HEAD acoustics

DATA SHEET



Code 60076

CTIA SPTP

CTIA Speech Performance Test Plan, Narrowband, Wideband, and Super-Wideband

OVERVIEW

CTIA SPTP

Code 60076

CTIA Speech Performance Test Plan, Narrowband, Wideband, and Super-Wideband

The CTIA Speech Performance Test Plan specifies test methods to assess the requirements for the acoustic characteristics of terminals.

The CTIA SPTP ACQUA standard includes the narrowband (NB) part, wideband (WB) part, and super-wideband (SWB) part of speech quality measurements from version 2.7 of the CTIA Speech Performance Test Plan.

Therefore, CTIA SPTP enables manufacturers of mobile terminal devices to ensure that their devices meet the requirements specified in the CTIA Speech Performance Test Plan.

ctia™ Everything Wireless™

KEY FEATURES

Automated and repeatable test sequences

Measurements for narrowband/wideband/super-wideband according to the CTIA Speech Performance Test Plan

Analyses of narrowband/wideband/super-wideband measurements according to the CTIA Speech Performance Test Plan

Auto-fill of report templates with results from the measurements/analyses

APPLICATIONS

Conformance testing, automated quality analysis, as well as experimental development and optimization of mobile terminal devices according to the CTIA Speech Performance Test Plan

CTIA SPTP provides projects including measurements and requirements for:

- Handsets
- Headsets
- Headset interfaces
- Handheld hands-free / speakerphones
- Wrist-worn wearables (e.g., smartwatches)

DETAILS

The business association CTIA represents the wireless communications industry in the USA. Their Speech Performance Test Plan lays out tests for the speech quality and electro-acoustic performance aspects of mobile terminals.

DESCRIPTION

General

The narrowband (NB) part, wideband (WB) part, and the super-wideband (SWB) part of the CTIA Speech Performance Test Plan are implemented in the CTIA SPTP ACQUA standard. CTIA SPTP enables fast and easy acquisition, analysis, and documentation of measurement data. It contains predefined measurements, analyses, and automated measurement sequences.

The CTIA Speech Performance Test Plan (version 2.7) is based on measurements from:

- 3GPP TS 26.132 v18.2.0 (2024-03)
- ETSI TS 103 334 v1.1.1 (2018-01)
- ETSI TS 103 607 v1.1.1 (2024-07)
- ETSI EG 202 518 v1.4.1 (2014-01)
- Recommendation ITU-T P.863 (2018-03)

Database Structure

The ACQUA standard divides into five ACQUA projects. Each project provides measurements and analyses for a device type and its allocated bandwidths in CTIA SPTP:

- Handset
- Headset
- Headset interface
- Handheld hands-free
- Wrist-worn wearables

MEASUREMENTS AND ANALYSES

Handset

- Loudness rating
- Idle channel noise
- Frequency response
- Distortion (sinusoidal)
- Sidetone masking rating

- Echo loss (TCLw)
- Double Talk
- Speech quality in the presence of background noise
- Speech quality with packet variation (only packet-switched connection)
- Maximum acoustic pressure

Headset

- Loudness rating
- Sidetone masking rating
- Idle channel noise
- Frequency response
- Distortion (sinusoidal)
- Echo loss (TCLw)

Headset Interface

- Loudness rating
- Sidetone masking rating
- Idle channel noise
- Frequency response
- Echo loss (TCLw)

Handheld Hands-Free

- Loudness rating
- Frequency response
- Echo loss (TCLw)
- Speech quality in the presence of background noise

Wrist-Worn Wearables

- Loudness rating
- Frequency response
- Echo loss (TCLw)
- Speech quality in the presence of background noise

GENERAL REQUIREMENTS

All Projects

Hardware Platform

*lab*CORE (Code 7700)
- Modular multi-channel hardware platform

Measurement and Analysis Software

One of the following software applications:

ACQUA (Code 6810)
- Advanced Communication Quality Analysis Software, full license version

ACQUA Compact (Code 6860)
- Compact test system

Network Simulation

Radio communication tester (third-party equipment)

For detailed requirements of each project, refer to *Project Requirements on page 5*

SCOPE OF DELIVERY

CTIA SPTP (Code 60076)
- delivered as ACQUA database backup

V2C file
- License file for ACQUA dongle

Revision history
- PDF file

PROJECT REQUIREMENTS

Project / Product Required: ✓ Not required: ✗	Handset	Headset	Headset Interface	Handheld Hands-Free	Wrist-Worn Wearables
› *core*BUS (Code 7710) » *lab*CORE I/O bus mainboard	✓	✓	✗	✓	✓
› *core*OUT-Amp2 (Code 7720) » *lab*CORE power amplifier board	✓	✓	✗	✓	✓
› *core*IN-Mic4 (Code 7730) » *lab*CORE microphone input board	✓	✓	✗	✓	✓
› *core*BEQ (Code 7740) » *lab*CORE binaural equalization for one artificial head	✓	✗	✗	✓	✓
Packet-switched network › *core*IP (Code 7770) » *lab*CORE I/O module, Voice over IP reference gateway One of the following *lab*CORE codec options according to the desired band-widths: Narrowband/wideband codec › *core*IP-AMR (Code 7772) » *lab*CORE AMR codec option Super-wideband codec › *core*IP-EVS (Code 7773) » *lab*CORE EVS codec option	✓	✓	✓	✓	✓
Packet-switched network impairments › *core*IP-IMP (Code 7771) » *lab*CORE VoIP impairment option	✓	✗	✗	✗	✗
One of the following HEAD Measurement Systems: › HMS II.3 (Code 1703) » HEAD Measurement System, basic version with right ear simulator, 3.3 pinna and artificial mouth › HMS II.3 LN (Code 1703.1) » HEAD Measurement System, low-noise version with right ear simulator, 3.3 pinna and artificial mouth › HMS II.3 LN HEC (Code 1703.2) » HEAD Measurement System, HEAD Measurement System, low-noise version with human ear canal simulator right, and artificial mouth	✓	✓	✗	✓	✓

Project / Product Required: ✓ Not required: ✗	Handset	Headset	Headset Interface	Handheld Hands-Free	Wrist-Worn Wearables
Binaural application One of the following left HEAD Impedance Simulators for the respective HEAD Measurement System: › HIS L (Code 1701) » HEAD Impedance Simulator, left › HIS L LN(Code 1701.1) » HEAD Impedance Simulator, left, low-noise version › HIS L LN HEC (Code 1701.2) » HEAD Impedance Simulator, left, low-noise version, human ear canal simulator	✗	✓	✗	✓	✓
One of the following handset positioners: › HHP IV (Code 1406) » Handset positioner, MotoMount (Hexapod) version › HHP III.2 (Code 1430) » Handset positioner, VariMount version	✓	✗	✗	✗	✗
Background noise simulation › 3PASS *lab* (Code 6990) » Advanced background noise simulation system with automated equalization – lab version	✓	✗	✗	✓	✓
Narrowband and Wideband › ACOPT 21 (Code 6844) » Option 3QUEST – 3fold Quality Evaluation of Speech in Telecommunication (narrowband/wideband) › Measurement microphone (third-party equipment)	✓	✗	✗	✓	✓
Super-Wideband › ACOPT 35 (Code 6866) » Option 3QUEST – Super-wideband/Fullband according to ETSI TS 103 281, Model A › ACOPT 09 (Code 6819) » Option SLVM P.56	✓	✗	✗	✓	✗
› ACOPT 30-SL (Code 6876) » Option POLQA (Soft license)	✓	✗	✗	✗	✗
› ACOPT 32 (Code 6859) » Option Speech-based Double Talk analysis	✓	✗	✗	✗	✗

Project / Product Required: ✓ Not required: ✗	Handset	Headset	Headset Interface	Handheld Hands-Free	Wrist-Worn Wearables
Electrical interfaces, one or multiple of the following: Digital, USB › *core*USB-DR (Code 7705) » *lab*CORE I/O module, USB device reference Digital, Bluetooth® Classic › *core*BT2 (Code 7782) » *lab*CORE I/O Module, Bluetooth reference access point Digital, Bluetooth Low Energy, Unicast › *core*BT2LE-EVO (Code 7805) » *lab*CORE I/O Module, Bluetooth Reference Access Point Version 3, Base for Low Energy Audio (LC3) › *core*BT2LE-Unicast (Code 7789) » *lab*CORE Bluetooth Low Energy Audio (LC3), option Unicast (*core*BT2LE module required) Analog, TRRS › HIB I (Code 6002) » Headset Interface Box	✗	✗	✓	✗	✗
Alternative to radio communication tester for wrist-worn wearables › *core*BT2 (Code 7782) » *lab*CORE I/O module, Bluetooth reference access point	✗	✗	✗	✗	✓

OPTIONS

Bluetooth Volume Control

CBA IV-V1 (Code 6599-V1)

› Bluetooth transceiver for *lab*CORE module *core*BT2 (USB-based, includes antenna)

*core*BT2HID (Code 7786)

› *lab*CORE Bluetooth human interface device (requires CBA IV-V1, if *core*BT2 has not been acquired)

Bluetooth Classic Codec Option

*core*BT2-LC3-HFP (Code 7785)

› *lab*CORE Bluetooth LC3 option for HFP (*core*BT2 module required)

Upgrade Path

This upgrade path applies to customers who already purchased TS 26 131-32 (Code 6777) and UG TS 26 SWB/FB (Code 60028).

UG CTIA SPTP (Code 60077)

› Upgrade TS 26 SWB/FB > CTIA SPTP

RELEASE NOTES

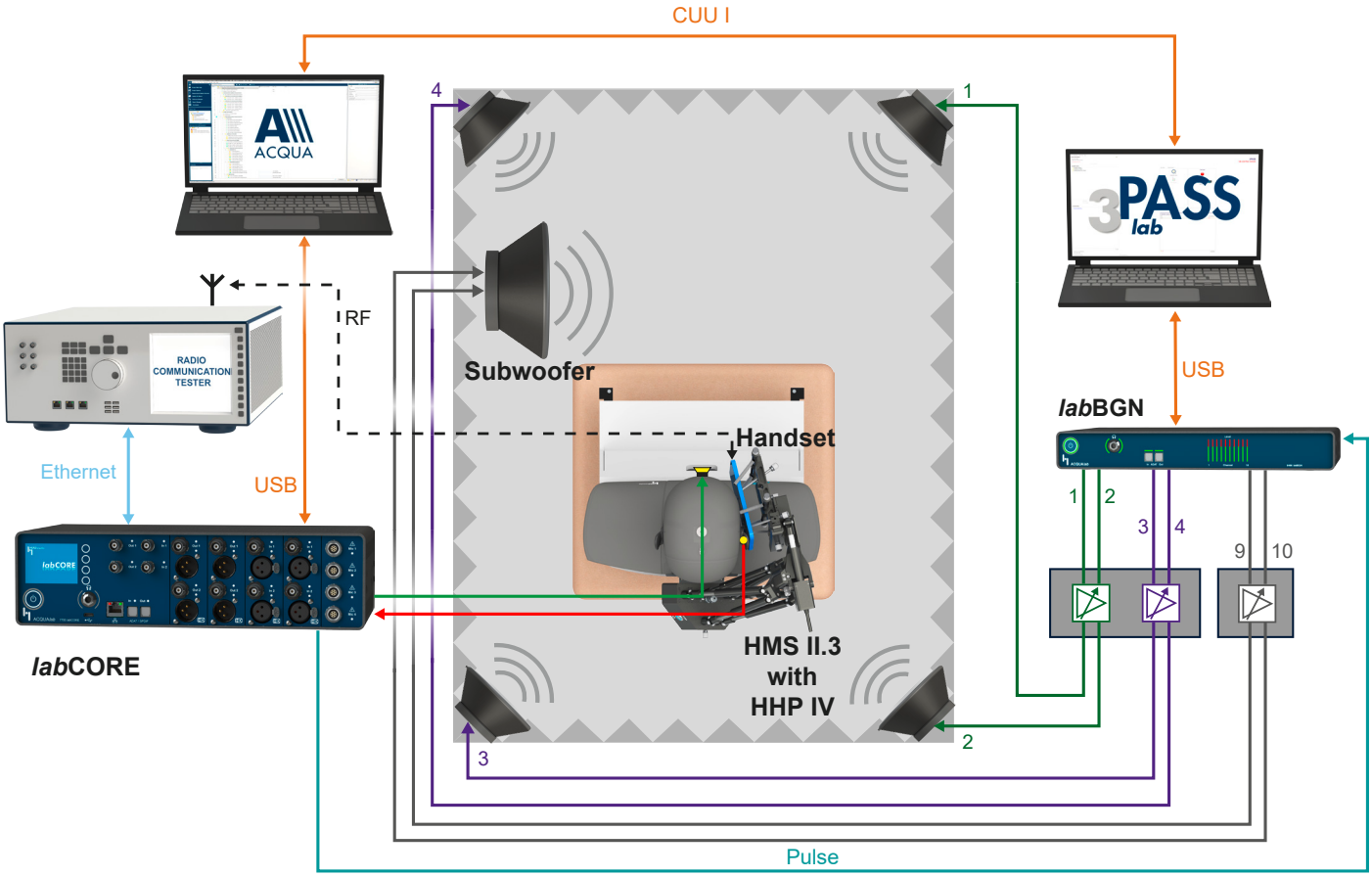
Database Revision and Specification Version			
Database revision	**Based on specification**	**ACQUA version**	***lab*CORE firmware version**
Revision 01	CTIA Speech Performance Test Plan version 2.7 (July 2026)	at least 6.3.100	at least 3.16

IN PRACTICE

APPLICATION EXAMPLE

Handset: VoIP Measurements with Ambient Noise

The handset is clamped into HHP IV and connected via packet-switched network to the radio tester. *lab*CORE transmits signals to HMS II.3 for playback and receives signals from HMS II.3 for recording. ACQUA generates the signals for playback and analyzes the recorded signals. 3PASS *lab* plays back interfering background noises and ACQUA assesses speech signal processing of the handset according to the requirements of CTIA SPTP.



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