HEAD acoustics

APPLICATION
EXAMPLES
INCLUDED

Code 60049

TIA-920.130-B

Digital Interface Communications Devices with Headsets

OVERVIEW

TIA-920.130-B

Code 60049

Digital Interface Communications Devices with Headsets

The TIA-920.130-B AQUA standard incorporates transmission requirements from ANSI/TIA-920.130-B-2018 for digital interface communications with headsets. HEAD acoustics provides all measurements and analyses in one database to verify compliance with ANSI/TIA-920.130-B-2018.

The implementation of the database is executed with ACQUA. HEAD acoustics also provides all necessary hardware for executing the measurements.

The ACQUA standard combines requirements for narrowband and wideband measurements according to the specification.

KEY FEATURES

Automated and repeatable test sequences

Measurements according to the methods from ANSI/TIA-920.130-B-2018

Assessment according to the requirements from ANSI/TIA-920.130-B-2018

APPLICATIONS

USB headsets

Headsets for VoIP communications devices (cordless, corded)

Bluetooth® headsets

DECT headsets

DETAILS

DESCRIPTION

TIA-920.130-B includes measurements and analyses from ANSI/TIA-920.130-B-2018 for headsets with digital interfaces for connecting to communications devices. These headsets shall have the functionality for narrowband and/or wideband transmission. The supported digital interfaces are USB, VoIP, DECT, and Bluetooth wireless technology. Available measurements are executed in receiving direction as well as sending direction. They include determination and analysis of parameters such as frequency response, noise, distortion, and sidetone. Furthermore, there are measurements for evaluating the echo attenuation performance and stability loss of the device under test. The ACQUA standard also consists of informative measurements to assess speech quality in sending direction with the presence of background noise.

MEASUREMENTS

All measurements are available for devices with narrowband transmission and/or wideband transmission.

Receive performance

› Delay
› Output level
› Volume control
› Frequency response
› Noise idle channel
› Noise active channel
› Single frequency interference idle channel
› Distortion and noise

Sending performance

› Delay
› Output level
› Frequency response
› Noise without stimulus
› Single frequency interference idle channel
› Noise with stimulus
› Distortion and noise

Talker sidetone performance

› Sidetone masking rating
› Sidetone delay

Echo return loss and stability

› Weighted terminal coupling loss
› Stability loss

Informative measurements

› 3QUEST: Speech quality in the presence of background noise

OPTIONS

Software

3PASS *lab* (Code 6990)
› Advanced background noise simulation system with automated equalization – lab version

ACQUA options

ACOPT 21 (Code 6844)
› Option 3QUEST – 3fold Quality Evaluation of Speech in Telecommunication (narrowband/wideband)

RELEASE NOTES

Database revision and specification version

Database revision	Based on specification	ACQUA version
Revision 02	ANSI/TIA-920.130-B-2018	at least 6.0.200

SCOPE OF DELIVERY

TIA-920.130-B (Code 60049)
› delivered as ACQUA database backup
V2C file
› License file for ACQUA dongle
Revision history
› PDF file

GENERAL REQUIREMENTS

Hardware

General

*lab*CORE (Code 7700)
› Modular multi-channel hardware platform
*core*BUS (Code 7710)
› I/O bus mainboard
*core*IN-Mic4 (Code 7730)
› *lab*CORE microphone input board
*core*OUT-Amp2 (Code 7720)
› *lab*CORE power amplifier board

HEAD measurement system

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, low-noise version with human-like ear canal simulator (right) and artificial mouth
HMS II.3 ViBRIDGE (Code 1703.3)
› HEAD measurement system, low-noise, with human-like ViBRIDGE (bone conduction simulation) ear simulators (left and right) and artificial mouth

Only for binaural applications

Appropriate HEAD impedance simulator 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, human-like ear canal version

Continued on next page

GENERAL REQUIREMENTS

USB connection

Included in *lab*CORE (Code 7700)

Bluetooth connection

*core*BT2 (Code 7782)
› *lab*CORE I/O module, Bluetooth reference access point, version 2

DECT connection

MFE X (Code 6481)
› Digital hardware platform for DECT/NG-DECT/CAT-iq™

IP connection

*core*IP (Code 7770)
› *lab*CORE I/O module, Voice over IP reference

Software

One of the following software applications:

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

ACQUA Compact (Code 6860)
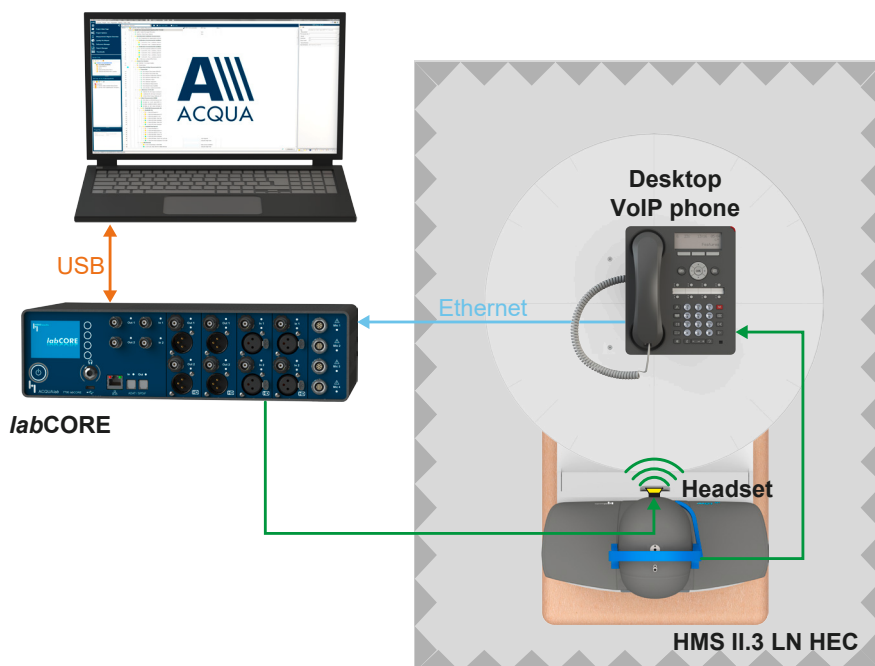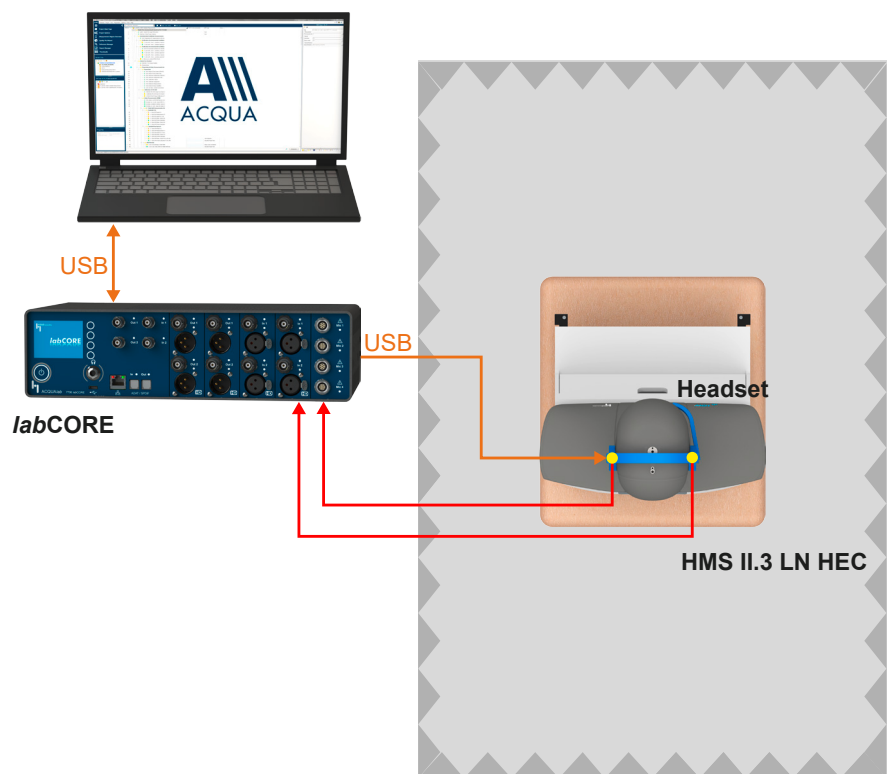› Compact test system

ACQUA options

ACOPT 09 (Code 6819)
› Option SLVM P.56

IN PRACTICE

APPLICATION EXAMPLES

Measurements in receiving direction with USB headset (exemplary)

*lab*CORE connects to the headset and ACQUA PC via USB. ACQUA sends the measurement signal via *lab*CORE to the headset. The signal plays back at the headset and the ear microphones of HMS II.3 LN HEC transmit it via *lab*CORE to ACQUA for recording and analyses.

USB

USB

Headset

***lab*CORE**

HMS II.3 LN HEC

USB

***lab*CORE**

Ethernet

**Desktop VoIP phone**

Headset

HMS II.3 LN HEC

Measurements in sending direction with IP speakerphone (exemplary)

*lab*CORE connects to the ACQUA PC via USB and to the desktop VoIP phone via Ethernet. The headset connects to the VoIP phone via the default interface. ACQUA sends the measurement signal via *lab*CORE to the mouth of HMS II.3 LN HEC. The signal plays back at the mouth loudspeaker and the boom microphone of the headset transmits it via VoIP phone and *lab*CORE to ACQUA for recording and analyses.

Measurements with Bluetooth headset to determine the sidetone masking rating (exemplary)

*lab*CORE connects to the ACQUA PC via USB and to the headset via Bluetooth. ACQUA sends the measurement signal via *lab*CORE to HMS II.3 LN HEC. The signal plays back at the mouth loudspeaker of HMS II.3 LN HEC. The headset microphone picks up the signal and the headset loudspeaker plays it back. Then, the ear microphones from HMS II.3 LN HEC transmit the signal via *lab*CORE to ACQUA for recording. ACQUA calculates the sidetone masking rating (STMR) according to recommendation ITU-T P.79.

USB

lab*CORE

Bluetooth®

HMS II.3 LN HEC wearing the headset
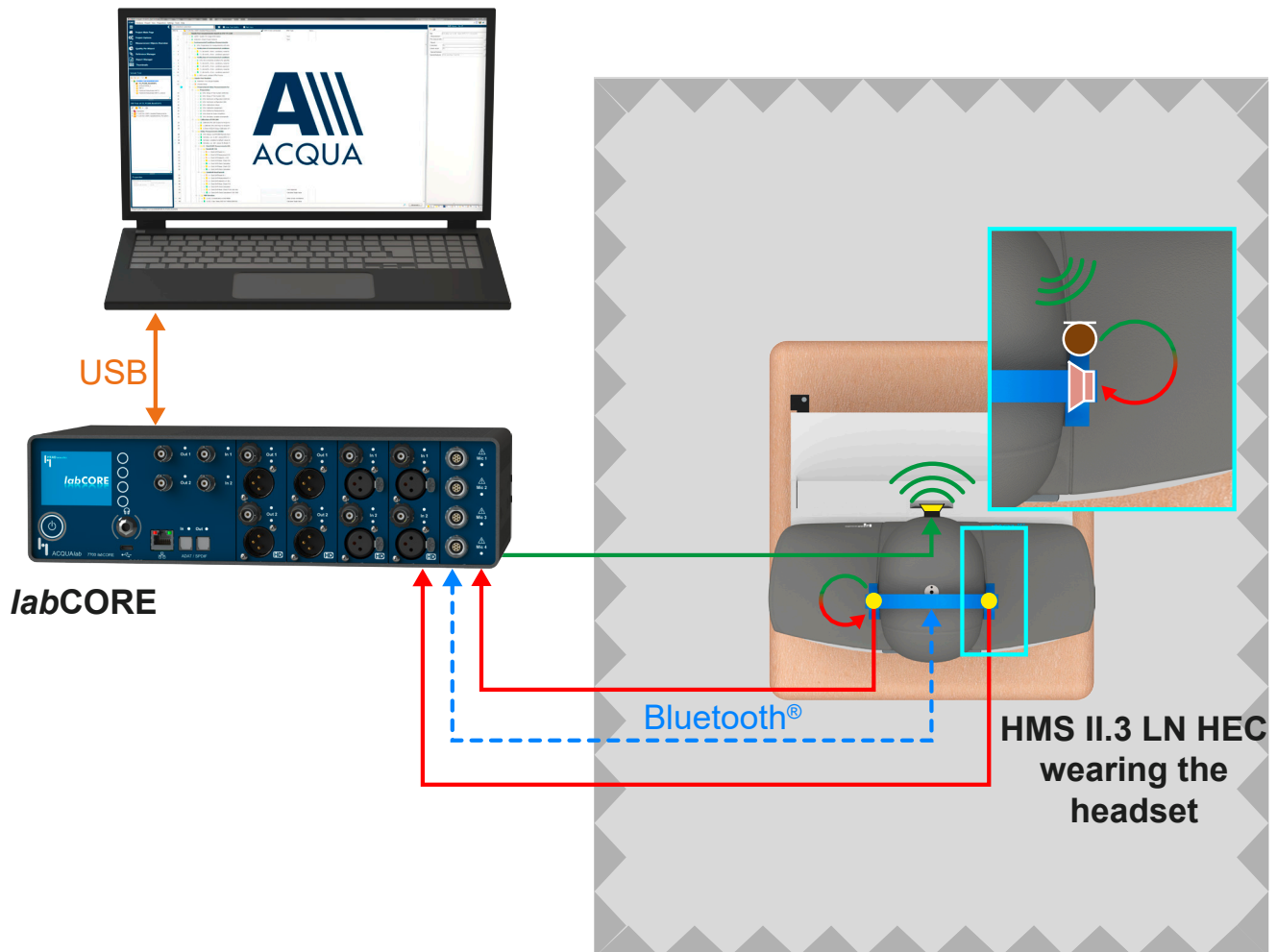
The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by HEAD acoustics GmbH is under license. Other trademarks and trade names are those of their respective owners.

HEAD acoustics

Contact Information

Ebertstraße 30a
52134 Herzogenrath, Germany
Phone: +49 (0) 2407 577-0
E-Mail: sales@head-acoustics.com
Website: www.head-acoustics.com