

Rear panel of labCORE with coreIN-ICP4 in slot 7

Description

coreIN-ICP4 extends the modular multi-channel ACQUA*lab* hardware platform labCORE with four high-precision and low-noise ICP[®] inputs. Equipped with the I/O bus mainboard coreBUS, labCORE supports up to five coreIN-ICP4 boards at the rear slots 6 to 10¹.

Each input offers a high-precision ICP[®] constant current supply with ultra low self-noise, making coreIN-ICP4 ideal for precision measurements with any 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 labCORE. All inputs of coreIN-ICP4 are differential towards ground (GND-sensing technology) and therefore are very resilient to ground noise.

General requirements

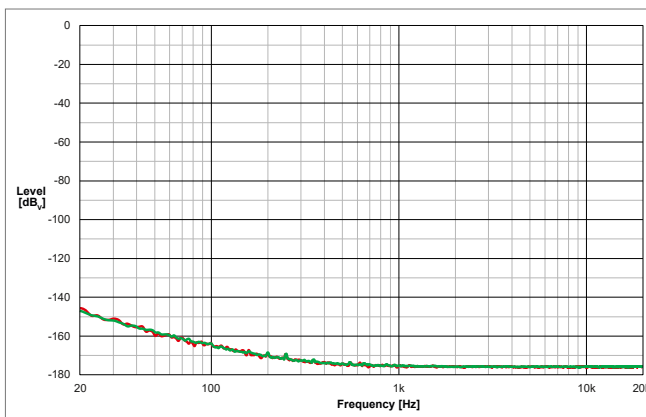
Hardware

- **labCORE (Code 7700)**, Modular multi-channel hardware platform
- **coreBUS (Code 7710)**, labCORE I/O bus mainboard

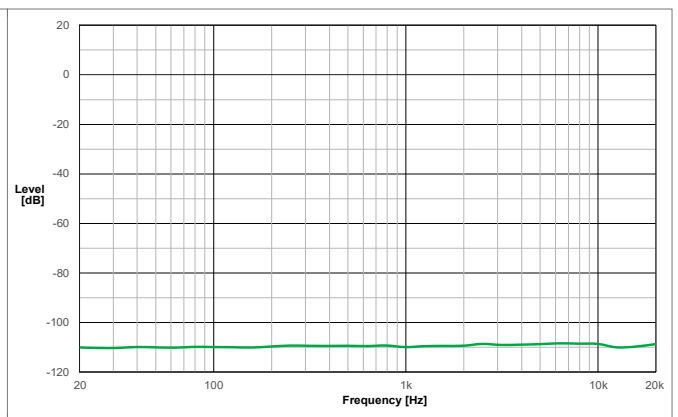
Software

At least one of the listed software applications is required.

- **ACQUA (Code 6810)**, ACQUA Standard: Basic Analysis Software, full-license Version
- **RC-labCORE (Code 6984)**, Remote configuration software for labCORE
- **VoCAS (Code 6985)**, Voice Control Analysis System (only control settings for utilization of VoCAS)



Typical self-noise² of the coreIN-ICP4 input ICP[®] constant current power supply (red = inactive, green = active)



Typical total harmonic distortion (THD+N) of the coreIN-ICP4 inputs

DATA SHEET

coreIN-ICP4 (Code 7735)

labCORE input board, ICP[®]

Overview

coreIN-ICP4 is a hardware extension board for labCORE.

Equipped with coreIN-ICP4, labCORE becomes a high-performance audio analyzer. The board provides four high-precision low-noise analog input channels for pre-polarized ICP[®] sensors, e.g. ICP[®] microphones. Each of the four inputs supports TEDS for data exchange with the connected sensor, BNC sockets ensure easy and secure connection.

Key features of coreIN-ICP4 are extremely low self-noise of the integrated constant current supply and GND-sensing for high resilience to ground noise.

labCORE supports up to five coreIN-ICP4 boards.

Key Features

- Provides four high-precision and low-noise ICP[®] inputs
- 4 × BNC connector
- ICP[®] power supply with extremely low self-noise
- GND-sensing technology for high resilience to ground noise
- All inputs support TEDS
- Up to 5 coreIN-ICP4 per labCORE

Applications

- High performance inputs for...
 - ICP[®] microphones, e.g. the ear microphones of an artificial head
 - ICP[®] measurement microphones
 - Other ICP[®] sensors

Delivery Items

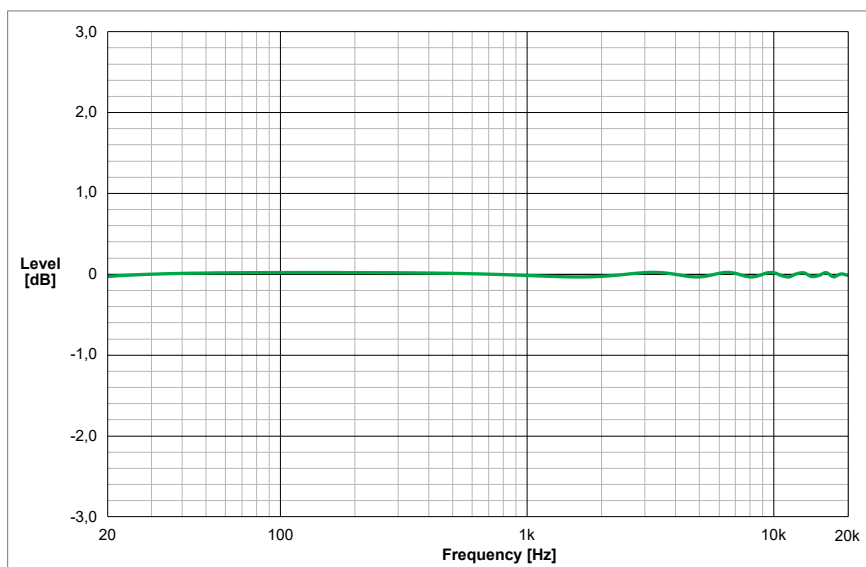
- **coreIN-ICP4 (Code 7735),**

labCORE input board, ICP®

- **Initial equipping:**

HEAD acoustics installs coreIN-ICP4 to labCORE during production

- **Retrofitting:** Send in labCORE to HEAD acoustics for installation



Typical frequency response of the coreIN-ICP4 inputs

Technical Data coreIN-ICP4	
Channels	4
Connection	BNC
Input range	-25 V ... +25 V
Input impedance	200 k Ω
Input range settings	-30 dBV ... +12 dBV (in 6 dBV steps)
Filters	1.6 Hz 1 st order high-pass, switchable 20 Hz 2 nd order high-pass
ICP supply	4 mA (± 2.5 %), max. 23 V, ultralow 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 – 20 kHz), ± 0.07 dB (96 kHz sampling, 20 Hz – 40 kHz), ± 0.09 dB (192 kHz sampling, 20 Hz – 80 kHz)
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} , 1 kHz), < -109 dB (3.0 V _{RMS} , 10 kHz)
Crosstalk	< -126 dB
Digital resolution	32 Bit
Sampling rates	48 kHz, 96 kHz, 192 kHz
Power consumption	Typ. 4.0 W

1) The amplifier board coreOUT-Amp2 (Code 7720) can only be installed in slots 9 and/or 10 of labCORE. Alternatively, these slots can be equipped with other boards, e.g. coreOUT-ICP4, at the expense of slots available for coreOUT-Amp2.

2) Measured on a 50 Ω load resistor

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