



**Minimum Technical Requirements for use of the HD Voice
Logo. Headset Electrical Interface (Annex G)
Version 2.0
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Annex G Minimum Requirements of the Headset Electrical Interface.

This Annex is applicable to Mobile Terminals that do not include a companion headset in the sales item box.

The tests in this Annex shall be conducted over a Headset Electrical Interface compliant to Section 6 of ITU-T P.381. For Mobile Terminals that do not include an analog Headset Electrical Interface compliant to Section 6 of ITU-T P.381, an Adapter shall be provided by the Mobile Terminal vendor. The Adapter shall provide a Headset Electrical Interface compliant to Section 6 of ITU-T P.381.

Recommended PIN Assignment

The Mobile Terminal, or Mobile Terminal in combination with Adapter, shall support headset functionality compliant to ITU-T P.381 Section 6.2.1 or Section 6.2.2 Pin Assignment.

References

ITU-T Recommendation P.381 (07/16) - Technical requirements and test methods for the universal wired headset or headphone interface of digital mobile terminals.

G.1 Minimum Requirements for Mobile Terminals in Communication mode for the usage of the 'HD Voice' logo

Test Setup for Terminal Communication Mode measurements

Test Setup for Terminal Communication Mode measurements in ITU-T P.381 per section 7.1.1. The Test Cases do NOT assume a Headset is connected to the Mobile Terminal, but the Mobile Terminal is connected to the Test System via the Mobile Terminal Headset Electrical Interface, monitoring the electrical input and output of the Mobile Terminal Headset Electrical Interface. No Acoustical interface such as a Head and Torso Simulator is needed.

G.1.1 Test Signals and Test Signal Levels

Test Signals and Test Signal Levels are per ITU-T P.381 Section 7.1.1.2.

G.1.2 Communication Mode – Delay

For Future Study (FFS)

G.1.3 Communication Mode – Level

G.1.3.1 Communication Mode – Level in Send

The test method is in accordance to ITU-T P.381 Section 7.1.3.2. The requirement is as follows:

The sending level shall be as specified in ITU-T P.381 Section 7.1.3.1.

G.1.3.2 Communication Mode – Level in Receive

The test method is in accordance to ITU-T P.381 Section 7.1.4.2. The requirement is as follows:

The receiving level shall be as specified in ITU-T P.381 Section 7.1.4.1.

G.1.4 Communication Mode – Frequency Response

G.1.4.1 Communication Mode – Frequency Response Sending Side

The test method is in accordance to ITU-T P.381 Section 7.1.7.2. The requirement is as follows:

The measured frequency response shall be within the limits as defined in ITU-T P.381 Section 7.1.7.1; Table 7-2 for narrowband and Table 7-3 for wideband.

G.1.4.2 Communication Mode – Frequency Response Receiving Side

The test method is in accordance to ITU-T P.381 Section 7.1.8.2. The requirement is as follows:

The measured frequency response shall be within the limits as defined in ITU-T P.381 Section 7.1.8.1; Table 7-4 for narrowband and Table 7-5 for wideband.

G.1.5 Communication Mode – Sidetone

G.1.5.1 Communication Mode – Sidetone Loss

The test method is in accordance to ITU-T P.381 Section 7.1.9.2. The requirement is as follows:

The talker sidetone masking rating (STMR) (electrical sidetone) shall be as specified in ITU-T P.381 Section 7.1.9.1.

G.1.5.2 Communication Mode – Sidetone Delay

The test method is in accordance to ITU-T P.381 Section 7.1.10.2. The requirement is as follows:

The maximum sidetone round-trip delay shall be as specified in ITU-T P.381 Section 7.1.10.1.

G.1.6 Communication Mode – Noise

G.1.6.1 Communication Mode – Noise in Sending Side

The test method is in accordance to ITU-T P.381 Section 7.1.11.2. The requirement is as follows:

The Signal-to-Noise Ratio (SNR) shall be as specified in ITU-T P.381 Section 7.1.11.1.

G.1.6.2 Communication Mode – Noise in Receiving Side

The test method is in accordance to ITU-T P.381 Section 7.1.12.2. The requirement is as follows:

The Signal-to Noise Ratio (SNR) shall be as specified in ITU-T P.381 Section 7.1.12.1.

G.1.7 Communication Mode – Distortion

G.1.7.1 Communication Mode – Distortion in Sending Side

The test method is in accordance to ITU-T P.381 Section 7.1.13.2. The requirement is as follows:

The ratio of signal to harmonic distortion shall be as specified in ITU-T P.381 Section 7.1.13.1.

G.1.7.2 Communication Mode – Distortion in Receiving Side

The test method is in accordance to ITU-T P.381 Section 7.1.14.2. The requirement is as follows:

The ratio of signal to harmonic distortion shall be as specified in ITU-T P.381 Section 7.1.14.1.

G.1.8 Noise Cancellation Test in Send

FFS.

G.1.9 Communication Mode – One-way Speech Quality

G.1.9.1 Communication Mode – One-way Speech Quality in Sending Side

The test method is in accordance to ITU-T P.381 Section 7.1.16.2. The requirement is as follows:

FFS.

G.1.9.2 Communication Mode – One-way Speech Quality in Receiving Side

The test method is in accordance to ITU-T P.381 Section 7.1.17.2. The requirement is as follows:

FFS.

G.1.10 Communication Mode – Terminal coupling loss TCLw

The test method is in accordance to ITU-T P.381 Section 7.1.18.2. The requirement is as follows:

The TCLw provided by the headset signal processing in conjunction with typical echo paths, as described in Figure 7-2 of ITU-T P.381, shall be as specified in ITU-T P.381 Section 7.1.18.1

G.2 Minimum Requirements for Headsets / Headphones in Communication Mode for the usage of ‘HD Voice’ logo

Test Setup for Headset Communication Mode measurements

Test Setup for Headset Communication Mode measurements in ITU-T P.381 Section 8.1.

The input and output characteristics of the test system for connecting the headset are as per ITU-T P.381 Section 8.1.1.1.

G.2.1 Test Signals and Test Signal Levels

Test Signals and Test Signal Levels are as per ITU-T P.381 Section 8.1.1.2.

G.2.2 Positioning of HATS, and fitting the Headsets to HATS

Guidelines laid out in ITU-T P.381 Section 8.1.1.3 and 8.1.1.4 shall be adhered to when setting up the tests.

G.2.3 Headset Communication Mode – Sensitivity

G.2.3.1 Headset Communication Mode – Sensitivity Sending side

The test method is in accordance to ITU-T P.381 Section 8.1.2.2. The requirement is as follows:

The sending sensitivity shall be as specified in ITU-T P.381 Section 8.1.2.1.

G.2.3.2 Headset Communication Mode – Sensitivity Receiving Side

The test method is in accordance to ITU-T P.381 Section 8.1.3.2. The requirement is as follows:

The receiving sensitivity shall be as specified in ITU-T P.381 Section 8.1.3.1.

G.2.4 Headset Communication Mode – Frequency Response

G.2.4.1 Headset Communication Mode – Frequency Response Sending Side

The test method is in accordance to ITU-T P.381 Section 8.1.4.2. The requirement is as follows:

The measured frequency response shall be as specified in ITU-T P.381 Section 8.1.4.1 Table 8-1.

G.2.4.2 Headset Communication Mode – Frequency Response Receiving Side

The test method is in accordance to ITU-T P.381 Section 8.1.5.2. The requirement is as follows:

The measured frequency response shall be as specified in ITU-T P.381 Section 8.1.5.1 Table 8-2.

G.2.5 Headset Communication Mode – Noise

The test method is in accordance to ITU-T P.381 Section 8.1.5.2. The requirement is as follows:

The measured frequency response shall be as specified in ITU-T P.381 Section 8.1.5.1.

G.2.5.1 Headset Communication Mode – Noise in Sending Side

The test method is in accordance to ITU-T P.381 Section 8.1.6.2. The requirement is as follows:

The idle noise in sending direction shall be as specified in ITU-T P.381 Section 8.1.6.1.

G.2.6 Headset Communication Mode – Distortion

G.2.6.1 Headset Communication Mode – Distortion in Sending Side

The test method is in accordance to ITU-T P.381 Section 8.1.7.2. The requirement is as follows:

The ratio of signal to harmonic distortion in sending side shall be as specified in ITU-T P.381 Section 8.1.7.1.

G.2.6.2 Headset Communication Mode – Coupling loss HTCLw

The test method is in accordance to ITU-T P.381 Section 8.1.8.2. The requirement is as follows:

The headset terminal coupling loss weighted (HTCLw) provided by the headset shall be as specified in ITU-T P.381 Section 8.1.8.1.

G.3 Minimum Requirements for Headsets / Headphones in Multimedia Mode for the usage of ‘HD Voice’ logo

Test Setup for Headset Multimedia Playback Mode measurements

Test Setup for Headset Multimedia Playback Mode measurements in ITU-T P.381 Section 8.2.1.

G.3.1 Test Signals and Test Signal Levels

The Test Signals and Test Signal Levels are as per ITU-T P.381 Section 8.2.1.2.

G.3.2 Positioning of HATS, and fitting the Headsets to HATS

Guidelines laid out in ITU-T P.381 Section 8.2.1.3 and 8.2.1.4 shall be adhered to when setting up the tests.

G.3.3 Multimedia Playback Mode – Sensitivity

The test method is in accordance to ITU-T P.381 Section 8.2.2.2. The requirement is as follows:

The simulated programme signal characteristic voltage shall be as specified in ITU-T P.381 Section 8.2.2.1.

G.4 Minimum Functional Requirements for Headsets / Headphones for the usage of ‘HD Voice’ logo

G.4.1 3.5 mm diameter plug connector with four poles

The plug connector with four poles shall conform to requirements per ITU-T P.381 Appendix I.3.

G.4.2 3.5 mm diameter socket connector with four poles

The socket connector with four poles shall conform to requirements per ITU-T P.381 Appendix I.4.

Template for reporting test results

FFS.

Document Management

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	14 August 2015	Inclusion of minimum network & terminal requirements for the use of HD Voice Logo Headset Jack and Socket Interface	TSG	Andre Schevciw, (Qualcomm, Incorporated)
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Other Information

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