sonova

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User Guide: [Bluetooth IF Excalibur]

User Guide

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1 Introduction

In Figure 1 the assembling parts of the Bluetooth IF Excalibur (Excalibur in short) are displayed.

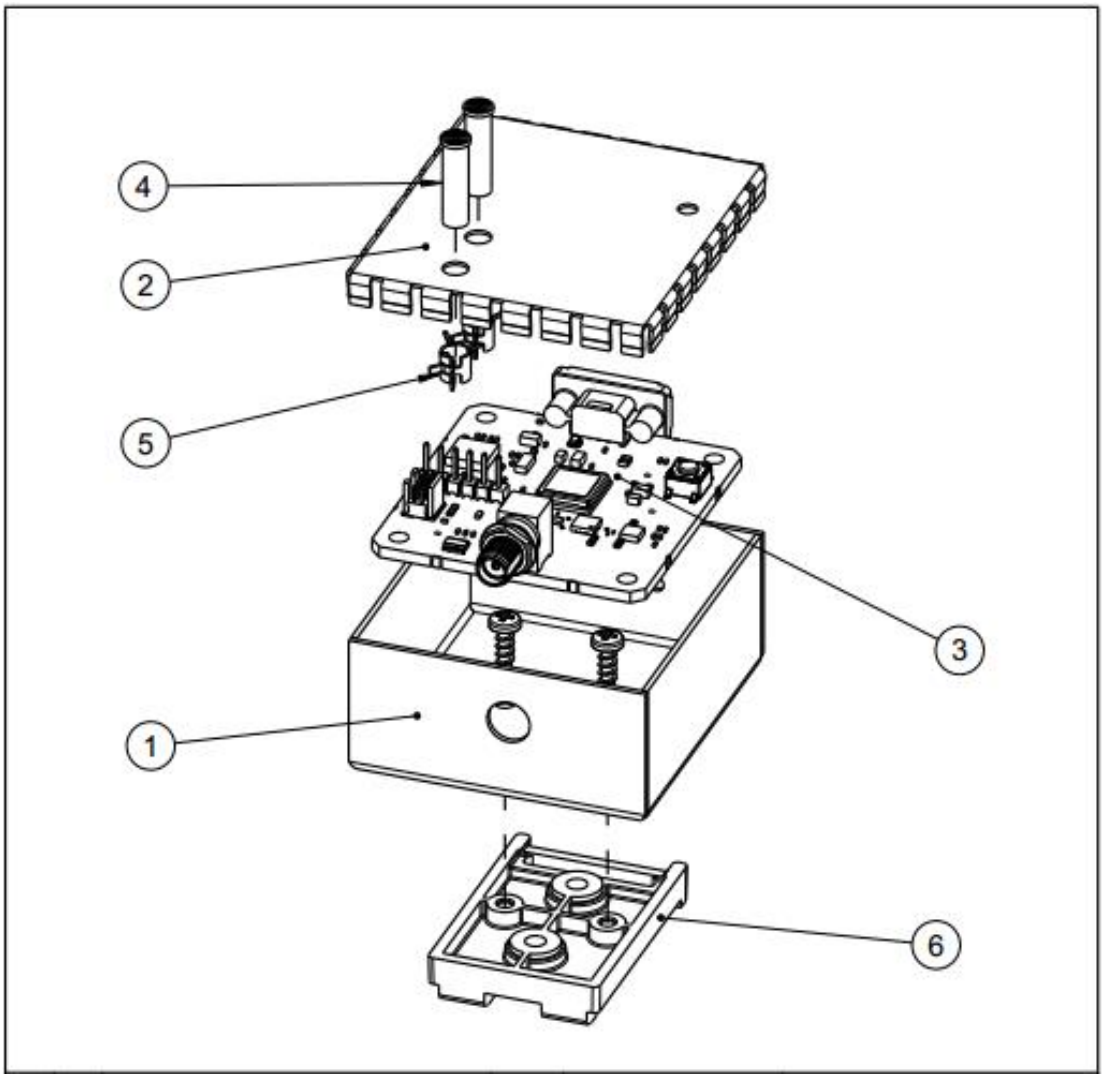

Figure 1 Excalibur parts

1) Enclosure
2) Status LED
3) Excalibur printed circuit board (PCB)
4) Power supply status LED
5) LED pipes holders
6) DIN Rail holder

2 Read before use

2.1 Intended use

Excalibur is a device / equipment that is used in the test field of the production of Hearing Instruments (HI) to transfer data between the device under test (DUT) and the computer controlling the test. The data transfer between the Excalibur and the DUT is done via Bluetooth Low Energy (BLE). The data transfer between the Excalibur and the computer controlling the test is done via a wired USB connections.
The Excalibur is powered via the USB connection from the computer controlling the test.
The Excalibur is compatible to all Sonova wireless Boston HI devices and future Bluetooth HIs based on BLE.

It can be used by any Sonova brand.
The use of the Excalibur is restricted to Operation Centers (OCs) and Group Companies (GCs).
The Excalibur is intended to be installed and operated by trained personal only.
The operator will not be in permanent contact with the Excalibur device.
The Excalibur is used to communicate with the DUT, during manufacturing processes and only during that period time.
The Excalibur device:

- establishes a wireless connection with the DUT, and a wired connection with the computer controlling the test
- sends and receives data via Bluetooth BLE, using a Sonova specific profile only
- allows configuration and programming of DUT during manufacturing tests
- is re-usable for future HI generations of the Sonova AG
- has LEDs for visual feedback about its power state and its status
- can be used by all Sonova Hearing aids brands
- does NOT process any personal data, therefore no further detailed privacy impact assessment is required

2.2 Electromagnetic waves emission

The device is conform to the required standards for Europe (CE), USA and Canada (FCC/IC), China (CCC) and Vietnam.

2.3 Electrical safety

The device is conform to the required standards for Europe (CE), USA and Canada (FCC/IC), China (CCC) and Vietnam.

3 Installation

Excalibur shall be installed in a ESD protected environment only.

3.1 Connecting to power supply / PC

To connect the Excalibur to the PC, make exclusively use of certified USB-IF cables.
Ensure that the used PC is properly connected to earth on its power supply lines.

4 User interface

4.1 Power supply status

When the USB cable is properly connected to the device and to a PC, and the power is within the correct range the LED turns on in a light-green color.

4.2 Status LED

4.2.1 Normal mode

The description of the LED color meaning is shown in Table 1.

Table 1 Color-to-Status mapping in normal mode

Color	Status
Green	Excalibur is ready to operate
Blue	Excalibur is busy

Red	A fatal error occurred. The device requires a power cycle.
Yellow	PC to Excalibur communication error detect
Light blue	Homologation functionality active

4.2.2 Firmware update mode

The description of the LED color meaning is shown in Table 2Table 1.

Table 2 Color-to-Status mapping in normal mode

Color	Status
White	Excalibur is ready to operate
Light blue	The firmware update process is active
Red	A fatal error occurred. The device requires a power cycle.
Yellow	The firmware update process is ongoing
Purple	The firmware update was not successful
Green	The new downloaded firmware is up and running

5 Maintenance

Excalibur is an electronic equipment, and it should be used with care.
Avoid all kind of drops of the device.
Keep the device housing clean.
Disconnected the USB cable and the RF antenna from the device before any cleaning operation on the device.
Clean with a dry tissue only.
Do not use water or any detergent.

6 Disposing

The device is a Waste Electrical and Electronic Equipment (WEEE), and has to be disposed according to the this directive.

7 Troubleshooting

See the LED behavior description in chapter 4.

8 Labeling

The following figures are showing the labels of the Excalibur product.

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Notice 1:
This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

Notice 2:
Changes or modifications made to this device not expressly approved by Sonova AG may void the FCC authorization to operate this device.

Notice 3:
This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada.
These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the device and receiver.
• Connect the device into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

It is designed not to exceed the emission limits for exposure to radio frequency (RF) energy set by the the Federal Communications Commission and ISED.

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.