HEAD acoustics

DATA SHEET

Code 7735

coreIN-ICP4

IEPE/ICP® Input Board

OVERVIEW

*core*IN-ICP4

Code 7735

IEPE/ICP Input Board

*core*IN-ICP4 is a hardware extension board for *lab*CORE.

Equipped with *core*IN-ICP4, *lab*CORE becomes a high-performance audio analyzer. The board provides four high-precision low-noise analog input channels for prepolarized IEPE/ICP sensors, e.g., IEPE/ICP microphones. Each of the four inputs supports TEDS for data exchange with the connected sensor, BNC sockets ensure easy and secure connection.

*lab*CORE supports up to five *core*IN-ICP4 boards.

KEY FEATURES

Four high-precision and low-noise IEPE/ICP inputs

BNC interface

IEPE/ICP® power supply with extremely low self-noise

High resilience to ground noise

All inputs support TEDS

APPLICATIONS

IEPE/ICP microphones, e.g., the ear microphones of an artificial head

IEPE/ICP measurement microphones

Other IEPE/ICP sensors

DETAILS

DESCRIPTION

*core*IN-ICP4 extends the modular multi-channel *lab*CORE hardware platform with four high-precision and low-noise IEPE/ICP inputs. Equipped with the I/O bus mainboard *core*BUS, *lab*CORE supports up to five *core*IN-ICP4 boards at the rear slots 6 to 10.

Each input offers a high-precision IEPE/ICP constant current supply with extremely low self-noise, making *core*IN-ICP4 ideal for precise measurements with any IEPE/ICP sensor type. Its four BNC inputs support TEDS to exchange information on voltage and calibration values with the connected sensor. Input levels for each input are displayed on the LCD display of *lab*CORE.

All inputs of *core*IN-ICP4 are differential towards ground and therefore very resilient to ground noise.

OPTIONS

Alternative to *core*BUS if *lab*CORE shall be extended only with the *core*IN-ICP4 extension board:

- *core*BUS One (7711)
  - *lab*CORE I/O bus mainboard, supporting only one extension board

GENERAL REQUIREMENTS

Hardware

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

*core*BUS (Code 7710)
- *lab*CORE I/O bus mainboard

Software

One of the listed software applications

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

RC-labCORE (Code 6984)
- Remote configuration software for *lab*CORE

VoCAS (Code 7970)
- Voice Control Analysis System

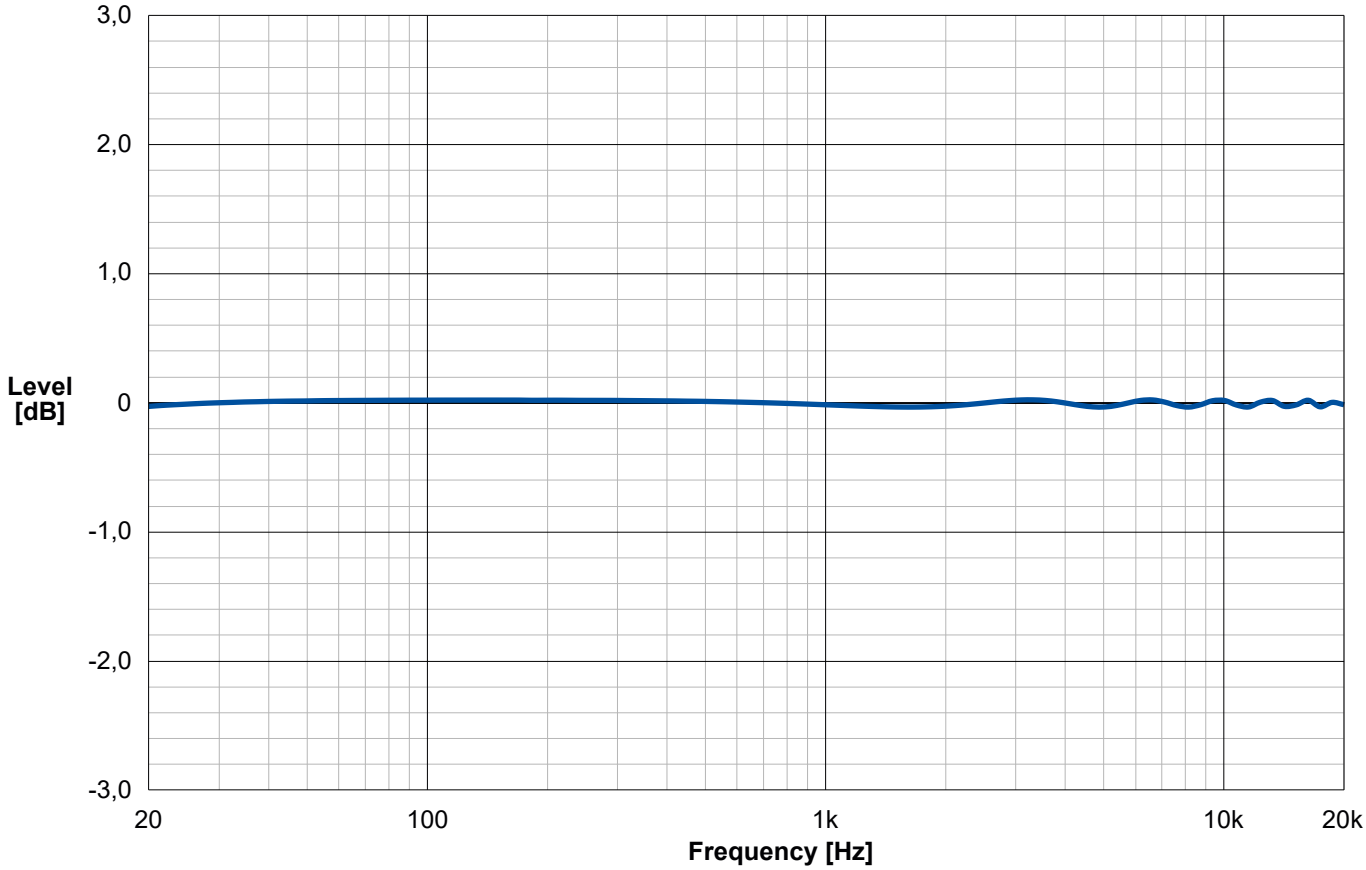
SCOPE OF DELIVERY

*core*IN-ICP4 (Code 7735)
- *lab*CORE input board, IEPE/ICP

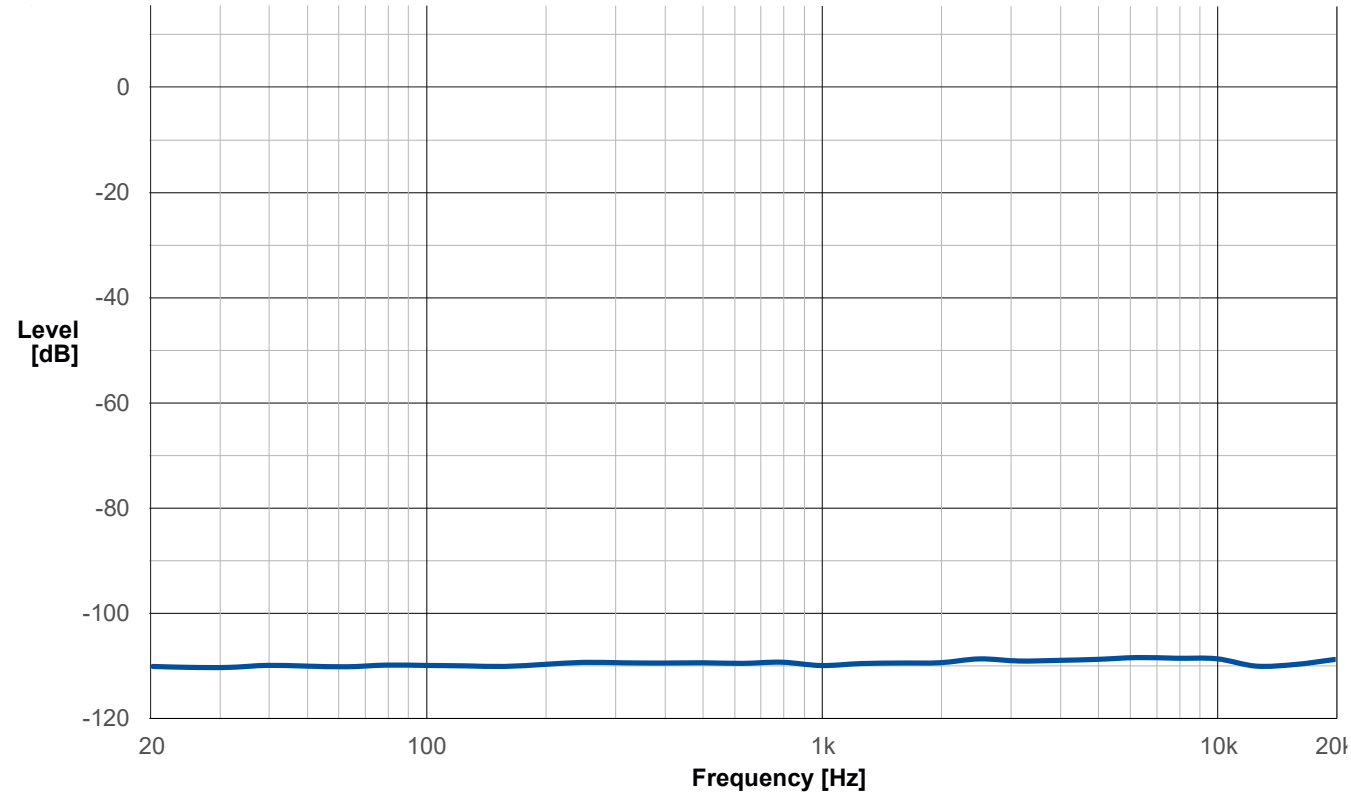
Initial equipping
- *core*IN-ICP4 is installed to *lab*CORE during production

Retrofitting
- Send in *lab*CORE to HEAD acoustics for installation

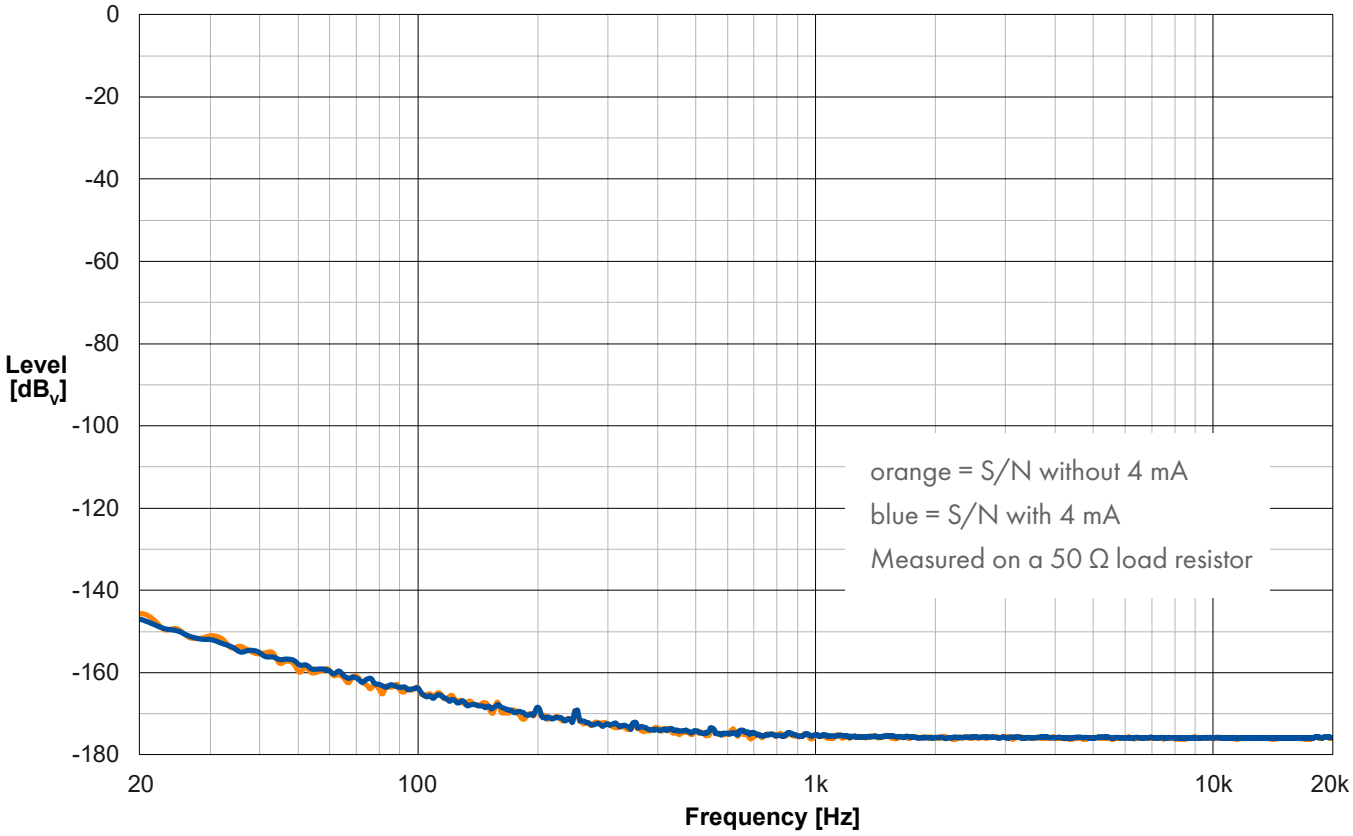
Typical frequency response



Typical total harmonic distortion plus noise (THD+N)



Typical self-noise of the *core*IN-ICP4 input ICP® constant current power supply



TECHNICAL DATA

Channels	4
Connection	BNC
Input range	-25 V–25 V
Input impedance	200 kΩ
Input range settings	-30 dBV–12 dBV (in 6 dBV steps)
Filters	› 1.6 Hz 1st order highpass › Switchable 20 Hz 2nd order highpass
IEPE/ICP supply	4 mA (±2.5%), max. 23 V, ultra low noise, switchable
TEDS	IEEE 1451.4 Class 1 MMI, shared signal wire
Level accuracy	±0.1 dB (1 kHz, 25 °C)
Flatness	› ±0.05 dB (48 kHz sampling, 20 Hz–20000 Hz) › ±0.07 dB (96 kHz sampling, 20 Hz–40000 Hz) › ±0.09 dB (192 kHz sampling, 20 Hz–80000 Hz)
S/N	113 dB (3.0 V_{RMS}, 10 Hz - 20 kHz)
THD + N	› < -108 dB (3.0 V_{RMS}, 100 Hz) › < -110 dB (3.0 V_{RMS}, 1000 Hz) › < -109 dB (3.0 V_{RMS}, 10000 Hz)
Crosstalk	< -126 dB
Digital resolution	32 Bit
Sampling rates	48 kHz, 96 kHz, 192 kHz
Typical power consumption	4.0 W

IEPE denotes an industry standard for piezoelectric sensors with integrated impedance-converting electronics. Comparable technologies are marketed by individual manufacturers under proprietary names such as ICP, CCLD, IsoTron, or DeltaTron. In this document, the term IEPE/ICP is used as a generic designation representing the corresponding manufacturer-specific product and trademark names.

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