test frequency.

Applicable to CPP only

5.1.7 The supplier shall state whether or not the CPP is provided with a user controlled receiving volume control.

Applicable to CFP only

5.1.8 The supplier shall state the classification of those characteristics of the CFP for which alternative requirements exist as given in table 1. The option of class (b) for impedance test termination will be withdrawn on 31st December 1994.

5.1.9 For the purpose of the compliance tests for 18.3 and 18.4, the supplier shall state whether or not the CFP has one or more earth connections, and if so, identify the position of the earth point for test purposes.

5.1.10 The supplier shall declare if the CFP:

- (a) utilises an external power source to provide the CFP functions (see 5.1.3); and
- (b) is capable of making outgoing calls to the Emergency Service with the external power source connected and operative (see 5.1.3); and
- (c) does not have an alternative facility capable of making outgoing calls to the Emergency Service with the external power source inoperative.

5.1.11 Where an external power source is utilised, and where the supplier has made a declaration in accordance with 5.1.10, the supplier shall declare whether or not:

- (a) the requirements of 17.1 for fully operational ringing detectors are met when the external power source is inoperative; and
- (b) the requirements of clause 15 of this standard are met when the external power source is inoperative.

5.1.12 Where the supplier has made a declaration in accordance with 5.1.10, the supplier shall provide the information or means necessary to ensure that any essential power sources are fully usable for the test described in B.11.

5.1.13 For the purposes of the test described in B.11, the supplier shall nominate a sequence of digits to be dialled.

5.1.14 For multiple single-line CFP, the supplier shall state the method of connection of the apparatus in terms of the requirements of 21.5.2.

5.1.15 The supplier shall state whether the apparatus has a means of disabling the ringing detector.

5.1.16 If, for an apparatus with a means of disabling the ringing detector (see 5.1.15)), the fully operational position of the ringing detector specified in 17.1 is not at the maximum volume position, the supplier shall state the position of the volume control at which compliance with 17.1 is to be checked.

Table 1. Classification			
Classification	Determining factor	Classification	Clause reference
Ringing detector type	As stated by supplier No ringing detector	a	17.1
Ringing detector disabling type	As stated by supplier	a	21.4.3(a)
		b	21.4.3(b)
	No disabling mechanism	c	21.4.3
Impedance test termination	As stated by supplier	class (a)	20.2 ; 20.3
	As stated by supplier	class (b)	20.2 ; 20.3

5.2 Instructions for use

Applicable to CPP and CFP

5.2.1 The instructions for use shall state that the CPP or CFP uses radio for communications and may not be able to provide the quality of service associated with a wired telephone.

NOTE. The instructions should indicate that discharged power sources in CFP or CPP may prevent use of the CPP or CFP.

5.2.2 Where the CPP or CFP includes the facilities to commence dialling or keying prior to the presence of the network proceed to dial indication, the instructions for use shall contain a statement to the effect that a connection to the PSTN is not guaranteed before the presence of the network proceed to dial indication, and that in the case of difficulty the user should wait until the proceed to dial indication is present.

Applicable to CPP ONLY

5.2.3 The instructions for use of CPPs purchased separately shall state that acceptable operation is dependent upon the configuration (capability) of the CFP.

NOTE. The instructions for use should advise the user to attach a label or other indication, on the CPP, displaying the PSTN or other number of the telephone and if the CFP is capable of making outgoing calls to the Emergency Service, the number that is to be dialled to access the Emergency Service.

Applicable to CFP only

5.2.4 The instructions for use shall contain the information required by 8.3 of this standard.

5.2.5 Where special signalling conditions (see clause 12 of PD 6568) are affected by the loss of power, there shall be a warning in the instructions for use.

5.2.6 Where an external power source is utilised to provide the CFP functions, the instructions for use shall contain sufficient information to allow the connection of a compatible external power source.

5.2.7 The instructions for use shall state the capability of the CFP in respect of receiving incoming calls with and/or without any external power source.

5.2.8 The instructions for use shall state whether the CFP is capable of making outgoing calls to the Emergency Service.

5.2.9 Where the CFP utilises an external power source to provide the CFP functions, the instructions for use shall state whether the CFP is capable of making outgoing calls to the Emergency Service if the external power source is made inoperative.

5.2.10 Where multiple single-line CFP is provided with cable terminations, the instructions for use shall identify each PSTN line connection and, for each PSTN line, the A, B and (if appropriate) the shunt wires.

5.2.11 Where intercom is provided within a SLG, the instructions for use shall state that there is a possibility that this provision will detract from the capability of some CPPs gaining outgoing access to the PSTN line.

5.2.12 Where multiple single-line CFP that complies with 21.5.2.1 is provided, the instructions for use shall state that there is a possibility of both incoming and outgoing call blocking and give a full explanation of this process. Furthermore, the instructions for use shall state that, if such phenomenon are experienced, the user is advised to consult the supplier or maintainer of the CFP, not the network operator.

5.2.13 Where multiple single-line CFP that complies with 21.5.2.1 is provided, the instructions for use shall state that only the network operator, or an approved installer, is allowed to make the connection between this type of CFP and the connection point.

5.2.14 Where multiple single-line CFP that complies with 21.5.2.1 is provided, the instructions for use shall state that it is possible that its connection procedure, grade of service and certain transmission parameters are subject to other regulations and codes of practice.

5.2.15 The instructions for use shall include a statement that it is possible that the apparatus is suitable for indirect connection and that, if the apparatus is to be connected to other apparatus including cable and wiring that has a direct connection to the PSTN, the user must ensure compliance with additional requirements, details of which the user can obtain from OFTEL.

5.3 Supplier's declaration

5.3.1 Supplier's declarations shall be based on evidence, held by the supplier, that the relevant requirements are met. Such evidence shall consist of actual test information or other substantiating material relating to the design of the apparatus.

5.3.2 The conditions under which the requirements shall be met are those specified in A.1.

6 Radio frequency interface

The requirements of clause 4 of I-ETS 300 131 shall apply.

7 Signalling layers one, two and three

The requirements of clauses 5, 6 and 7 of I-ETS 300 131 shall apply.

8 Speech coding

8.1 General

The speech coding requirements of clause 8 of I-ETS 300 131 shall apply.

8.2 Use of the CAI ADPCM voice codec

If the supplier has made use of the CAI ADPCM voice codec algorithm defined in I-ETS 300 131 then testing in respect of subjective speech quality is not required.

8.2.1

8.3 Speech algorithms in a CFP

8.3.1 It is a requirement of this standard that all CFPs shall contain the CAI ADPCM voice codec algorithm defined in I-ETS 300 131.

8.3.2 If a CFP contains an alternative speech algorithm, in addition to the CAI ADPCM voice codec algorithm, the CFP shall be designed to ensure that the alternative speech algorithm is only operable in conjunction with CPPs which contain an algorithm which meets the subjective speech test stated in I-ETS 300 131 when interworking with the alternative speech algorithm.

Compliance shall be by a suppliers declaration.

8.4 Speech algorithms in a CPP

If the supplier has made use of an alternative speech algorithm in the CPP then that algorithm shall meet the subjective speech quality test as defined in I-ETS 300 131 when interworking with a full CCITT Recommendation G.721 codec.

NOTE. Attention is drawn to the statement on 'Portable part ADPCM voice codec' in informative annex E of I-ETS 300 131.

Section two. General, electrical and acoustic characteristics specific to cordless portable parts

9 CPP General

The appropriate requirements of I-ETS 300 131 shall apply.

10 [Not assigned]

Section three. General, electrical and acoustic characteristics specific to cordless fixed parts

11 CFP General

NOTE. One or more indicators should be provided that indicate when the CFP is not capable of sustaining performance.

11.1 External power

NOTE 1. Internal batteries are not classed as an external power source.

NOTE 2. CPP recharging facilities may be incorporated in the CFP.

11.1.1 Use of external power source

Where the CFP utilises an external power source to provide the CFP functions, the requirement of this standard shall be met with the power source connected and operative.

11.1.2 Inoperative external power source

11.1.2.1 Where the supplier has made a positive declaration in accordance with 5.1.10 then a CFP shall continue to meet the requirements of clauses 14 to 22 for at least 30 min after its external power source is made inoperative, except that this requirement does not apply for a CFP that is not capable of making outgoing calls to the Emergency Service.

Compliance shall be checked by the test described in B.11 subject to the following additional factors in respect of the declaration specified in 5.1.11.

A SLFP shall go off-line and meet the requirements of clause 16 following the subsequent failure of its internal power source.

Compliance shall be checked by inspection.

11.1.2.2 Where the supplier states in accordance with 5.1.11(a) that the fully operational requirement in 17.1 is not met when the external power source is inoperative then for the purpose of clause 17 the ringing detector of the CFP shall be considered disabled. The 'items of apparatus similar to the original', referred to in the REN test of ETS 300/NET4, shall be CFP with the external power source inoperative.

11.1.2.3 Where the supplier states in accordance with 5.1.11(b) that the requirements of clause 15 are not met when the external power source is inoperative, no test shall be made in respect of that clause.

11.2 Independence of line polarity

The requirements of clauses 14 to 22 shall be met independently of line polarity. Compliance shall be checked by reversal of the d.c. voltage appearing between the A and B terminals of the CFP under test between individual tests as appropriate.

11.3 Specification of characteristics

Except where otherwise stated, the characteristics specified in clauses 14 to 22 apply to each single PSTN interface of a CFP.

12 CFP marking

12.1 The CFP shall be marked in accordance with clause 7 of Part 1 of this standard.

12.2 The CFP shall be marked with the manufacturer's or supplier's model number or type reference.

12.3 For multiple single-line CFP having cable terminations to the PSTN in accordance with 21.5.2.1, it shall be possible to identify each PSTN line connection and, for each PSTN line, the A, B and (if appropriate) the shunt wires.

The means of identifying the connections is left to the supplier but details shall be included in the information to be provided by the supplier in accordance with clause 5.

13 CFP safety

13.1 The requirements of BS 6301 shall apply.

13.2 The CFP shall be sufficiently robust to continue to meet the safety requirements when subjected to impacts of a severity likely to be encountered in normal use.

Compliance shall be checked by the test described in B.10. The insulation resistance shall continue to exceed 2 M ohm measured at 500 V d.c.

13.3 [Not assigned]

14 Multi-frequency (MF) tone signalling

NOTE. During MF transmission a 'confidence tone' in the telephone earpiece may occur, the level of which should not exceed normal speech levels.

15 Special signalling conditions

NOTE. These signalling conditions, where available, are provided only by special arrangements with the PTO.

15.1 General

Where the instructions for use give a warning that special signalling conditions are affected by the loss of external power (see 5.2.5), there are no requirements in respect to this clause when the external power is inoperative.

