



Description

HPO serves as the interface between arbitrary analog extension lines/local loops and *labCORE* to allow measurements. It transfers the signal coming from the extension line to *labCORE* and sends signals received from *labCORE* via the a/b line to the remote station.

HPO comes with an RJ11 socket (as used by telephones) and can thus be connected to a TAE socket with a standard adapter cable. In addition, the a/b line is fed through the device via a 3-pin TF socket.

Internally, HPO can be terminated with 600 Ω , 900 Ω and Zr (cf. TBR 21, approx. 1014 Ω + capacity). The connection of an external impedance is possible via the dedicated 3-pin TF socket 'Z Line'. HPO connects to the PC via USB.

The integrated holding circuit with a DC resistance of 300 Ω enables the remote station to recognize whether a call is arriving or established.

An external holding resistance can be connected via the 3-pin TF socket 'R Hold'. To avoid short-circuiting, an internal 100 Ω resistance is hardwired into this loop.

HPO is controlled by the communication quality analysis system ACQUA (set resistance, on hook, off hook etc.) or via the LCD menu (button-controlled). To establish a call, the call number is generated by ACQUA and sent by DTMF after off hook.

A ring detection signals an incoming call in the display. ACQUA can set the device to a trigger mode so that HPO automatically accepts an incoming call.

To test the setup, HPO has a switchable loopback mode.

General Requirements

Software

- **ACQUA (Code 6810 etc.)**, Advanced Communication Analysis System

Hardware

- **labCORE (Code 7700)**, Modular multi-channel hardware platform

Options

- **RMB IV.1 (Code 9841)**, 19" rack mount bracket (1 rack unit) for BEQ, PEQ, MFE (2 pcs.)

Delivery items

- **HPO (Code 6473)**, HEAD POTS Adapter
- **Power supply**, external, 110 - 250 V AC \rightarrow 15 V DC
- **PCC I.9x (Code 997x)**, Mains cable (to local specification)
- 1 \times **CUSB II.15 (Code 5478-15)**, USB 2.0 cable, with ferrite, 1.5 m
- 2 \times **BNC cable**
- **Carrying case**
- **Manual** (Hardcopy)

DATA SHEET

HPO (Code 6473)

HEAD POTS Adapter

Overview

HPO is a lightweight and compact hardware platform for testing the POTS (Plain Old Telephone System) functionality of IP-based home gateways, DSL- and cable modems as well as other POTS devices.

HPO is equipped with Telecom and USB interfaces and offers a calibrated access to analog networks as well as on hook/off hook control.

In conjunction with ACQUA and *labCORE*, HPO can perform automated measurements according to international standards, HEAD acoustics standards or user-defined parameters.

Key Features

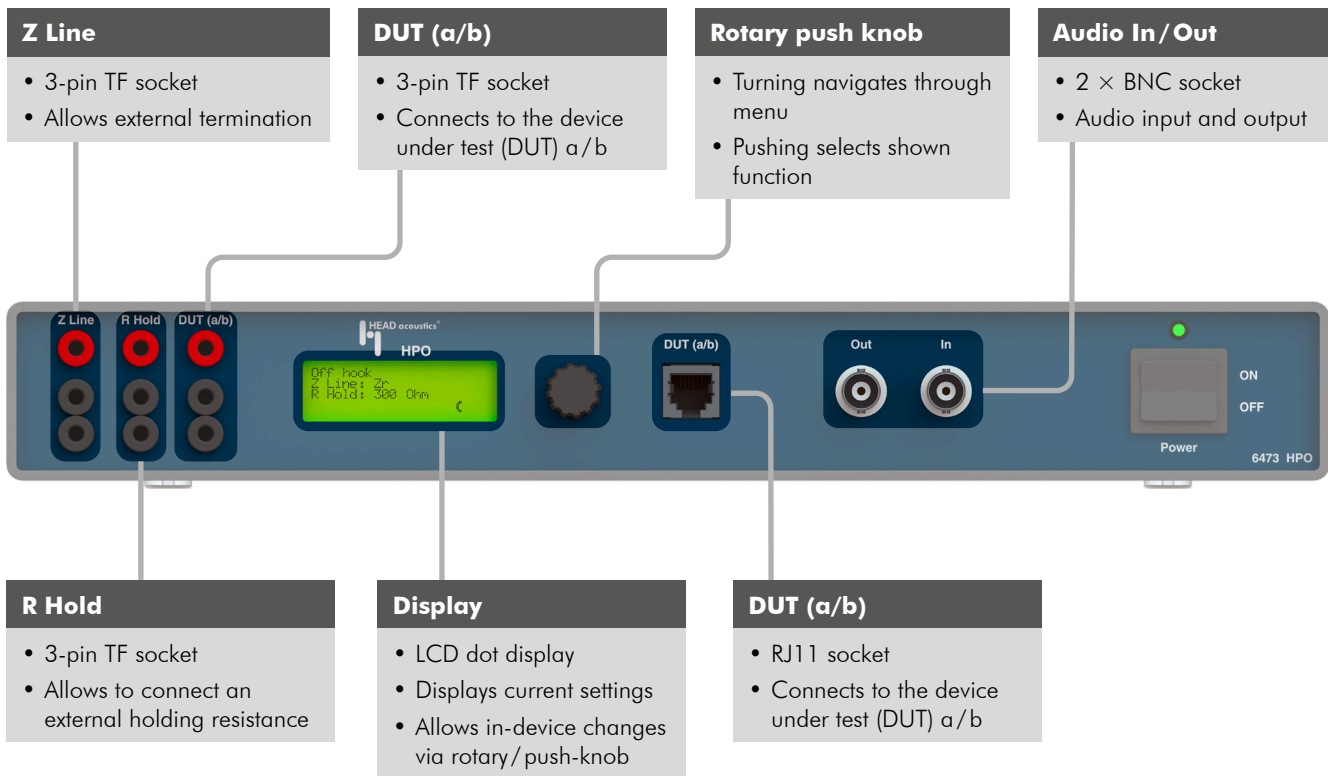
- Hardware interface mediating between POTS devices and measurement software & hardware
- Standardized RJ11 socket for easy connection to device under test
- Allows termination with various integrated impedances & external impedances
- Integrated holding circuit to recognize call state, connection of external holding resistance is possible
- Control via ACQUA or via display and rotary push knob

Applications

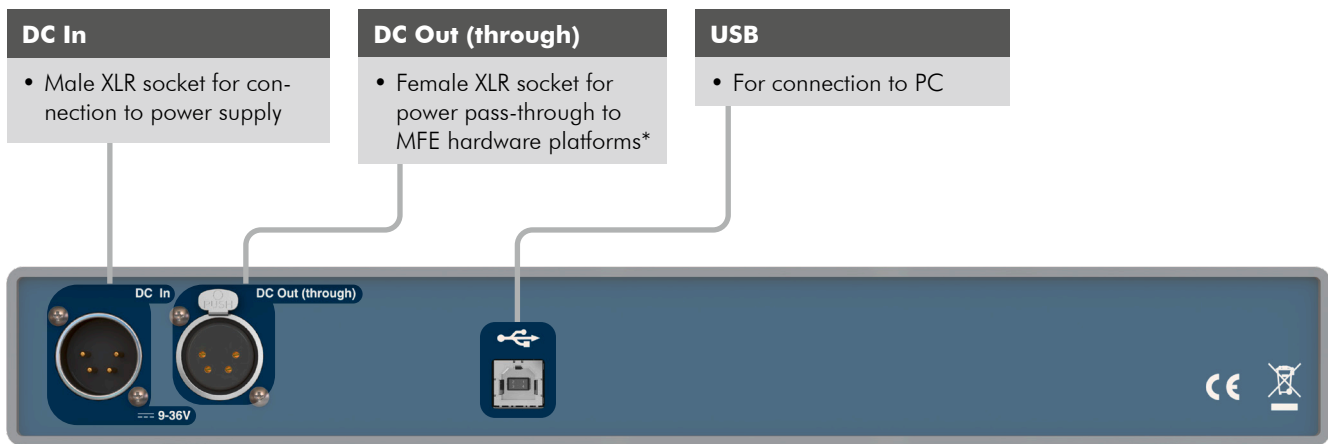
- Measurements of POTS devices such as:
 - Home gateways (HGW)
 - DSL/cable modems
 - Private branch exchange (PBX)

Overview of HPO connectors and features

Front



Rear



*) Cannot be used for supplying power to labCORE.

Technical Data				
General				
Operation	Remote control via ACQUA			
Inputs / Outputs front				
	Input(s)	Output(s)	Connector type(s)	Comment
Z Line	1 × I/O		3-pin TF socket	-
R Hold	1 × I/O		3-pin TF socket	-
DUT (a/b)	1 × I/O		3-pin TF socket	-
DUT (a/b)	1 × I/O		RJ11	-
Inputs / Outputs rear				
Audio In/Out	1 ×	1 ×	BNC	Galvanically isolated, -10 dB _U typical, 0 dB _U max.
DC In	1 ×	-	XLR male	For connection to power supply
DC Out (through)	-	1 ×	XLR female	For power pass-through to MFE hardware platforms (not for use with labCORE)
USB	1 × I/O		USB Type-B	-
Electric properties				
Flatness Audio In → DUT (a/b)	±0.5 dB (200 Hz – 4 kHz), ±1.0 dB (4 kHz – 8 kHz),			
Flatness DUT (a/b) → Audio Out	±0.5 dB (200 Hz – 4 kHz), ±1.0 dB (4 kHz – 8 kHz),			
Return Loss Z _r	> 10 dB (200 Hz – 300 Hz), > 15 dB (300 Hz – 500 Hz), > 20 dB (500 Hz – 8 kHz),			
Return Loss 600 Ω	> 18 dB (200 Hz – 500 Hz), > 22 dB (500 Hz – 8 kHz)			
Environmental conditions				
Operating temperature range	0° C – 50° C; 32° F – 122° F			
Storage temperature range	-20° C – 70° C; -4° F – 158° F			
Air humidity	20 % – 80 % (non-condensing environment)			
Other				
Power supply adapter	110 V – 250 V AC → 15 V DC, 60 W			
Power consumption	Typ. 8 W			
Dimensions (W x H x D)	327 x 44 x 230 mm			
Weight	Approx. 2.0 kg			