HEAD acoustics

DATA SHEET

APPLICATION EXAMPLE INCLUDED

Code 1430

HHP III.2

HEAD Handset Positioner

OVERVIEW

HHP III.2

Code 1430

HEAD Handset Positioner

HHP III.2 is a manually operated handset positioner. The assembly consists of a mounting element, a clamping device holding a telephone handset, and a mechanism to position the handset to certain positions. It forms a complete assembly with an artificial head of the HMS II Series. HHP III.2 reaches to standardized and recommended test positions for handsets according to Recommendation ITU-T P.64 or IEEE 269. Further, the application force applied by the handset to the pinna can be set accurately by means of the included force transducer and the provided display unit.

KEY FEATURES

Positioning of handsets at the ear of an artificial head of the HMS II Series

Positioning the handset in positions according to the coordinate system from Recommendation ITU-T P.64

Automatic documentation in ACQUA of the application force applied by the handset to the artificial ear

APPLICATIONS

Suitable for use with artificial heads HMS II.3, HMS II.3 LN, HMS II.3 LN HEC, HMS II.3 ViBRIDGE, HMS II.4, and HMS II.5

Reproducible voice quality testing of:

- Smartphones (with and without display speaker)
- Cordless phones
- Communication devices with handset
- Tablets

Analysis of positional robustness

Effect of user-behavior on voice quality for near-end signal transmission and far-end signal transmission of the device under test

DETAILS

HHP III.2 is a handset positioner for moving telephone handsets in specified positions at the ear of an artificial head from the HMS II Series. It has a jig to fix telephone handsets. Utilizing the adjusting screws, it positions telephone handsets at various positions close to the pinna or touching the pinna. HHP III.2 supports standard test positions (STP) according to Recommendation ITU-T P.64 and recommended test positions (RTP) specified by IEEE 269 and Recommendation ITU-T P.64. Further, it enables adjusting contact pressure from the handset to the pinna of the artificial head.

DESCRIPTION

Application

HHP III.2 has to be mounted on an artificial head from the HMS II Series. Users can position the fixed handset in a wide range of standard or user-defined positions close to the pinna or touching the pinna. Furthermore, the application force applied by the handset to the pinna is adjustable. The positioner is compatible with artificial ears type 3.3, type 3.4, and type 4.4 from Recommendation ITU-T P.57.

Mounting Element Including Force Transducer

The mounting element has two functions. It has a frame including four knurled screws for assembling it to the neck bolts of an artificial hear from the HMS II Series. A crank handle with a slide mechanism moves the handset towards or away from the artificial ear. The included force transducer starts sensing the applied pressure when the handset presses against the artificial ear. The measured application force can be indicated by DU HHP III.2 and transmitted to a connected ACQUA computer.

Clamping Device

The clamping device holds the handset during measurements. It provides adjustable screws and clamps for attaching any handset device within the dimensional limits. There are two clamping devices available. The regular one (CDM-R) for common handsets and a wide clamping device (CDM-W) for wider handsets and tablets.

Handset Positioning

The positioning jig is assembled to the clamping device and helps positioning the loudspeaker of the handset at the ear cap reference point (ECRP). The jig has a reticle and as scale for this purpose.

Display Unit – DU HHP III.2

DU HHP III.2 connects to the application force transducer within HHP III.2. It indicates the force value (N, newton) from the force transducer and supplies the force transducer with power. Furthermore, DU HHP III.2 may connect to the ACQUA computer via RS-485 for transmitting the application force value to ACQUA for documentation.

POSITIONING SYSTEM

The positioning system is assembled to the mounting element. It has three joints to turn the handset around the X_e, Y_e, and Z_e axes.

CLAMPING DEVICE (CDM-R)

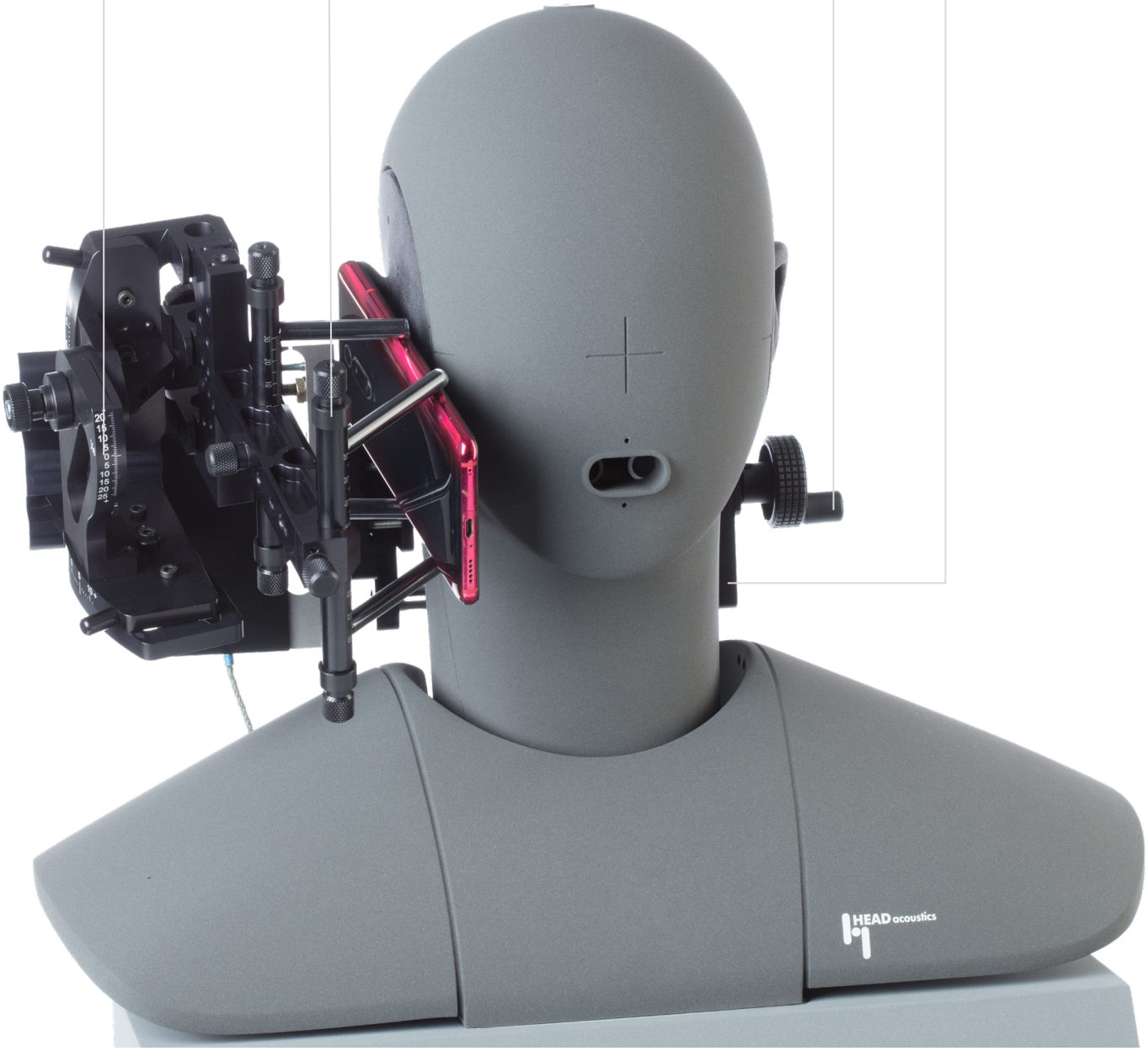
Holds the handset. Clamping jaws and fixation screws ensure a secure fixation of the handset.

CRANK HANDLE

Turning the crank handle moves the assembly of mounting element and clamping device laterally to move the handset towards or away from the artificial ear.

MOUNTING ELEMENT

The mounting element has a frame including four knurled screws for the assembly to the neck bolts of HMS II Series. It holds the positioning system and contains the force transducer.



TECHNICAL DATA

Electrical (DU HHP III.2)

Interfaces	RS-485 for power supply/data transfer USB-C® for power supply LEMO 4-pin for connection to application force transducer
Supply voltage	24 V (RS-485) 5 V (USB connection) 4.5 V (Battery supply)
Power consumption	max. 7.2 W at 24 V max. 1.5 W at 5 V max. 1.5 W at 4.5 V
Display time out	max. 2 minutes

Mechanical

Application force	up to 20 N with a resolution of 0.1 N
Weight of handset	max. 600 g
Dimensions of handset with CDM-R with CDM-W	(length, width, depth) > 50 mm, 30 – 93 mm, < 45 mm > 50 mm, 81 – 200 mm, < 45 mm
Maximum positioning range per axis (coordinate system as defined by Recommendation ITU-T P.64)	-20° < A < 25° -10° < B < 10° -5° < C < 5°

Environmental Conditions

Operating temperature	15 °C – 35 °C, 59 °F – 95 °F
Storage temperature	-20 °C – 70 °C, -4 °F – 158 °F
Air humidity	20% – 80% relative humidity, non-condensing

Dimensions

Weight	approx. 1.6 kg

OPTIONS

CDM-W (Code 1408)
› Clamping device MotoMount , wide, complete

SCOPE OF DELIVERY

HHP III.2 (Code 1430)
› HEAD Handset Positioner
DU HHP III.2 (Code 1431)
› Display unit for HHP III.2 (suitable for data transmission)
CDM-R (Code 1407)
› Clamping Device MotoMount, regular
Pos-CDM-R (Code 1638.11)
› ECRP positioning jig
HCC-HHP III.2 (Code 1634.3)
› Carrying case for HHP III.2
CUD IV (Code 6113)
› Adapter USB + BNC <> D-Sub 9-pin, RS-485
CAB II.10 (Code 6093-10)
› Cable D-Sub 9-pin, 10 m
Mounting element including force transducer
Positioning system
Fixation screw for positioning system
ERP verification disc
2 x rubber band
Manual

GENERAL REQUIREMENTS

Hardware

One of the following Head Measurement Systems:

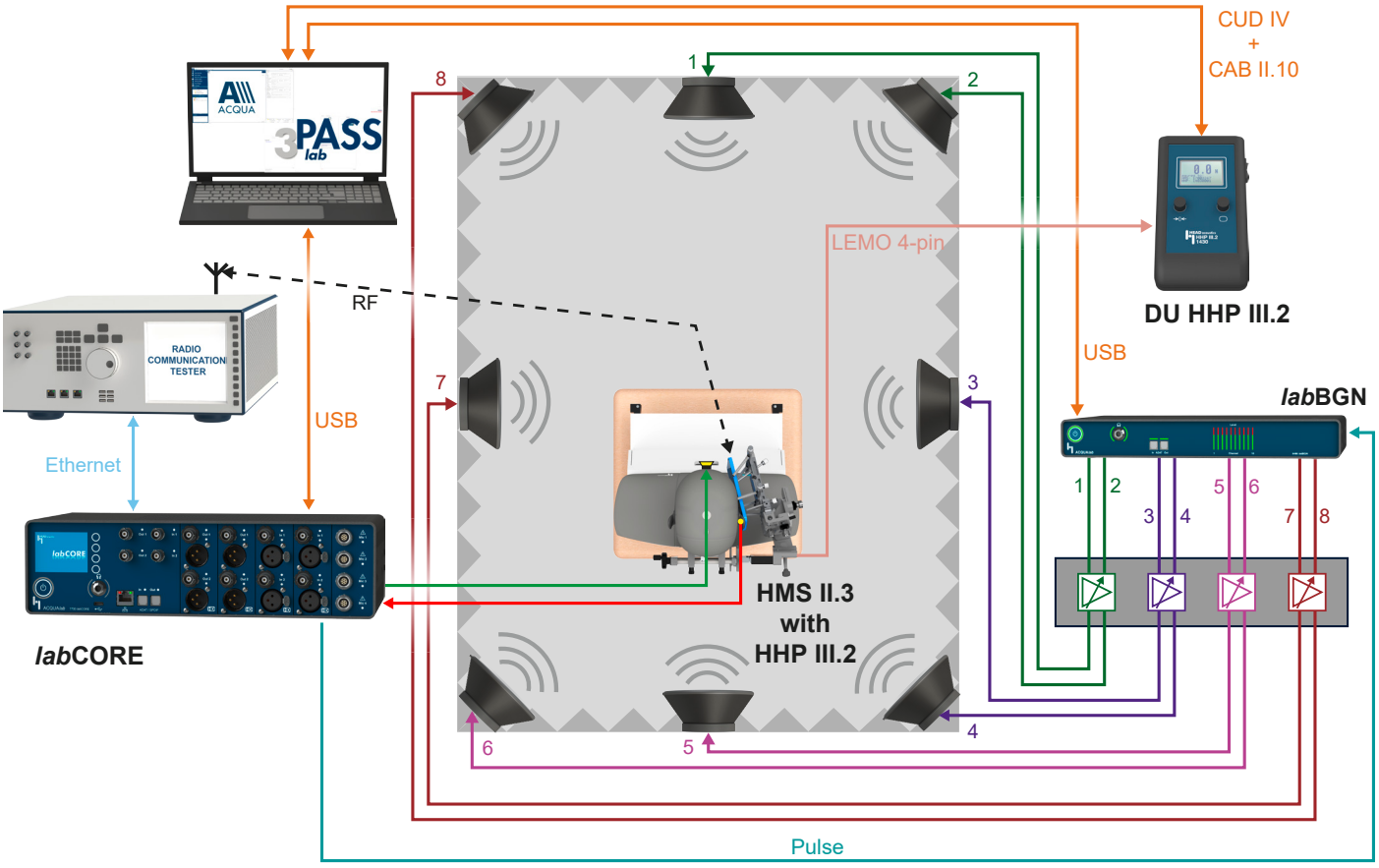
HMS II.3 (Code 1703)
› Head Measurement System, basic version with right ear simulator, 3.3 pinna, and artificial mouth
HMS II.3 LN (Code 1703.1)
› Head Measurement System, low-noise version with right ear simulator, 3.3 pinna, and artificial mouth
HMS II.3 LN HEC (Code 1703.2)
› Head Measurement System, low-noise version with human-like ear canal simulator right, 4.4 pinna, and artificial mouth
HMS II.3 ViBRIDGE (Code 1703.3)
› Head Measurement System, low-noise, with human-like ViBRIDGE ear simulators (left and right), 4.4 pinna, and artificial mouth
HMS II.4 (Code 1704)
› Head Measurement System, basic version with right ear simulator, 3.3 pinna
HMS II.5 (Code 1705)
› Head Measurement System, basic version with 3.3 pinna and artificial mouth

IN PRACTICE

APPLICATION EXAMPLE

Smartphone Measurements

Measurement configuration including HHP III.2 holding a smartphone. HHP III.2 is operated manually and holds the smartphone (device under test) at various positions touching the pinna or close to the pinna of HMS II.3. The smartphone connects via the applied network to a radio tester. *lab*CORE transmits signals to HMS II.3 for playback and receives signals from HMS II.3 for recording. ACQUA generates the signals for playback and analyzes the recorded signals. If the smartphone slightly presses against the pinna, ACQUA receives the current application force from DU HHP III.2 for documentation. Further, DU HHP III.2 supports setting the desired application force by indicating the current value on its display. 3PASS *lab* plays back background noise to assess speech signal processing of the smartphone under real-life conditions.



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Contact Information

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