PTC 216

Specification of the PTC requirements for Handsfree Conference Terminals

Access Standards

Spark Limited

Wellington

NEW ZEALAND

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Contents

SCOPE

This Specification covers the requirements for handsfree Conference Terminals. Such terminals are assumed to have audio capability, but may also include video capability, although protocols for video capability are not specified herein. It is assumed that when operating in audio mode, the terminal will be able to establish sessions to telephony users on one of the public telephone networks, e.g PSTN, VoIP, Mobile etc.

References

PTC 200: Requirements for Connection of Customer Equipment to Analogue lines

PTC 220: Requirements for Private Voice Networks connected to PSTN/ISDN

AS/NZS 4268: Radio equipment and systems - Short range devices

AS/CA S004:2013: Voice Performance Requirements for Customer Equipment

P.340:2005: Transmission characteristics and speech quality parameters of handsfree terminals

P.342:2009: Transmission Characteristics for narrow-band digital loudspeaking and hands-free telephony terminals

ITU-T Recommendation P.79: Calculation of Loudness Ratings for Telephone Sets

ETSI EN 301 406: DECT Generic Radio requirements

1 Terminal Categories

The following categories of Handsfree Conference Terminals are covered by this Specification. Note that video conference terminals are assumed to also have audio capability.

1.1 Terminal (audio only) for connection to the analogue PSTN.

1.2 Terminal (audio or video) connected to the ISDN.

1.3 Terminal (audio or video) connected to an IP network (either an IP PBX or a SIP trunking network connection).

1.4 Terminal (audio or video) connected to a mobile network

1.5 Acoustic transducers only (for example, Loudspeaker(s) and Microphone(s) connected to a SIP client via USB or Bluetooth etc).

2 PTC Requirements

2.1 Other regulatory requirements

2.1.1 Electrical Safety

(a) Terminal with analogue interfaces to the PSTN shall be tested against AS/NZS 60950 or equivalent.

All terminals which have built in power supplies shall be tested against AS/NZS 60950.

All external power supplies shall be tested against AS/NZS 60950. Note that these are high risk items and must be tested against AS/NZS 60950 and have a Certificate of Compliance issued by an authorised body.

(b) Terminals with digital interfaces will generally be only exposed to SELV, in which case electrical safety testing may not be necessary, unless they contain other components such as rechargeable Lithium batteries which would require the product to be tested against AS/NZS 60950.

2.1.2 Electromagnetic Compatibility

All terminals will require test reports against AS/NZS CISPR22 or equivalent.

2.1.3 Wireless

Where a terminal is connected to a base via wireless technology (Bluetooth DECT etc), test reports for the wireless technology used are required for a Telepermit grant.

- *Examples are AS/NZS 4268 for Bluetooth and EN 301 406 for DECT.*

2.2 Electroacoustic Testing of handsfree terminals

The general requirements for the testing of handsfree terminal are listed for each terminal type. The electroacoustic characteristics are the same for all terminal types and are measured between a standard acoustic interface and the network 0 dBr reference.

2.2.1 Test environment

The test equipment may comprise of either a free-field microphone and P.51 artificial mouth or a Head and Torso Simulator (HATS). The geometry of the test equipment and test sample shall be as described in ITU-T Recommendation P.342 clauses 4.2 and 4.3.

2.2.2 Test Requirements

2.2.2.1 Sending Characteristics

The Send Loudness Rating (SLR) shall be measured as described in ITU-T Recommendation P.342 clause 5.1. The SLR measured shall be 13 +/- 3 dB.

For a terminal with an analogue network interface, the SLR to the 0 dBr refernce will be 3 dB lower than that measured at the network 0 dBr reference. Measured at the network analogue interface the SLR shall be 10 +/- 3 dB.

- *The 3 dB allows for the 0.5 dB T pad loss at the analogue network interface and 2.5 dB traffic weighted mean Circuit Loss.*

2.2.2.2 Receiving Characteristics

The Receive Loudness Rating (RLR) shall be measured as described in ITU-T Recommendation P.342 clause 5.2. The RLR measured shall be 2 +/- 3 dB. This range of values of RLR shall be met for at least one setting of the volume control. It is also recommended that the volume control have at least 15 dB range available subject to the requirement for Weighted Terminal Coupling loss (TCLw).

For a terminal with an analogue network interface, the RLRs will be 8.5 dB lower than that measure at the network 0 dBr reference. Measured at the network analogue interface the RLR shall be -6.5 dB +/- 3 dB.

- *The 8.5 dB allows for the 6 dB R pad loss at the analogue network interface and 2.5 dB traffic weighted mean Circuit Loss.*

2.2.2.3 Weighted Terminal Coupling Loss

The Weighted Terminal Coupling Loss (TCLw) shall be measured as described in ITU-T Recommendation P.342 clause 5.3. The TCLw measured shall be greater than 40 dB, although a value of at least 45 dB is recommended.

2.2.2.4 Delay

The delay from the Mouth Reference Point (MRP) to the electrical interface and from the electrical interface to the artificial ear or free field microphone should be not more than 50 ms. This is an objective figure and in practice delays due to echo control and other signal processing may push the delay much higher than this. In a loudspeaking conferencing terminal, delays of up to 200 ms are acceptable.

2.3 Network Interface Specific Requirements

2.3.1 Terminals for connection to the analogue PSTN

2.3.1.1 Test Requirements

Analogue Terminals shall be tested against PTC 200.

2.3.2 Terminals for connection to the ISDN

2.3.2.1 Test Requirements

ISDN conference terminals shall be tested against the TNA 131 (BRA), TNA132 (PRI) TNA 133 and TNA 134.

2.3.3 Terminals for connection to an IP network

2.3.3.1 Test Requirements

IP conference terminals shall be tested against PTC 220 section 8.

2.3.4 Terminals for connection to a mobile network

2.3.4.1 Test Requirements

3G/4G Mobile terminals shall be tested against PTC 257.

- *The process for PTC testing for Mobile products is given in: http://www.telepermit.co.nz/SC-DT209 PTC257 Telepermit Application v7.0.pdf*

2.3.5 Electro-acoustic Terminals which are separate from the communications client

2.3.5.1 General

This is a class of terminal where the electro-acoustic part, that is the loud speaker(s) and microphone(s), are supplied separately from the communications client. An example of this class would be a loudspeaker/microphone pair connected by USB or Bluetooth to a PC running a SIP client. The SIP client may or may not be supplied by a different party. The interface would be similar to a headset interface and could potentially be connected in place of a telephone handset but more likely to be connected to a PC using USB or Bluetooth

2.3.5.2 Test Requirements

(a) For loudspeaker/microphone pair connected in place of a handset on a telephone.

(i) For an analogue Telephone, the combination of loudspeaker(s) and microphone(s) shall be connected to a suitable Telephone and the combination tested as per clause 2.2.1.1 of this Specification.

(ii) For a digital Telephone, the combination of loudspeaker(s) and microphone(s) shall be connected to a suitable Telephone and the combination tested as per clause 2.2.3.1 of this Specification.

(b) For loudspeaker/microphone pair connected to a communication client via USB or other digital connection.

(i) The loudspeaker/microphone pair shall be connected to the client and tested at the electrical interface as per PTC 220 section 8.

End of PTC 216