



Description

The connectors of HIB I are grouped by purpose. The backside holds the audio connectors to the hardware platform (4 x BNC), to the ACQUA-PC and the power supply. Connection to the DUT is established through BNC connectors on the front. The only non-BNC audio connector is the frontal 4-pin 3.5mm jack for headsets. The respective adapter cables CUD II, CJB II and CBB IV.5 are standard delivery items.

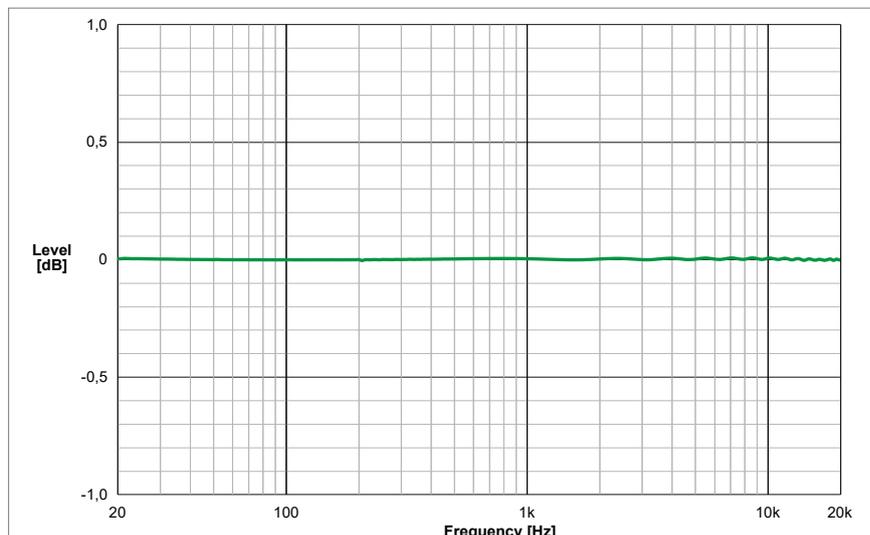
HIB I is powered through a standard Micro-USB connector (≥ 1.0 A). If a specific setup is prone to externally induced noise or ground loops, HIB I also allows grid-independent operation. An integrated, rechargeable battery ensures best-possible isolation from grid-induced noise. When selected, ACQUA automatically disconnects the power supply and

charging circuitry during measurements. Outside of measurements, the power supply recharges the battery. The current power status of HIB I is indicated by LEDs on the front.

HIB I is automatically configured and operated by ACQUA. Alternatively, the standalone software tool RC-HIB I (Code 6983) can be used. HIB I offers the following modes of operation, supporting a multitude of test scenarios.

Testing telephones

For testing telephones, HIB I simulates a reference headset by emulating its headphone as well as microphone part. Selectable load impedances allow to test the behavior of the telephone's internal amplifier on varying headphone impedances to examine impact on speech and audio quality.



Typical frequency response of HIB I (all inputs/outputs)

DATA SHEET

HIB I (Code 6002)

Headset Interface Box

Overview

HIB I is a Headset Interface Box serving as a reference interface in tests of headsets and the headset functionality of telephones. In various modes of operation, HIB I simulates the typical properties of headphones, microphones and telephones to the respective DUT.

HIB I fully integrates into the workflow of the multichannel hardware platform *labCORE* and the communication analysis system ACQUA, including automated configuration and operation.

HIB I is essential for assessing the quality and standard compliance of headsets and the headset functionality of telephones. It is especially suited for measurements according to ITU-T P.381.

Key Features

- Simulates headphones, headsets and the headset functionality of telephones
- Selectable load impedances for headphone simulation
- Loop/monitor mode for signal pass-through and monitoring
- Configuration and control via ACQUA
- Built-in rechargeable battery for optional isolation from noise/ ground loops
- Widely adjustable, fine-stepped input and output gains
- Supports measurements according to ITU-T P.381
- Wide range for microphone supply voltage
- Button push simulation "Play/Pause", "Volume Up/Down", "Start Speech Recognition" according to ITU-T P.381

Applications

- Automated measurements of headsets and telephones in conjunction with ACQUA and *labCORE*
- Measurements according to ITU-T P.381

Testing headsets

For testing headsets, HIB I simulates a reference telephone. The tested headset connects directly to the frontal 3.5 mm jack of HIB I. For headsets with a second microphone, HIB I offers a dedicated BNC socket on the front.

Loop/monitor mode

In loop/monitor mode, HIB I routes a connected headset directly to the connected telephone without any need for rewiring. Additionally, HIB I taps into the loop-through signals for simultaneous transmission to *labCORE*.

General requirements

- **ACQUA (Code 6810)**, Full-license or Compact (version 3.4 or later) including corresponding system components (see ACQUA data sheet)
- **labCORE (Code 7700)**, Modular multi-channel hardware platform (alternatively MFE VI.1)

For standalone operation without ACQUA and *labCORE*:

- RC-HIB I (Code 6983)



Backside of HIB I with connectors for hardware platform, ACQUA-PC and power supply

Options

For testing headsets

- **HMS II.3-33 (Code 1230.1)**, HEAD Measurement System, Basic Version with Ear Canal Coupler, Pinna Type 3.3 & Artificial Mouth
- **coreBUS (Code 7710)**, *labCORE* I/O Bus mainboard
- **coreOUT-Amp2 (Code 7720)**, *labCORE* power amplifier board
- **coreIN-Mic4 (Code 7730)**, Microphone input board

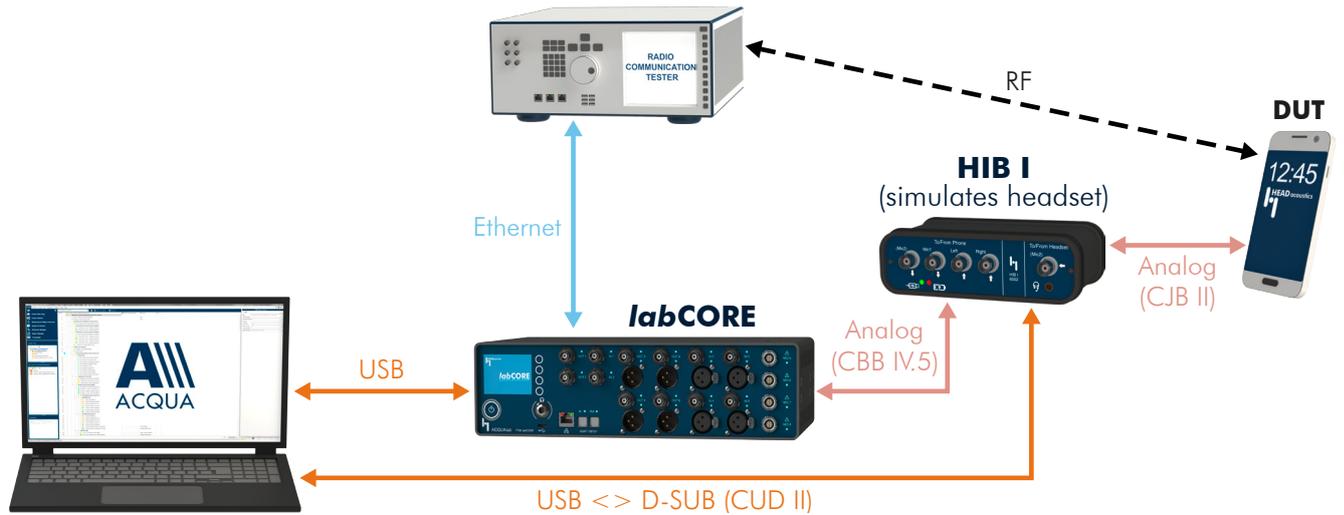
For testing telephones

- **coreIP (Code 7770)**, *labCORE* VoIP gateway software extension
- Depending on used codec
 - **coreIP-EVS (Code 7773)**, coreIP EVS codec software extension
 - **coreIP-AMR (Code 7772)**, *labCORE* AMR codec hardware extension
- **Radio tester** (not delivered by HEAD acoustics)

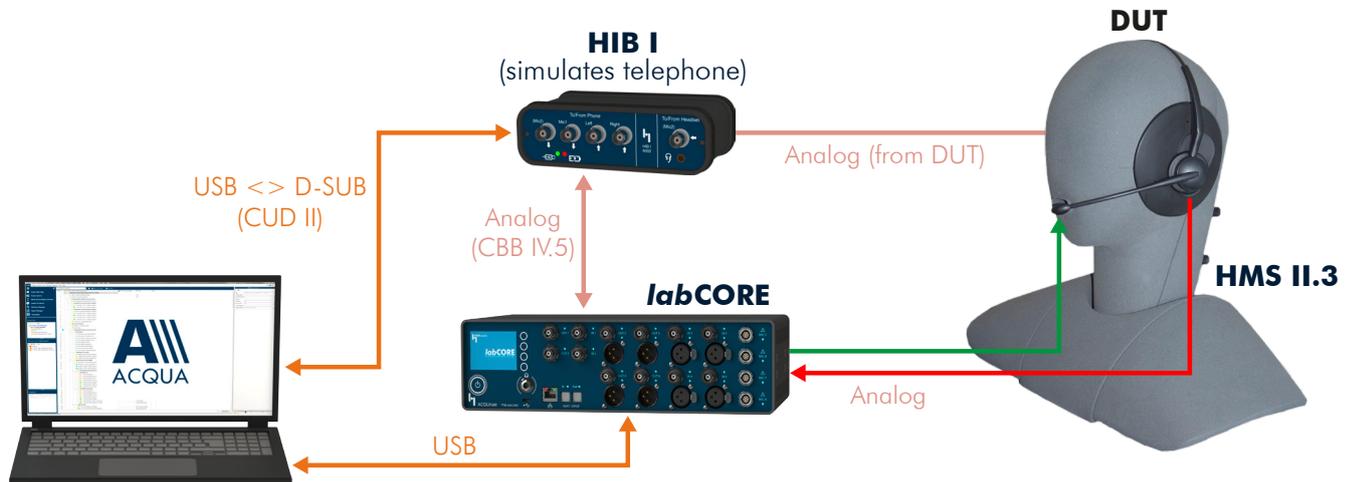
Technical Data

Technical Data			
General			
THD+N	< -91 dB (25 Hz - 20 kHz)		
Crosstalk	< -85 dB (at 1 kHz)		
GND connection	< 0.05 Ω (for all Inputs/Outputs)		
Input/Output-specific	To/From Phone	To/From Headset	To/From MFE
Input/Output gain	-	-	-95 dB ... +30 dB
Microphone supply voltage	-	0.6 V ... 3.8 V (at 2.2 kΩ)	-
Input Impedance	8 Ω, 16 Ω, 32 Ω, 10 kΩ, Off (> 100 kΩ)	> 100 kΩ	> 100 kΩ
Output Impedance	5 kΩ (Mic1 with simulated button press)	< 1 Ω	50 Ω
Recommended max. level (AC)	+6 dBV (2.0 V)	-16 dBV (160 mV)	+6 dBV (2.0 V)
Environmental conditions			
Operating temperature range	0° C – 45° C; 32° F – 113° F		
Storage temperature range	-20° C – 70° C; -4° F – 158° F		
Air humidity	20 % – 80 % (non-condensing environment)		
Other			
Battery	Li-ion, integrated, 1,950 mAh capacity		
Power consumption	Max. 1 W		
Dimensions (W x H x D)	147 x 35 x 78 mm		
Weight	420 g		

Configuration Examples



Setup with HIB I as a headset to test a mobile phone



Setup with HIB I as the headset part of a telephone to test a headset

Delivery items

- **HIB I (Code 6002)**, Headset Interface Box
- **CUD II (Code 6089)**, cable for direct connection to ACQUA-PC
- **CJB II (Code 6090)**, Adapter 3.5 mm 4-pin jack to BNC (connection mobile phone to HIB I)
- **CBB IV.5 (Code 6091)**, Cable 5x BNC to 5x BNC (connection HIB I to hardware platform)
- **Power supply**
- **Manual**