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DATA SHEET

BSU (Code 1508)

Binaural Sensor Unit for aurally accurate recordings

Overview

BSU is the perfect solution for soundscape measurements and environmental measurements. The artificial head can be powered by a mobile device, and additionally the power supply can be assisted by a powerbank. Users are able to start their measurements immediately, because the ID equalization recommended for soundscapes is fixed.

In combination with the HEAD B2U app and a smartphone or tablet (Android™ or iOS/iPadOS) connected via USB, even inexperienced users perform aurally accurate measurements quickly and safely.

In addition, BSU may also be controlled via a computer or the mobile frontends SQobold and SQuadriga III.

The dimensions of the artificial head meet the requirements of the soundscape standard ISO 12913-2, which means that BSU guarantees not only aurally accurate and correctly equalized recordings, but also soundscape measurements in accordance with the standard.

Features

- Artificial head for binaural, aurally accurate, and equalized soundscape measurements according to ISO 12913-2
- Power supply via USB, e.g. using a power bank
- Low power consumption
- Fixed ID (independent of direction) equalization for recordings
- Simple operation via smartphone in combination with the HEAD B2U app for a trouble-free use
- Direct connection of headphones from HEAD acoustics for a correctly equalized and aurally accurate playback
- 3/8" tripod thread (camlock) on the bottom of the head for a secure tripod mounting
- Threaded positioning plate on the top of the head for mounting, e.g. a camera

Controlling

- Free HEAD B2U-App for for playback or recording of 2-channel measurements
  - via Smartphone (Android/iOS)
  - via Tablet (Android/iOS/ iPadOS)
- Recorder software of ArtemiS SUITE - via Computer (Windows)
- Direct connection to mobile frontends (2-channel recordings, video, and GPS are available)
  - SQobold
  - SQuadriga III

Analysing and processing of measurements according to ISO 12913-2

HEADscape
Modular software for the uncomplicated analysing and processing of soundscape procedures according to ISO 12913-2

BSU is a reproduction of all acoustically relevant parts of the human outer ear, head, and shoulder, allowing aurally accurate binaural recordings of sound events including all characteristics of human hearing perception, in particular spatial hearing.

HEAD B2U app:

Recording and playback via smartphone / tablet

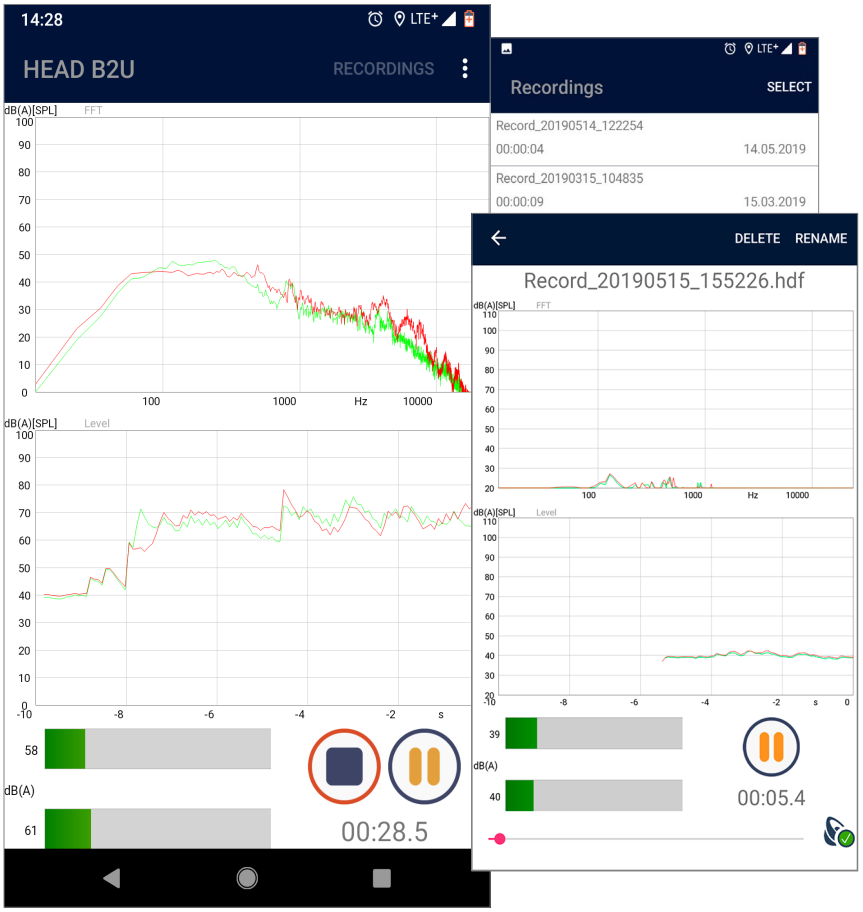
Operating the HEAD B2U app is optimized for mobile and easy use, so that users perform their measurements according to ISO 12913-2 quickly and safely.

There is no need to adjust settings, and in order to start a measurement just a tap on the record button is required. Without changing the interface, users observe their measurements by means of an averaged FFT analysis, a time signal diagram (level vs. time), and a bargraph.

For playback, measurements can be selected from a clearly arranged list. The player displays the averaged spectrum (FFT diagram) and the level of the entire recording (time signal diagram).

While playing back, an icon indicates if playback level and recording level match. If needed, adjustments can be made with ease.

The HEAD B2U app can be installed from the Google Play™ store / App Store®, via the HEAD Updater, or from the HEAD acoustics Download Center (Android).



The HEAD B2U allows recordings to be started with a single tap on the recording button (image on the left). The Player displays an icon (right on the bottom of the right image) to indicate if the playback level corresponds to the recording level.

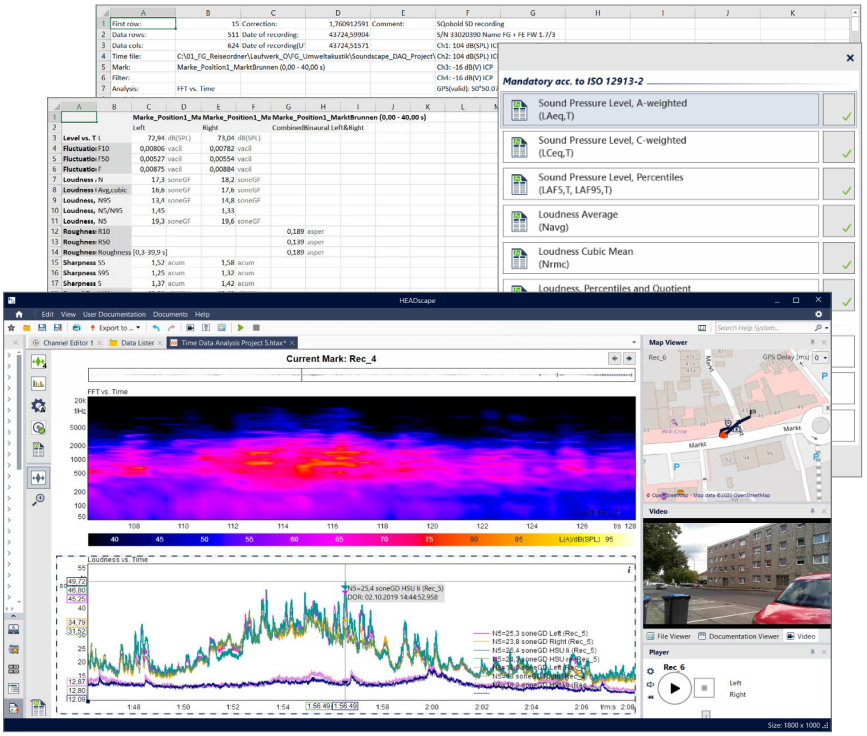
Software for ISO-compliant analysis and processing of soundscape measurements

HEADscape (Code 5600)

The HEADscape software allows even inexperienced users to easily process recordings of an acoustic environment to meet analysis and reporting requirements according to ISO 12913-2.

This includes all required tasks, e.g. the description of relevant parameters (circumstances of the measurements, calculation of acoustic and psychoacoustic indicators, etc.), documentation, aurally-accurate playback, and preparation of data for experimental soundscape applications in the laboratory.

The user interface is optimized for easy operation, so that users are able to analyze the measurements quickly and easily.



The core of the modular HEADscape software is the Time Data Analysis Project, which allows measurements to be classified interactively and to export the results according to the ISO standard 12913-2 via an easy to use and tidy interface.

Scope of supply

- BSU (Code 1508)
  Binaural Sensor Unit for aurally accurate recordings
- HWS (Code 1960)
  Wind screen for outdoor recordings
- CUSB VII.2 (Code 9895-2)
  Cable USB, type B to type C, 2 m
- CUSB II.1.5 (Code 5478-1.5)
  Cable USB type B to type A, 1.5 m
- CUSB V (Code 9868)
  Adapter USB, type C to micro USB
- Screwdriver (for BSU ears)
- Manual

Accessories

- HMT II (Code 1962)
  Height-adjustable tripod
- HSM V (Code 1520)
  Seat Mount Adapter
- HSC IV-V1 (Code 1524-V1)
  Carrying case
- H0162
  Adapter Apple Lightning to USB-A

Mobile Frontends

When BSU is connected, only 2-channel recordings, video, and GPS are available.

- SQuadriga III (Code 3324)
  Mobile recording and playback system with sound level meter function - as a stand-alone system or USB frontend
- SQobold (Code 3302)
  Mobile 4-channel recording and playback system

Headphones

- HD IV.1 (Code 2380)
  Dynamic, open headphone
- HD IV.2 (Code 2481)
  Dynamic, open headphone

Software

- HEADscape (Code 5600)
  Modular software for processing soundscape procedures according to ISO 12913-2
- ArtemiS SUITE Data Acquisition Module (Code 5004)
  - Required:
    ArtemiS SUITE Basic Framework (Code 5000)

Technical Data

General

Number of channels:	2
Interfaces:	2 x USB-connector, type B 1 x 6.3 mm headphone socket
Resolution:	Up to 24 Bit ΔΣ audio A/D and D/A converter
Input voltage:	5 V DC (±5 %)
Power consumption USB:	500 mA (max.); operation as bus-powered device or as self-powered device with external power supply of 5 V
Sampling frequencies (digital):	44.1; 48 kHz
Equalization Recording: Playback:	 ID (independent of direction) ID, FF (free field), DF (diffuse field), USER, LIN (no equalization)
Thread mounting platform:	M6
Tripod socket:	UNC 3/8“, Camlock (series 911F)
Dimensions:	450 mm x 400 mm x 180 mm (WxHxD)
Weight:	4.3 kg
Operating temperature:	-10 °C to +60 °C (0 to 90 % relative humidity, non-condensing)
Storage temperature:	-20 °C to +70 °C

Microphones

Type of microphones:	2 x ICP microphones (permanently polarized)
Frequency response:	22 to 20000 Hz (± 3 dB)
Sound pressure level (max.):	120 dB_{SPL}
Inherent noise, incl. impedance converter (acoust.):	27 $dB(A)_{SPL}$