HEAD acoustics

DATA SHEET

Code 3705.x

*lab*SAR I

Rugged, high-performance industrial PC with stand-alone recording (SAR) software and accessories for autonomous and remote controlled measurements with HEAD*lab* systems

OVERVIEW

*lab*SAR I

Code 3705.x

*lab*SAR I enables HEAD*lab* systems to be used stand-alone or remote-controlled even for very long measurements.

Basis of *lab*SAR I is the rugged and noiseless industrial PC *lab*SAR I.1. It is quickly and securely connected with one or more *lab*CTRL II.1 controllers as well as with the connected input modules. Together they form a HEAD*lab* system that automatically performs stand-alone measurements or can manually be remote-controlled via smartphone, tablet, or PC.

Depending on the number of channels and the storage capacity, *lab*SAR I.1 enables even longer continuous measurements in stand-alone operation and without further interaction for test benches, automated quality tests, long driving or flight tests, long-term monitoring for acoustic environmental protection tasks, etc.

KEY FEATURES

*lab*SAR I.1

- Protected Windows IoT operating system
- Connection with one or more *lab*CTRL II.1 controllers and input modules via LAN and USB
- Sample-accurate synchronization of several controllers via HEAD*link* or PTP
- Synchronization of several HEAD*lab* systems via navigation satellite systems
- Start of stand-alone measurements, e.g., using triggers or by switching on the power supply
- Wireless manual remote control via WLAN with smartphone, tablet, or PC

Factory-installed web interface (SAR software)

- Operation with smartphone, tablet, or PC via a web interface using a network
- User-friendly recorder
- Presets for different measurement tasks
- Import of Sensor Libraries, triggers, Documentation Templates, etc. from ArtemiS SUITE
- Multi-client applications, e.g., for back-ups

Optional (accessories)

- LAN switch for PTP synchronization
- External SSD as additional storage device

APPLICATIONS

Stand-alone and remote controlled measurements of various quantities, e.g., for

- test benches
- quality testings
- long-term monitorings

DETAILS

MEASUREMENTS

*lab*SAR I.1 is equipped with the factory-installed, protected operating system Windows 10 IoT. Via USB, up to four *lab*CTRL II.1 can be connected – an additional synchronization via HEAD*link* is required. Via LAN, the use of more than four controllers is possible, depending on the capacity of the network. *lab*CTRL II.1 also allows mixed configurations with USB and LAN. Each controller can be equipped with up to ten input modules.

After power-on, *lab*SAR I.1 automatically establishes the connections to the controllers and identifies all input modules (Auto Connect).

Stand-alone

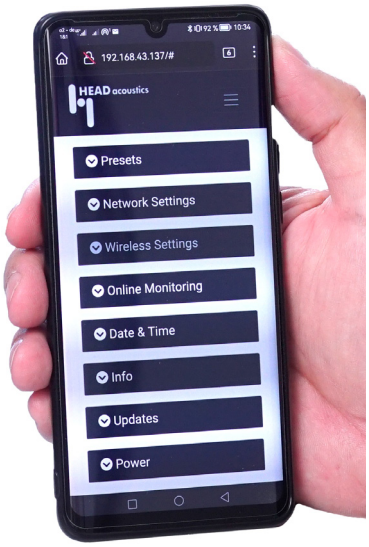
Users can perform stand-alone measurements very easily using triggers, which are configured with ArtemiS SUITE.

Starting a measurement via the power supply is an alternative option. As soon as the power is turned on, *lab*SARI.1 automatically boots the IoT operating system and starts a measurement. When the power supply is switched off, the operating system safely shuts down.

Even if a recording is interrupted, *lab*SAR I.1 can independently begin a new measurement.

Remote controlled

Users can remote control a *lab*SAR system using a smartphone, tablet, or PC via WLAN. *lab*SAR I.1 has an individual website address that can be used to conveniently configure and control the entire system via internet connection (web browser).



Sample-accurately synchronized

Several controllers can be connected to each other via HEAD*link* (up to a maximum of 60 meters) and sample-accurately synchronized. For larger distances, LAN connections can be used. Via LAN, the synchronization is performed by means of PTP (Precision Time Protocol).
*lab*CTRL II.1 controllers can be synchronized wirelessly with each other via the built-in receivers for navigation satellite systems.

Multi-client

Multi-client measurements (with *lab*CTRL II.1 as of firmware 1.2) can be performed with other PCs and Recorders of ArtemiS SUITE or *lab*SAR for monitoring, back-ups, etc.

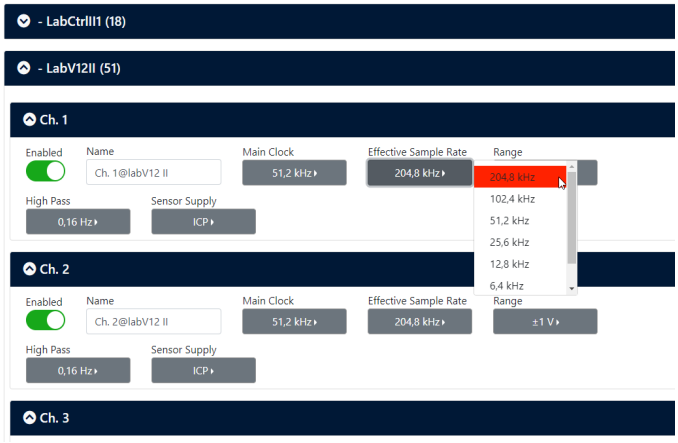
WEB INTERFACE

The clearly structured web interface is used for configuration and control of *lab*SAR I.1 and the connected HEAD*lab* system. Each *lab*SAR I.1 uses an individual web address which can be conveniently accessed via smartphone, tablet, or PC. Users can individually configure *lab*SAR I.1, the *lab*CTRL II.1 controllers, the input modules, and the individual channels in just a few steps and then immediately start their measurements.

Channel list / frontend

Via Auto Connect, *lab*SAR I.1 automatically identifies the connected controllers, the input modules, and the sensors and clearly displays the individual channels in the channel list. System sampling rates, bandwidths, sampling rates, etc. can be adjusted quickly and clearly.

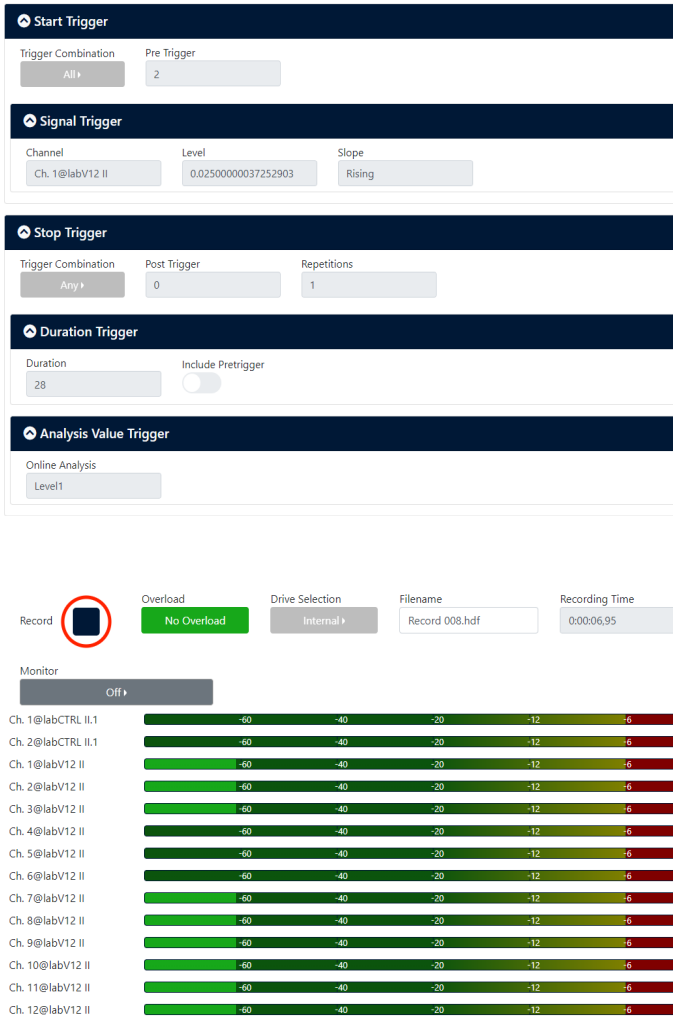
Via the frontend settings, HEAD*lab* systems can be customized so that measurements are started immediately after powering on *lab*SAR I.1 and automatically restarted after interruptions.



Recorder / presets

For a quick setup of a *lab*SAR system, proven functionalities of ArtemiS SUITE are available. Users can configure sensors and Recorders in ArtemiS SUITE, load these configurations via the web interface, and save them as presets. This means great time efficiency and high flexibility when setting up a system. Up to ten presets are available, and for various measurement setups, only the matching preset needs to be selected to immediately start a measurement.

During a measurement, overload displays and bargraphs for all channels are available.



Triggers / user documentation

Triggers and Documentation Templates can be configured in ArtemiS SUITE, then loaded via the web interface, and saved as presets.

This allows, for example, measurements to be performed with triggers without interaction and User Documentation to be automatically added to each measurement.

File browser / storage devices

Using the file browser to access the measurement files is very convenient. Via Windows File Explorer, the files can even be transferred to other PCs or storage media using drag-and-drop.

*lab*SAR I.1 provides 1 TB internal memory. As additional storage, SSD-1 with 1 TB or SSD-2 with 2 TB can be used via *lab*SSD I.

ACCESSORIES

POWER SUPPLY ADAPTER

*lab*SAR I.2 (Code 3705.2)
- Power adapter for *lab*CTRL II.1 and *lab*SAR I.1
- LEMO 4-pin → terminal plug, LEMO 4-pin

*lab*SAR I.4 (Code 3705.4)
- Power adapter for *lab*CTRL II.1, *lab*SAR I.1, and *lab*SWP-x

POWER-BOX

*lab*PWR I.2 (Code 3712)
- For HEAD*lab* systems up to max. 100 W

POWER SUPPLY FOR POWER BOX

PS 24-150-L2
24 V, 150 W, LEMO 2
(Code 0621B)

CABLES

*lab*SAR I.3 (Code 3705.3)
- USB cable for *lab*SAR I.1
- Type A → type C, with screw connection

CDL IV.0.3 (Code 9881-0.3)
- LAN cable (CAT6a LAN), flat, 0.3 m

LAN SWITCH

*lab*SWP-4 (Code 3707.2-4)
- 4-port LAN switch (PTP, Precision Time Protocol)

*lab*SWP-8 (Code 3707.2-8)
- 8-port LAN switch (PTP, Precision Time Protocol)

STORAGE MEDIA

*lab*SSD I (Code 3706.1)
- HEAD*lab* storage module with removable frame for Solid State Discs (SSD)

SSD-2 (Code 3706.2-2)
- Solid State Disc (SSD), 2 TB, internal SSD, 2.5″, SATA

FASTENING

*lab*CP I.1 (Code 3765.1)
- 2 x connection plate
- *lab*SAR I.1 → *lab*CTRL II.1

*lab*CP I.2 (Code 3765.2)
- 2 x connection plate
- Three modules or two modules → *lab*CTRL II.1

*lab*CP I.3 (Code 3765.3)
- 2 x connection plate
- Two modules or one module → *lab*CTRL II.1

*lab*CP I.4 (Code 3765.4)
- 2 x connection plate for *lab*CTRL II.1, *lab*SAR I.1, and *lab*SWP-x

CONNECTION BETWEEN MODULES

CLL X.xx (Code 3780-xx)
- HEAD*link* cable
- LEMO 8-pin → LEMO 8-pin
- Available cable lengths: 0.17 m, 0.26 m, 0.36 m, 0.5 m, 1 m, 1.5 m, 2.5 m, 5 m, 10 m, 20 m, 25 m, 30 m, 40 m, 50 m, 60 m

*lab*OA (Code 3785)
- Optical adaptor (optical, electrical) for data transmission between controller → input module
- SC/PC → SC/PC

LWL-patch cable multimode Duplex
- Optical cable
- SC/PC → SC/PC

*lab*RFC (Code 3789)
- Active adapter for loss-free extension of HEAD*link* connections with a CAT5 cable
- HEAD*link* → RJ45

TECHNICAL DATA

*lab*SAR I.1 (industrial PC with web interface)

Communication interfaces	4 x USB 3.1 Gen 2; 2 x LAN
Operating system	Windows 10 IoT Enterprise
LAN data rate (gross)	1000 Mbit/s
CPU	Core i5-8365UE
RAM	8 GB
Internal memory (SSD)	1 TB (840 GB for measurements)
WLAN kit	WiFi
Power input	9 V_{DC} to 48 V_{DC}
Operating temperature	-40 °C to +85 °C (-40 °F to 185 °F)
Dimensions (W x H x D)	150.4 x 62.1 x 106.2 mm
Weight	1300 g

*lab*SWP-4 / *lab*SWP-8 (LAN switches)

Communication interfaces *lab*SWP-4 *lab*SWP-8	 4 x RJ45 8 x RJ45
Network synchronization	IEEE1588v1 OC/BC (software) IEEE1588v2 TC (hardware) – ns accuracy IEEE1588v2 OC/BC (software)
Input voltage	9 V_{DC} to 57 V_{DC}
Input current	Max. 1.4 A @ 9 V_{DC}
Power consumption	Max. 12.6 W @ 9 V_{DC}
Operating temperature	-20 °C to +70 °C (-4 °F to 158 °F)
Dimensions (W x H x D)	54 x 113 x 145 mm
Weight	800 g

SCOPE OF SUPPLY

*lab*SAR I.1 (Code 3705.1)

› HEAD*lab* stand-alone recording module consisting of PC and recorder software

HEAD acoustics

Contact Information

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