Bolero 2.0

Next Generation Wireless

User Manual

03-000HB01EG-B10

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Bolero 2.0 User Manual

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications made to this equipment not expressly approved by Riedel may void the FCC authorization to operate this equipment.

Radiofrequency radiation exposure Information (for the Beltpack):
For body worn operation, this equipment has been tested and meets the FCC RF exposure guidelines when used with the Riedel accessories supplied or designated for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

Radiofrequency radiation exposure Information (for the Antenna):
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Beltpack: Este produto está homologado pela Anatel, de acordo com os procedimentos regulamentados pela Resolução n°. 242/2000 e atende aos requisitos técnicos aplicados, incluindo os limites de exposição da Taxa de Absorção Específica referente a campos elétricos, magnéticos e eletromagnéticos de radiofreqüência de acordo com as Resoluções n°. 303/2002 e 533/2009.

This device is granted pursuant to the Japanese Radio Law (電波法) and the Japanese Telecommunications Business Law (電気通信事業法). This device should not be modified (otherwise the granted designation number will become invalid).

Taiwan NCC Warning Statement
交通部電信總局低功率電波輻射性電機管理辦法 (930322) 根據交通部低功率管理辦法規定第十二條，經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。第十四條，低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

The device conforms to the following EU guidelines as attested by the CE mark.

- EMV (EMC) 2014/30/EU
- NSR (LVD) 2014/35/EU
- RTTE (RED) 2014/53/EU

Standards

- EN 300 328 V1.9.1 / ETSI EN 300 328 V2.0.20
- EN 300 330 V1.8.1 / ETSI EN 300 330 V2.1.0
- EN 301 406 V2.2.1
- EN 301 489-1/-3/-6/-17, EN 55022, EN 55024
- IEC/EN 60950-1, IEC 62368-1
- ARIB STD-T66
- ARIB STD-T101

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

- YFJANT101019
  (Bolero DECT Antenna / BL-ANT-1010-19)
- YFJBPK100619
  (Bolero Wireless Beltpack / BL-BPK-1006-19)

Industry Canada

- 8706A-ANT101019
  (Bolero DECT Antenna / BL-ANT-1010-19)
- 8706A-BPK100619
  (Bolero Wireless Beltpack / BL-BPK-1006-19)

Australia

Any device that connects to the data ports must comply with the clause 4.7 of AS/NZS 60950.1

Singapore

Complies with IMDA Standards DB105184

Taiwan

Complies with BSMI Standards

CONTENT

1 Preface

Thank you for choosing a Riedel product.

This PDF document provides detailed information about the Bolero system, pin outs, mechanical and electrical data.

This manual is available in additional formats:

CHM	"Compiled HTML Help" is the standard format for Windows online help and .Net applications
EPUB	"Electronic Publishing format" is a cross-platform e-book standard

For further information, please refer to the Riedel Website or contact your local distributor or the Riedel headquarters in Wuppertal.

1.1 Information

Symbols

The following tables are used to indicate hazards and provide cautionary information in relation to the handling and use of the equipment.

Danger
 Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
The highlighted line indicates the activity to prevent the danger.

Warning
 Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
The highlighted line indicates the activity to prevent the danger.

Caution
 Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
The highlighted line indicates the activity to prevent the danger.

	This text is for generally information. It indicates the activity for ease of work or for better understanding.

Service

- All service has to be undertaken ONLY by qualified service personnel.
- Do not plug in, turn on or attempt to operate an obviously damaged device.
- Never attempt to modify the equipment components for any reason.

Caution
 **All adjustments have been done at the factory before the shipment of the devices. No maintenance is required and no user serviceable parts are inside the module.**

Voltage

- The power cable should only be connected to a properly grounded source.
- Do not use any adapters.
- Never bypass a ground contact.

Danger	
	**To reduce the risk of electric shock do not remove cover or expose the products to rain or moisture.**

Warning	
	• Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan. • Apparatet må tilkoples jordet stikkontakt. • Apparaten skall anslutas till jordat uttag. • Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.

Battery Safety

The Bolero-Beltpacks are operated with the following battery type: Lithium-Ion, 3.6V, 4.8Ah, 17.3Wh, 1ICP7/39/65-2, with integrated electronics. For best performance charge the battery fully before initial use or reusing it after being stored for a long period. In order to ensure air transport safety, the Bolero Battery Pack is tested according to UN 38.3 – Transport of dangerous goods.

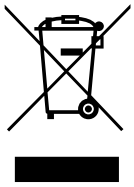
Warning	
	There is a risk of fire and burns if the battery pack is handled improperly.
	• **Do not short-circuit.** • **Do not dismantle, open, crush, heat above 60°C (140°F) or incinerate.** • **Recycle or Dispose of property.** • **Charge before initial use.** • **Use the specified Riedel Bolero Charger only or charge the battery via the Beltpack.** • **Do not charge using any other equipment from either side.** • **Do not connect the contacts to any other equipment.** Further recommendations: • Avoid storage in direct sunlight. • Do not subject batteries to mechanical shock. • In the event of a cell leaking, do not allow the liquid to come into contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice. • Do not use batteries which are not designed for use with the Beltpack. • Keep batteries out of the reach of children. • Keep batteries clean and dry. • Wipe the battery terminals with a clean dry cloth if they become dirty. • Use the battery only in the application for which it was intended. • When possible, remove the battery from the Beltpack when not in use.

Environment

- Never place the devices in an area of high dust particles or humidity.
- Never expose the device to any liquids.
- If the devices have been exposed to a cold environment and transferred to a warm environment, condensation may form inside the housing. Wait at least 2 hours before applying any power to the devices.

Disposal

Disposal of old Electrical & Electric Equipment (Applicable throughout the European Union and other European countries with separate collection programs)



This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of this product please contact your local city office.

1.2 Change History

New in 2.0 This user manual contains following changes:

Standalone/Link Mode

The Bolero system can be operated without the need of an Artist system.
See chapter 'System Modes' and 'Partylines'.

IO-Devices

In standalone mode Input/output-devices (NSA-002A) can be integrated into the Bolero system.
See chapter 'IO Devices', 'Audio Channels', 'Triggers' and 'Standalone Setup'.

Beltpack

- Quick-Muting an audio channel.
  See chapter 'Quick Mute'.
- Quick-Menu is configurable in the web interface.
  See chapter 'Bolero-Antenna > Web-Interface > Beltpacks > Edit > Quick-Menu'.
- Keys and rotaries retain functionality when using the Walk Test (Pro).
  See chapter 'Bolero-Beltpack > Features in Detail > Walk-Test'.
- Dim-level of priority calls (Priority Dim).
  See chapter 'Main Menu > Audio'.
- Headset-Limiter.
  See chapter 'Main Menu > Audio'.
- Volume adjustment of audio ports.
  See chapter 'Main Menu > Audio'.
- Checkbox to adjust behavior when (dis)connecting a headset.
  See chapter 'Main Menu > Audio'.
- Entry of the name and ID of the Beltpack.
  See chapter 'Main Menu > General Settings'.
- Several Key Functions/Assignment in the Beltpack.
  See chapter 'Main Menu > General Settings' and 'Bolero-Antenna > Web-Interface > Beltpacks > Edit > Keys'.
- AlwaysOn functions in the Beltpack.
  See chapter 'Main Menu > General Settings'.
- Volume Keys notifications in the Beltpack.
  See chapter 'Main Menu > General Settings'.
- Alternative Display Mode for key 5 and 6.
  See chapter 'Main Menu > General Settings'.
- Replay function (repeated listening the last call).
  See chapter 'Main Menu > General Settings'.
- German Beltpack Language.
  See chapter 'Main Menu > General Settings'.

Web-Interface

- License Manager
  This function allows installing licenses on Antennas.
  See chapter 'License Manager' and 'License Installation'.
- Diagnostics File Export
  This function allows exporting internal diagnostic information into a zip-file.
  See chapter 'Diagnostics File Export'.

1.3 Firmware Version

This manual refers to firmware version **2.0**.x of the Bolero system.
The "x" in the firmware version indicates the bugfix version.
The relevant bug-fixes are described in the related release notes.

Checking the Firmware Version

The firmware version can be checked in the Beltpacks, Antennas and in the web interface:

Beltpack

- Press and hold the Menu key (>3s).
- Navigate with a rotary encoder and the key-4 to the menu: **Service** > **Information** > **Beltpack**.

The upper line (**Package Version**) shows the Beltpack's firmware and bugfix version.

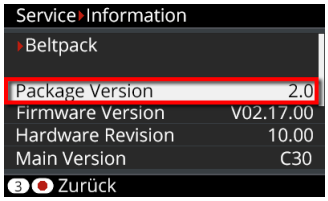


figure 1: firmware version (Beltpack)

Antenna

- Push any key to open the menu.
- Navigate with the cursor keys to the menu: **Information** > **System**.

The upper line (**Firmware Version**) shows the Antenna's firmware and bugfix version.

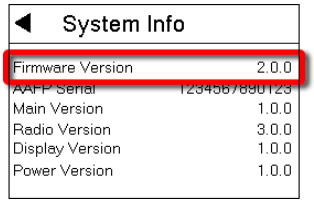


figure 2: firmware version (Antenna)

Web Interface

- Enter the IP address of a Bolero Antenna into a web browser.
- Click on the right side on the gear symbol.
- Choose **Firmware Manager** in the opened dialog.
- Enter the '**Admin PIN**' of the Net.

The right column (**Current Firmware**) shows the firmware and bugfix versions of all Bolero Antennas and AES67 cards within this Net.

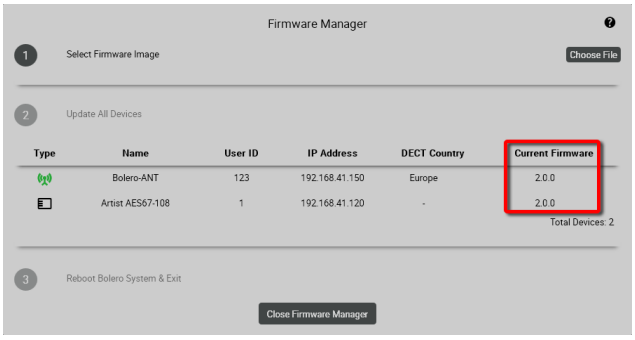


figure 3: firmware version (web interface)

1.4 About Bolero

Bolero Wireless Intercom

The Riedel Bolero Wireless Intercom system is a digital, easy to use full-duplex communications solution for broadcast, security, industrial and theater applications as well as for sports and cultural events. It is an all-new wireless intercom system capable of supporting 10 Beltpacks per Antenna and up to 100 Antennas in a single deployment. Bolero redefines the wireless intercom category with features such as ADR (Advanced DECT Receiver) with multiple-diversity and RF anti-reflection technology for greater RF robustness.
Bolero utilizes the benefits of the Digital Enhanced Cordless Telecommunications (DECT) standard's base layer. This provides a license-free, cellular architecture with seamless hand-over between cells, allowing each Bolero Wireless Beltpack to continuously monitor and automatically select the best connection to the Antenna.
Bolero is fully integrated in Riedel's Artist Matrix. Features like "Touch&Go" Beltpack registration, versatile operation as a wireless Beltpack, a wireless keypanel, and – in an industry first – a walkie-talkie pushing it beyond the limits of existing wireless intercom solutions.

When used with Artist, Bolero runs over a standards-based AES67 IP network with decentralized Antennas connected to AES67 switches and to Artist frames equipped with AES67 client cards, providing a fully integrated point-to-point roaming intercom ecosystem. The more decentralized Antennas added, the more robust the network becomes.

Bolero's Standalone Application is license-based and comes with several plug-and-play features. First, Antennas can be used individually, in a ring structure, or daisy-chained as the situation demands. Also, up to 100 Antennas and 100 Beltpacks can be integrated into a single system. These Antennas can be placed up to 300 meters apart and up to five can be powered via the CAT5 network using a new external PSU. The system is quickly and easily configured over the IP connection using a web browser. Finally, a throw-down box can be used to interface the standalone Bolero with other intercom systems via 4-wire.

The Bolero high-clarity voice codec provides both higher speech intelligibility and more efficient use of RF spectrum supporting a higher number of Beltpacks per Antenna in the same audio bandwidth.

The Riedel-exclusive ADR technology, combines a unique receiver design with multiple diversity elements specifically designed to reduce sensitivity to multipath RF reflections, making Bolero useable in challenging RF environments where other systems have great difficulty.

The Beltpack itself features 6 buttons for 6 intercom channels or point to point communications, plus a separate "Reply" button that easily facilitates a reply to the last person that called. Bolero's sunlight readable and dimmable display can be inverted so that it is readable in any orientation. The Beltpack can be used without a headset like a walkie-talkie radio utilizing an integrated mic and speaker.

Bolero Beltpacks support Bluetooth 4.1, allowing either a Bluetooth headset or a Smartphone to be connected. When a Smartphone is connected, the Beltpack can act like a car's "hands free" setup so the user can receive calls on their phone and talk and listen via their Beltback headset. User can also inject phone calls directly into the intercom channels, providing new levels of workflow flexibility.

Based on Riedel's extensive rental experience, the Beltpack uses a combination of premium materials, including high-impact plastics and rubber overmolds making it both tough and comfortable to use in any situation.

Light and powerful high performance lithium rechargeable battery packs are used for the Beltpack. Battery packs are able to charge inside the Beltpack as well as separately in the 5-bay Charger.

What is Bolero?

- A next generation high performance digital wireless intercom system
- License-free, cellular architecture with seamless hand-over
- Riedel exclusive advanced next generation DECT receiver with multiple-diversity and RF anti-reflection technology for greater RF robustness
- Efficient use of RF spectrum for a hassle-free operation even with high channel count

Riedel Bolero – Key Features

- 10 Beltpacks per Antenna
- 100 Antennas per system
- 100 Beltpack capacity per system
- Cellular architecture with seamless hand-over
- Standards-based, decentralized, AES67 IP-networked Antennas
- Fully integrated with Artist for point-to-point comms
- Standalone mode supports plug and play for non IP network structures
- License free
- No registration headaches! Touch the Beltpack to the Antenna and GO!
- Riedel-exclusive ADR receiver technology
- Up to six full-duplex keys plus convenient REPLY button
- Modern, high-clarity voice codec
- Integrated mic and speaker for headset-free operation
- Can be used as a Beltpack, a portable desktop keypanel, or Walkie-Talkie
- Tough & ergonomic – Beltpack built to survive
- Bluetooth 4.1
- Weatherproof
- Bottle opener – just in case!

1.5 System Modes

New in 2.0

The Bolero system features two modes of operation: **Standalone/Link** and **Integrated/Artist**.

Standalone/Link mode

This mode enables communication between Bolero Beltpacks or communication via user defined Partylines (see chapter 'Partylines') in the Bolero system itself. An Artist system is not required in this mode but one Antenna need a valid 'Standalone' license to operate in this mode (see chapter 'License Manager' and 'License Installation'). Furthermore IO Devices can be integrated in the Bolero system. A description of required steps can be found in chapter: "Bolero-Antenna > Features in Detail > Standalone Setup".

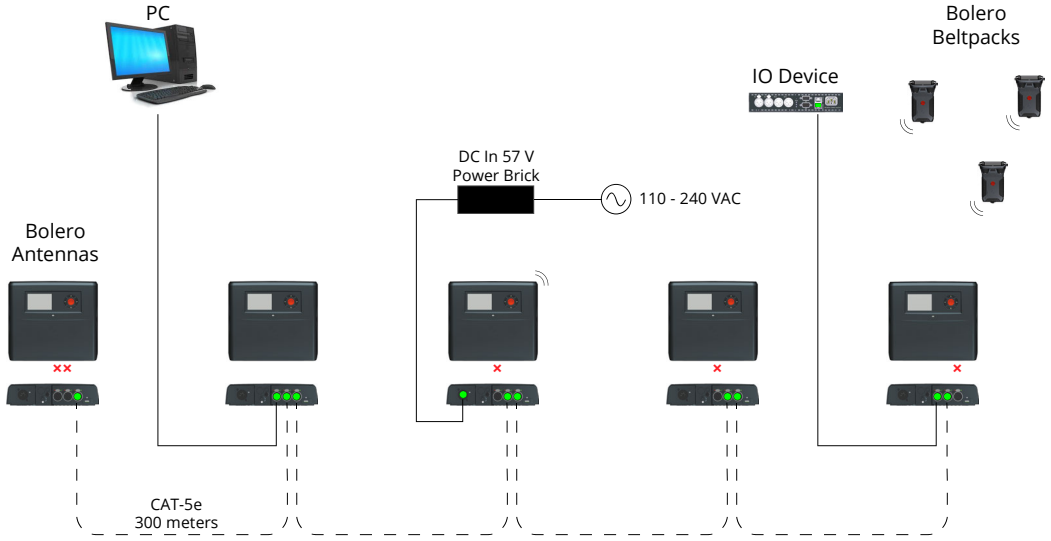


Figure 4: Standalone/Link mode

Integrated/Artist mode

In this mode the Bolero system is integrated in the Artist system. This enables the communication between Bolero Beltpacks and panels/ports in the Artist system. In this mode the Artist system is mandatory.
A description of steps required to integrate a Bolero-System with an Artist-System can be found in chapter: "Bolero-Antenna > Features in Detail > Artist Setup".

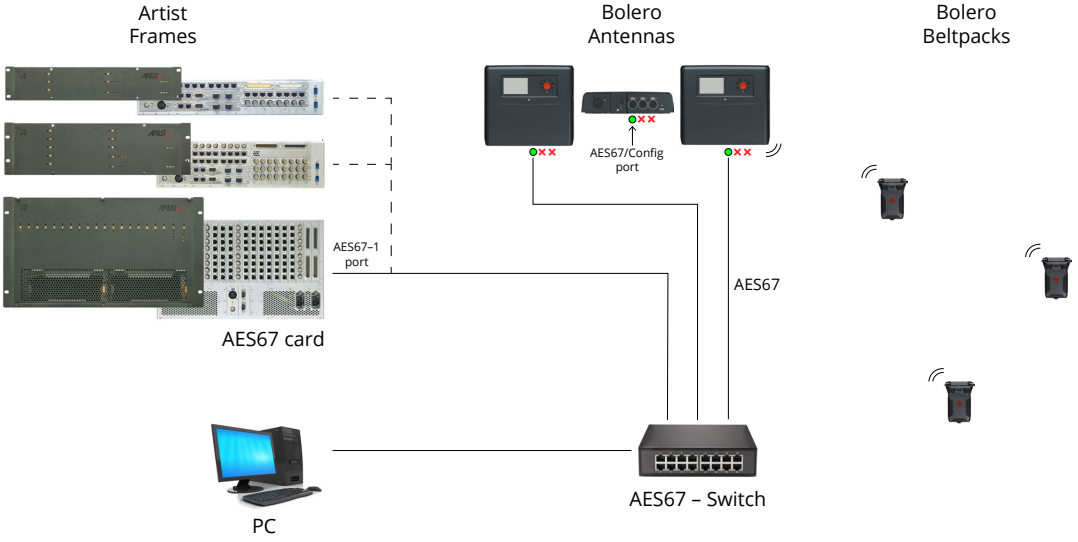


Figure 5: Integrated/Artist mode

2 Setup

2.1 Standalone Setup

New in 2.0

This chapter describes the required steps to operate a Bolero-System in the **Standalone** mode and connect it with IO devices. You can connect maximal two 4-wire boxes (NSA-002A) to a single Antenna and up to ten in a Bolero system. If you route the NSA-002A box through a switch, maximal two NSA-002A can be connected to the switch.

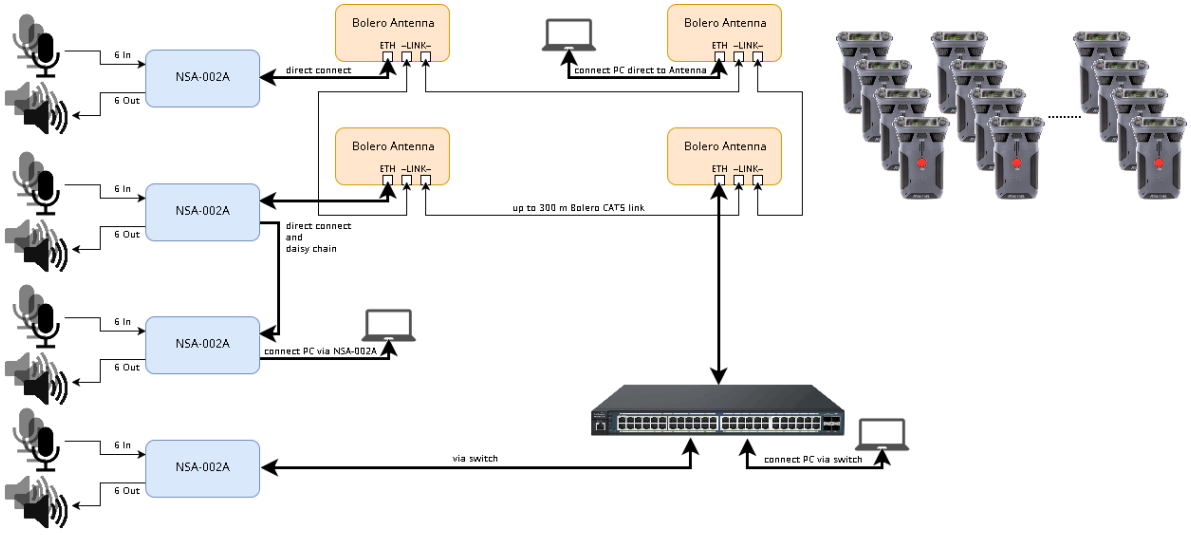


Figure 6: Standalone – Setup Diagram

The following devices are required:

- ✓ Bolero Antenna (with standalone license)
- ✓ Bolero Beltpack
- ✓ IO Device (NSA-002A)
- ✓ Gbps Network Switch (optionally with PoE+ functionality)

	The NSA-002A must be operated in Bolero-Mode to be integrated in the Bolero network space. The active mode is indicated by the upper device mode LED (blue: Bolero, violet: Manual). The operation modes can be toggled by pushing the mode button for more than 5 seconds. Further information can be found in the separate NSA-002A user manual.

- Connect the 'ETH1/2' port of the IO device (NSA-002A) to the network switch. If a PoE+ switch is used, the device is also supplied with power.
- Alternatively, attach the device to mains.

- Connect the Antenna's 'AES67/Config' port to the network switch.
- Power the Antenna via the separate Bolero-Power-Supply 'BL-EPS-1005-00', 'BL-EPS-1001-00' or via PoE.

The IP address of the Antenna is shown in the bottom right of the display (e.g. 192.168.41.150). The e-ink display shows the current IP also when the Antenna is not powered.

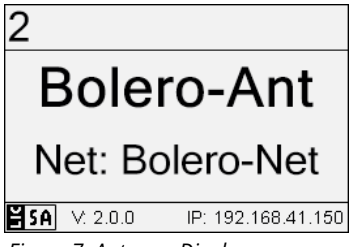


Figure 7: Antenna Display

Open the web interface of the Antenna to access the configuration:

- Enter the IP address of a Bolero Antenna in the web browser (e.g. 192.168.41.150).

The PC needs to be in the same subnet.

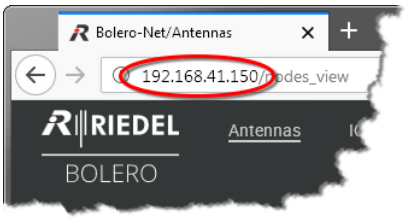


Figure 8: Web interface of the Antenna

- Select the unassigned Antenna(s) by left clicking.

Selected elements will be highlighted.

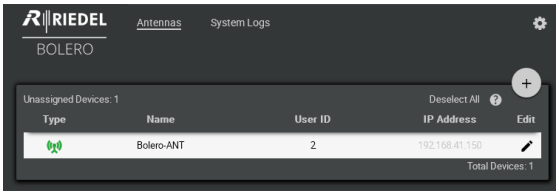


Figure 9: Selected Antennas

- Click on the plus symbol and select the entry **Create Network Space**.

A dialog is opened to enter the Net name and the Admin PIN.

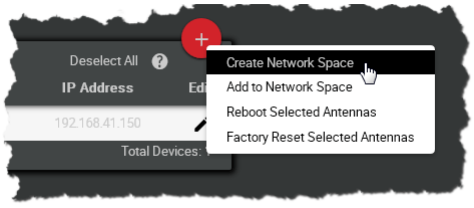


Figure 10: Create Network Space

- Enter a name for the Bolero net in the field **Name** (e.g. Bolero-Net).
- Select the system mode **Standalone/Link**.
- Define an **Admin PIN** (4 digits, 0–9).
- **Apply** the entries.

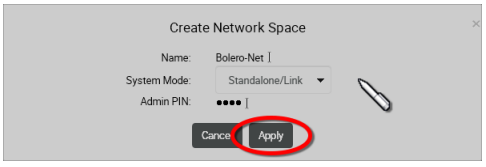


Figure 11: Dialog – Create Network Space

- Enter the **Admin PIN** again for confirmation.
- Click the **OK** button.

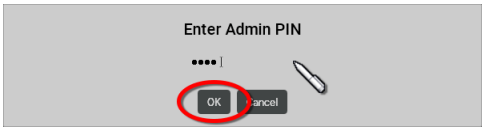


Figure 12: Dialog – Admin PIN

This example shows the new created Network Space called **Bolero-Net**. In this example, the net consists of one Antenna.

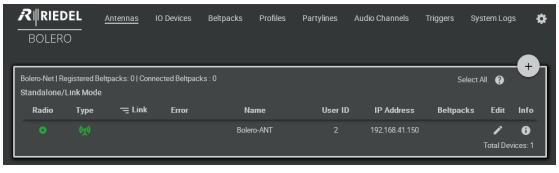


Figure 13: Assigned Antenna

- Click on the plus symbol and select the entry **Registration Mode**.

A dialog is opened to enter the registration options.

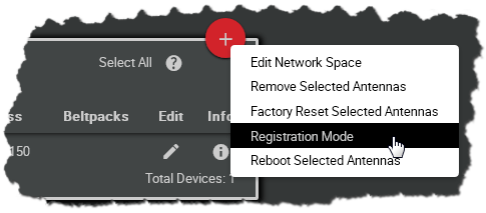


Figure 14: Registration Mode

- Enable the **OTA** and/or **NFC** registration method.
- **Apply** the changes.

Beltpacks require a PIN for the OTA registration. By default the **Admin PIN** is used. If the function '**Use Admin PIN for OTA Registration**' is *disabled*, a different **OTA Registration PIN** can be defined for the OTA registration.

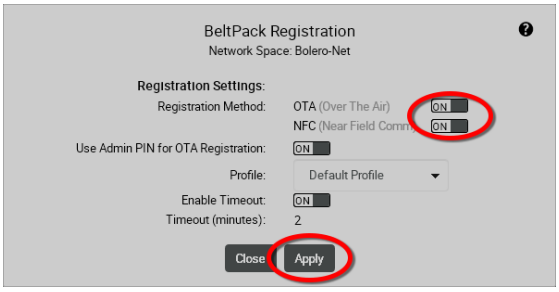


Figure 15: Dialog – Beltpack Registration

Beltpacks are able to register to this net as long as the registration mode is active (see chapter Bolero Beltpack > Features in Detail > Add Beltpacks).

Figure 16: Beltpack Registration active

Registered Beltpacks are listed on the page **Beltpacks**.

- Enable the **Direct Edit** switch.
- Click on the Beltpack's ID and enter a unique Beltpack ID (0–999).

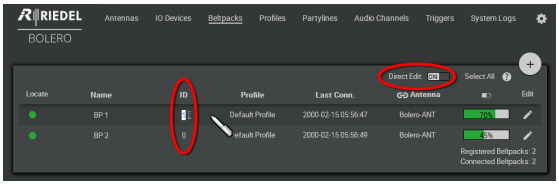


Figure 17: Registered Beltpacks

- Open the page **IO Devices**.
- Select the unassigned IO Devices (NSA-002A) by left clicking.

Selected elements will be highlighted.

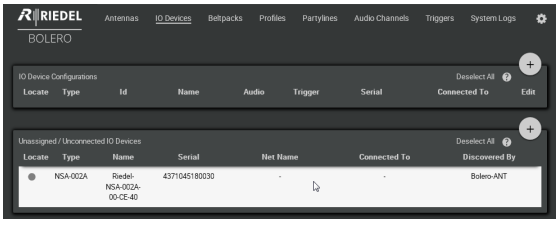


Figure 18: Selected IO-Devices

- Click on the plus symbol and select the entry **Add IO Devices**.

A dialog is opened to select the device configuration.

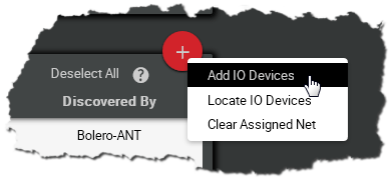


Figure 19: Add IO Devices

- Select **New Configuration**.
- Click **Proceed**.

A dialog is opened to create the device configuration.

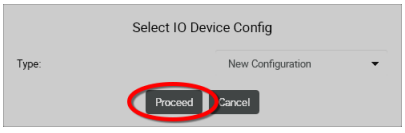


Figure 20: Dialog – Select IO Device Config

- Enter a name for the device configuration in the field **Name** (e.g. my NSA config).
- Enable/disable the desired GPIO-ports (**Trigger**) of the IO device.
- Select the mode of the desired audio channels.
- If necessary, modify the the names of the single Triggers and Audio Channels.
- **Apply** the changes.

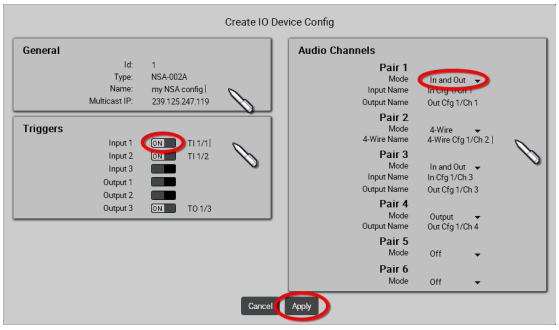


Figure 21: Dialog – Create IO Device Config

This example shows the new created device configuration called **my NSA config** and the corresponding NSA-002A.

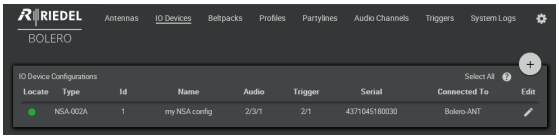


Figure 22: new created device configuration with NSA-002A

The configured audio channels are listed on the page **Audio Channels**.

- Click on the ✎ button to configure the respective audio channel.

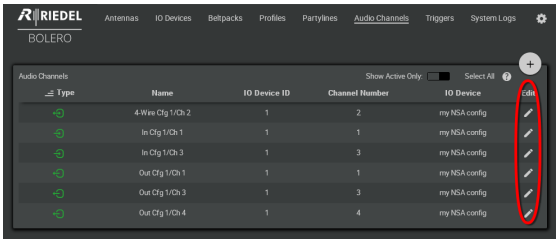


Figure 23: Audio Channels

The views **Always-On**, **Trigger**, **On-Talk** and **On-Notification/Beep** allows configuring up to five functions:

- Calling a destination (with low/high priority)
- Monitoring a source (with low/high priority)
- Sending a beep-tone / voice-notification
- Setting a (physical/virtual) GPIO output

The function is triggered depending on the view where it is configured.

Functions in the view...

- **Always-On** are permanently activated.
- **Trigger** are switched by a trigger.
- **On-Talk** are automatically activated if the respective channel is performing a call.
- **On-Notification/Beep** are automatically activated if the respective channel receives a notification/beep.

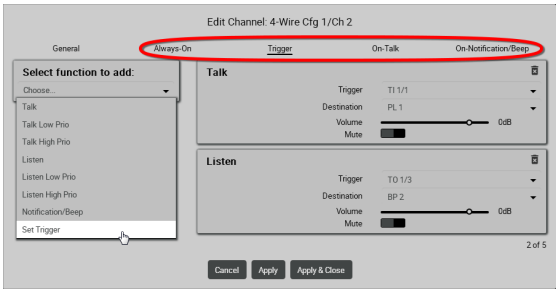


Figure 24: edit audio channel – Trigger

The page **Beltpacks** allows programming the Beltpacks key functions individually.

- Click the ✎ button to configure the respective Beltpack.
- Use the **Profiles** page to configure all Beltpacks assigned to the profile in one step.

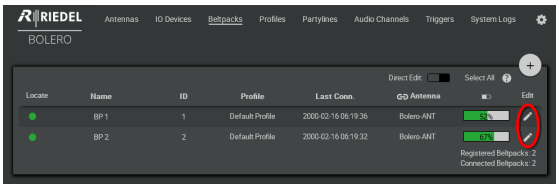


Figure 25: Registered Beltpacks

The view **Keys** allows configuring the keys of the Beltpacks:

- Calling a destination (with low/high priority)
- Monitoring a source (with low/high priority)
- Sending a beep-tone / voice-notification
- Setting a (physical/virtual) GPIO output

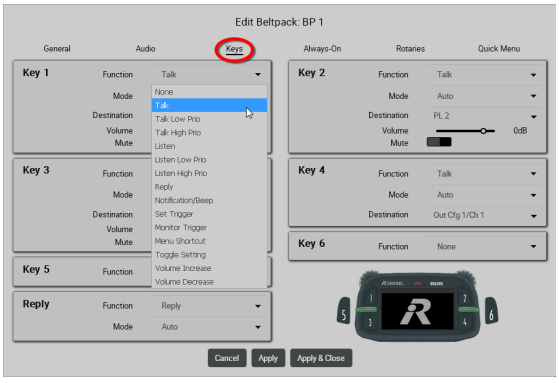


Figure 26: edit Beltpacks – Keys

After this configuration the Beltpacks are able to communicate to other Beltpacks as well as to the audio channels of the IO devices.

2.2 Artist Setup

This chapter describes the required steps to operate a Bolero-System in the **Integrated/Artist** mode and connect it with an Artist-System.

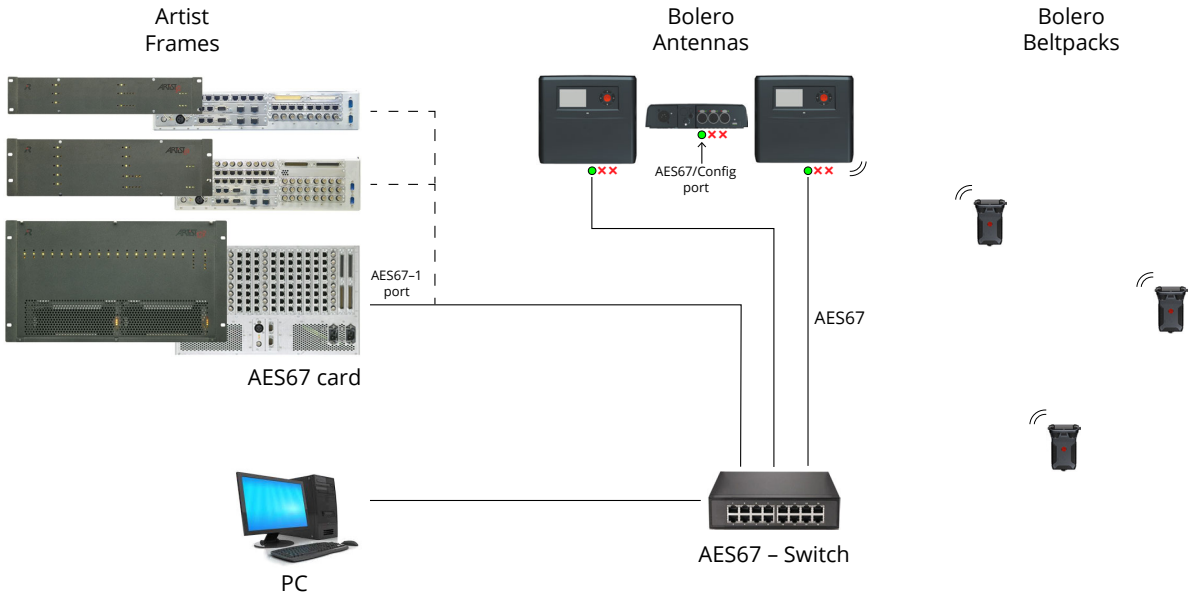


Figure 27: Artist – Setup Diagram

The following devices are required:

✓ Artist frame with AES67 client card
✓ Bolero Antenna
✓ Bolero Beltpack
✓ Gbps Network Switch (optionally with PoE+ functionality)

- Connect the 'AES67-1' port of the AES67 client card in the Artist frame to the network switch.
- Power up the Artist frame.

- Connect the Antenna's 'AES67/Config' port to the network switch. If a PoE+ switch is used, the Antenna is also supplied with power.
- Alternatively, attach a separate DC power supply to the Antenna's power connector. Riedel recommends using the Bolero-Power-Supply 'BL-EPS-1005-00'.

The IP address of the Antenna is shown in the bottom right of the display (e.g. 192.168.41.150). The e-ink display shows the current IP also when the Antenna is not powered.

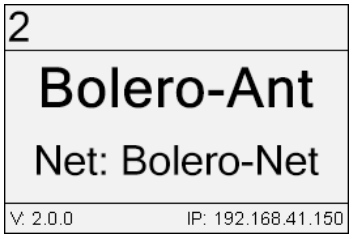


Figure 28: Antenna Display

- Start the Artist configuration software (**Director**) on your PC. For detailed information about Artist configuration and setup please refer to the Artist and Director manual.

Verify that the IP address of the AES67 card in the Artist frame is within the subnet of the Bolero Antenna:

- Open the AES67 properties by right clicking on the respective card and choosing "**Properties**".

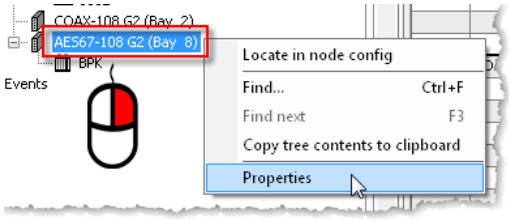


Figure 29: Open the AES67 card properties

- If necessary, edit the IP address and transfer the changes to the Artist frame.

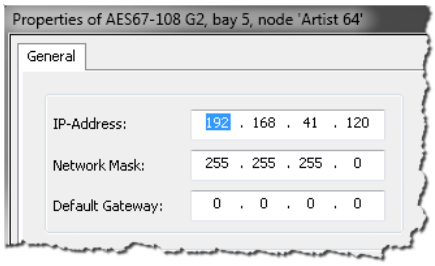


Figure 30: Properties of the AES67 card

Open the web interface of the Antenna to access the configuration:

- Enter the IP address of a Bolero Antenna in the web browser (e.g. 192.168.41.150).

The PC needs to be in the same subnet.

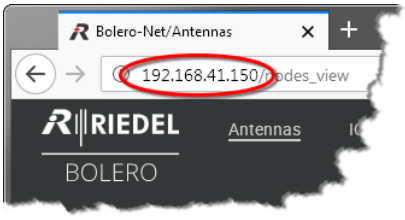


Figure 31: Web interface of the Antenna

- Select the Antenna(s) and AES67 card by left clicking.

Selected elements will be highlighted.

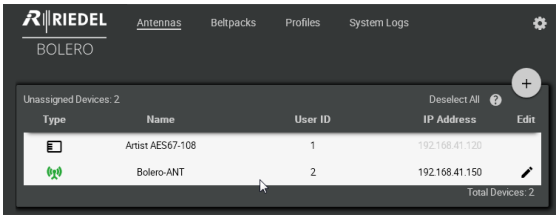


Figure 32: Selected Antennas and AES67 cards

- Click on the plus symbol and select the entry **Create Network Space**.

A dialog is opened to enter the Net name and the Admin PIN.

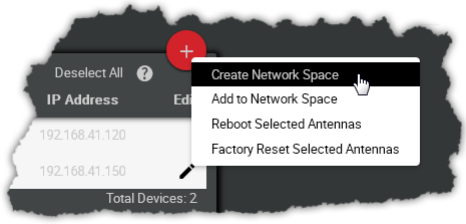


Figure 33: Create Network Space

- Enter a name for the Bolero net in the field **Name** (e.g. Bolero-Net).
- Select the system mode **Integrated/Artist**.
- Define an **Admin PIN** (4 digits, 0–9).
- **Apply** the entries.

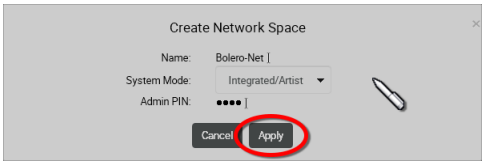


Figure 34: Dialog – Create Network Space

- Enter the **Admin PIN** again for confirmation.
- Click the **OK** button.

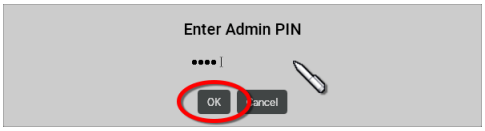


Figure 35: Dialog – Admin PIN

This example shows the new created Network Space called **Bolero-Net**. In this example, the net consists of one Antenna and one AES67 card.

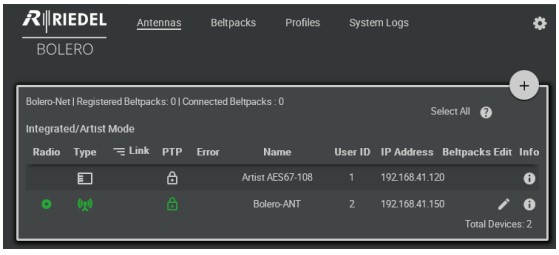


Figure 36: Assigned Antenna and AES67 card

- Click on the plus symbol and select the entry **Registration Mode**.

A dialog is opened to enter the registration options.

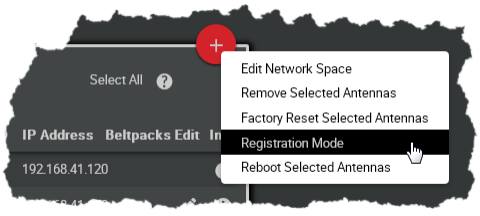


Figure 37: Registration Mode

- Enable the **OTA** and/or **NFC** registration method.
- **Apply** the changes.

Beltpacks require a PIN for the OTA registration. By default the **Admin PIN** is used. If the function '**Use Admin PIN for OTA Registration**' is *disabled*, a different **OTA Registration PIN** can be defined for the OTA registration.

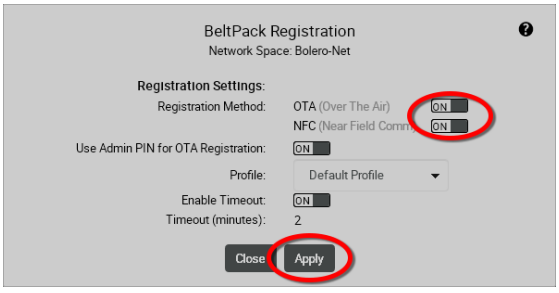


Figure 38: Dialog – Beltpack Registration

Beltpacks are able to register to this net as long as the registration mode is active (see chapter Bolero Beltpack > Features in Detail > Add Beltpacks).

Figure 39: Beltpack Registration active

Registered Beltpacks are listed on the page **Beltpacks**.

- Enable the **Direct Edit** switch.
- Click on the Beltpacks' ID and enter a unique Beltpack ID (0–999).

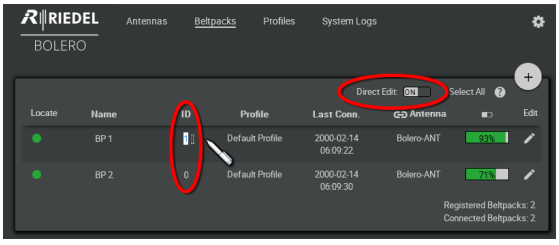


Figure 40: Registered Beltpacks

Now from the Artist configuration software (**Director**):

- Open the Beltpack properties by right clicking on the respective Beltpack and choosing "**Properties**".

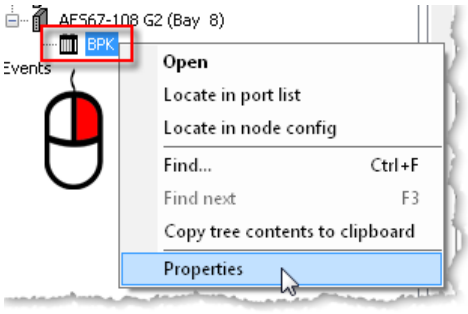


Figure 41: Open the Beltpack properties

- Select the '**Bolero**' tab.
- Enter the same Bolero User ID that you entered in the Antenna's web interface.
- Edit the Multicast address.
  A unique Multicast address must be used for each Beltpack in the Director config.
  Riedel recommends using the start address '239.255.0.1' for the Beltpacks Multicast addresses.

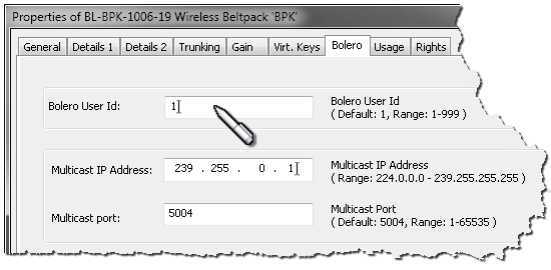


Figure 42: Properties of the Beltpack

The Beltpacks' key functions can be defined now via Director.
The Beltpacks are now able to talk to the Artist system and vice versa.

2.3 Add Antennas

To add more Antennas to a working **Network Space**, the new Antennas mustn't be assigned to any other Net. If a new Antenna is already assigned to a Net, see chapter '**Remove Devices** > Antennas' to remove it from the current Net before proceeding the registration.

	New Antennas have disabled radio, if the Antenna is not known by the matrix.

- Connect the Antenna's 'AES67/Config' port to the network switch. If a PoE+ switch is used, the Antenna is also supplied with power.
- Alternatively, attach a separate DC power supply to the Antenna's power connector.

The IP address of the Antenna is shown in the bottom right of the display (e.g. 192.168.41.151).

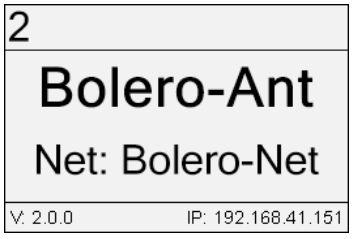


Figure 43: Antenna Display

Open the web interface of the Antenna to access the configuration:

- Enter the IP address of a Bolero Antenna in the Web-Browser (e.g. 192.168.41.151).

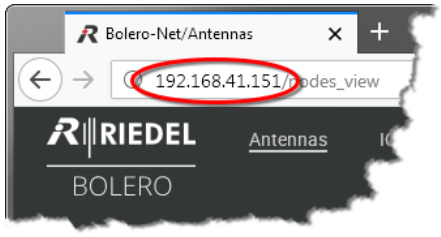


Figure 44: Web interface of the Antenna

	Take care that the Antennas IP address is in the same IP range like the existing Net. The IP settings can be modified in the web interface (✎) as well as in the Antennas' menu (**IP Settings**).

- Select the unassigned Antenna(s) to be added to an existing **Network Space**.

Selected elements will be highlighted.

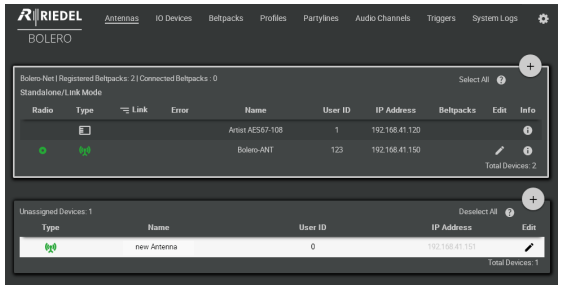


Figure 45: Selected new Antennas

- Click on the plus symbol off the unassigned Antenna(s) and select the entry '**Add to Network Space**'.

A dialog is opened to select the Net.

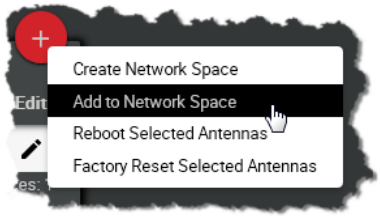


Figure 46: Add to Network Space

- Select in the drop-down menu an existing **Network Space**.
- Click the **Apply** button.

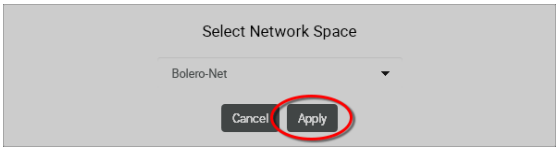


Figure 47: Dialog – Select Network Space

This example shows the new added Antenna in the existing Network Space **Bolero-Net**.

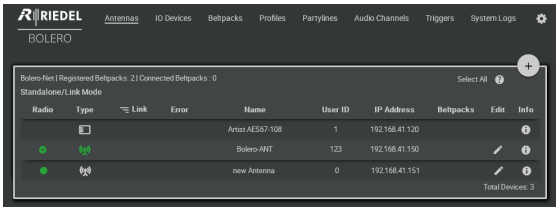


Figure 48: Added new Antenna in the Bolero-Net

Do not forget to assign a unique User ID to the new Antenna.

- Click the ✎ Edit icon of the new Antenna.
- Click the **Apply** button.

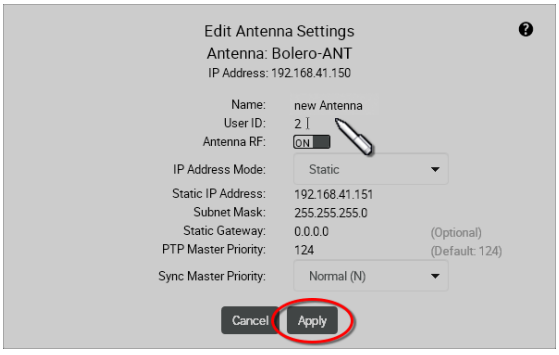


Figure 49: Apply unique User ID

In this example the Network Space consists now of two Antennas and one AES67 card.

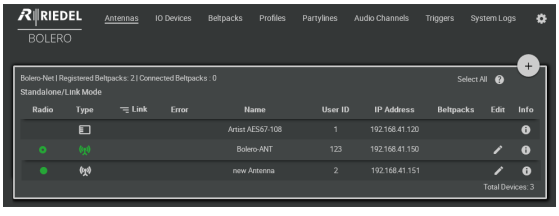


Figure 50: Devices in the Bolero-Net

2.4 Remove Devices

In the Antennas Web interface it is possible to remove registered Antennas as well as registered Beltpacks from a Net.

2.4.1 Antennas

To de-register Antennas from a Net, choose the register '**Antennas**'.
Then select the desired Antennas.

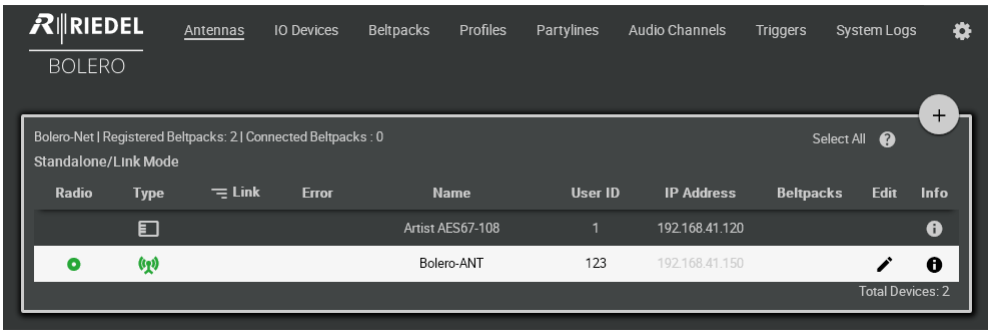


Figure 51: Web Interface – Antennas

Click on the plus symbol and select the item '**Remove Selected Antennas**'.

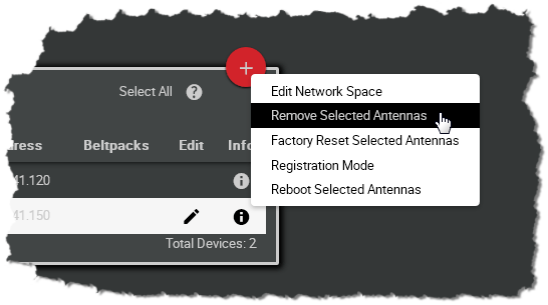


Figure 52: Remove Selected Antennas

Confirm the opened dialog by clicking '**Ok**'.

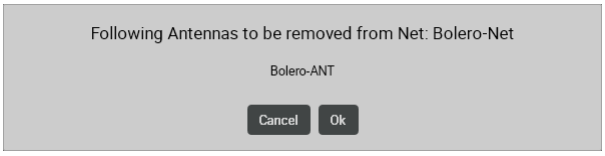


Figure 53: Confirmation dialog

The Antennas will be removed immediately from the Net.

2.4.2 Beltpacks

To de-register Beltpacks from a Net, choose the register '**Registered Beltpacks**'.
Then select the desired Beltpacks.

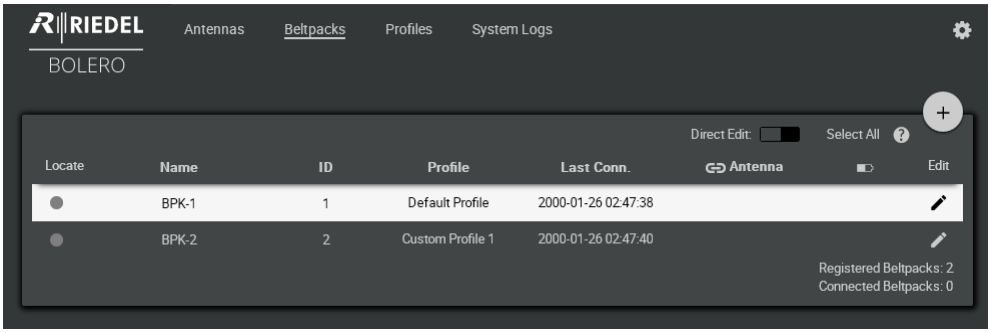


Figure 54: Web Interface – Registered Beltpacks

Click on the plus symbol and select the menu item '**Deregister**'.

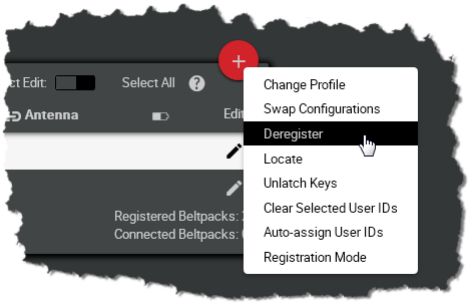


Figure 55: Deregister

Confirm the opened dialog by clicking '**Ok**'.

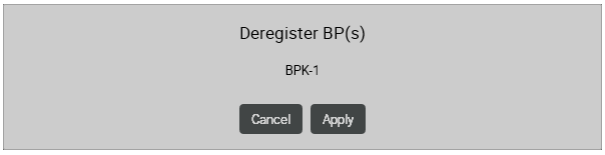


Figure 56: Confirmation dialog

The Beltpacks will be removed immediately from the Net.

2.5 Firmware Update

This chapter describes the update procedure of Bolero devices (Bolero-Antennas and Artist-AES67 client cards). Depending on the system mode, following devices are required:

	Integrated/Artist Mode	Standalone/Link Mode
PC	✓	✓
Bolero firmware package (for example "bolero_v1.2.3-456.package")	✓	✓
Network Switch (optionally with PoE+ functionality)	✓	✗
AES67 client cards	✓	✗
Bolero-Antennas	✓	✓

Integrated/Artist Mode:

- Attach the PC to the network switch.
- Attach the 'AES67/Config' connector of the Bolero-Antennas to the network switch.
  If the Antennas are connected to a 'PoE+' switch, they are also powered via the switch.
- Otherwise power the Antennas via external DC power supplies.

Standalone/Link Mode:

- Attach the 'AES67/Config' connector of one Bolero-Antenna to the PC.
- Cascade further Antennas via the Link connectors (Link-1 to Link-2, and vice-versa).
- Power the Antennas via external DC power supplies.
- Otherwise power the middle Antenna (of up to five daisy-chained Antennas) via BL-EPS-1005 power supply.

After the Antennas' bootup is finished, the respective IP address is displayed in the bottom right of the Antennas display (for example 192.168.41.150).

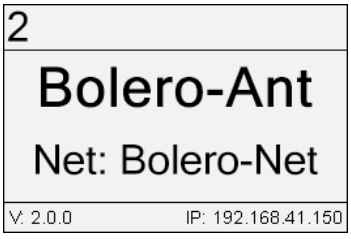


Figure 57: Antenna display

Open the web interface of an Antenna:

- Enter the IP address in the web browser (e.g. 192.168.41.150).

In this example the Bolero Network Space consists of one Antenna and one AES67 client card.

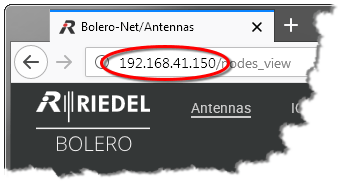


Figure 58: Web interface of the Antenna

- Click on the gear icon and select the entry **Firmware Manager**.

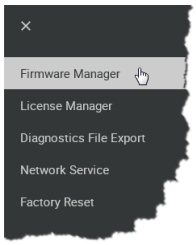


Figure 59: Firmware Manager

A dialog is opened to enter the **Admin-PIN** of the Net.

- Enter the **Admin PIN** that was defined when the Network Space was created.

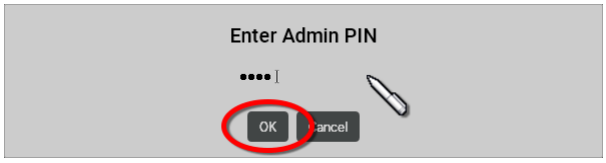


Figure 60: Dialog – Admin PIN

The Firmware Manager is opened.

- Click on the '**Choose File**' button.
- Navigate to the location of the firmware package and select the desired one by clicking the **Open** button.

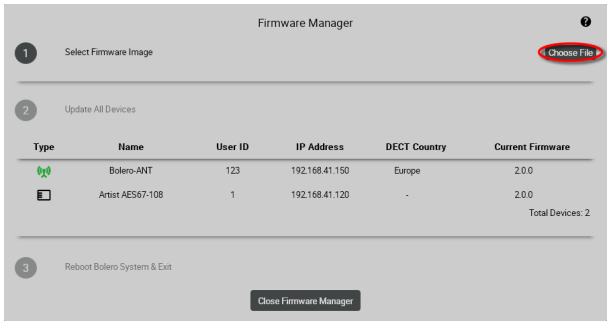


Figure 61: Firmware-Manager – Select Firmware Image

The firmware package is transferred to the Bolero system.
A bar graph visualizes the upload progress.

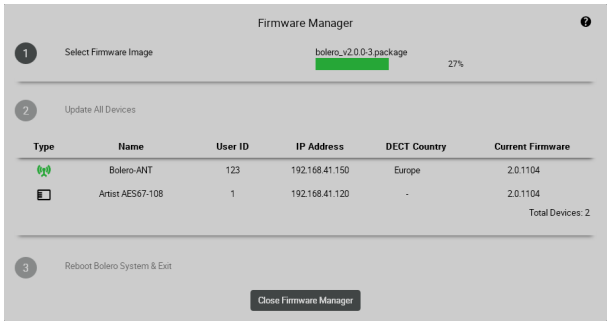


Figure 62: Firmware-Manager – Upload to Network Space

After uploading the package information is displayed if the uploaded firmware package is compatible with the existing devices. **Incompatible** means that the respective device won't be updated.

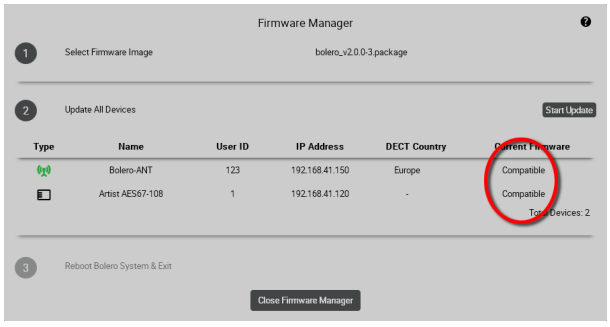


Figure 63: Firmware-Manager – Compatible Firmware-Package

- All **compatible** devices will be updated by clicking the '**Start Update**' button.

	Audio and radio interruptions may occur from this point on.

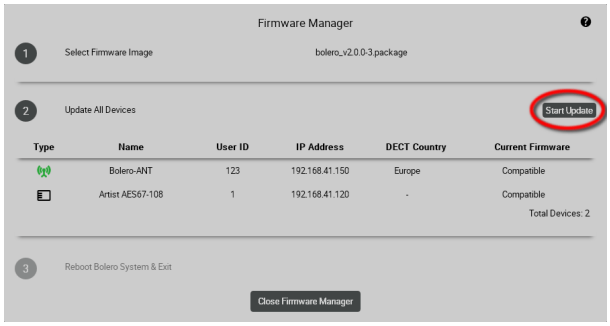


Figure 64: Firmware-Manager – Start Update

A dialog is opened to confirm the update of all compatible devices.

- Click the **Apply** button to proceed.

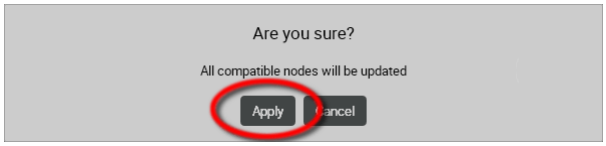


Figure 65: Firmware-Manager – Confirmation

Bar graphs visualize the update progress.

Caution: Do not remove the power from any devices.

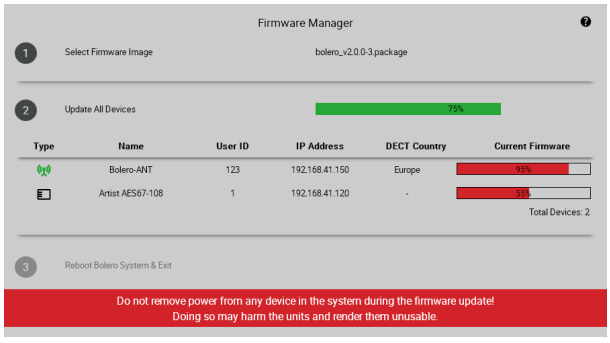


Figure 66: Firmware-Manager – progress

All devices must be rebooted to finish the update process.

- Click the '**Finish & Reboot System**' button.

The connection to the Antenna will be interrupted while the device is rebooting.

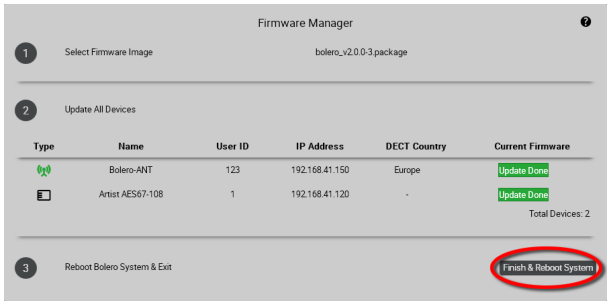


Figure 67: Firmware-Manager – Reboot devices

2.6 License Installation

New in 2.0

This chapter describes how to change licenses on Bolero Antennas.

The license on Antennas can be changed by a license file that is provided by your local distributor. The name of the license file needs to be equal to the serial number of the Antenna where the license will be installed. The serial number of an Antenna is 13 digits long and contains numbers only (e.g. "1234512345678"). The license file is a "bin"-file (e.g. "1234512345678.bin"). Every license file is only readable by the Antenna matching the serial number.

A license file (.bin) must be packed into a zip-archive (.zip). Licenses of multiple Antennas can be changed at the same time, as they are combined in one zip-archive.

	A license file is valid for two weeks after building. If the license file will be installed after that period, the license file will be rejected and needs to be regenerated; even with the same content. The building date of a license file that should be installed must be newer as date of the already installed license.

Follow these steps to install licenses:

- Click on the gear icon and select the entry **License Manager**.

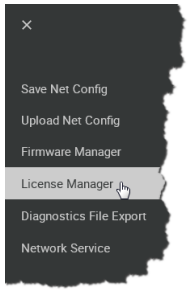


Figure 68: License Manager

A dialog is opened to enter the **Admin-PIN** of the Network-Space.

- Enter the **Admin PIN**, that was defined when the Network-Space was created.

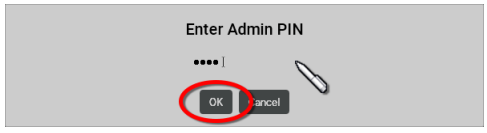


Figure 69: Dialog – Admin-PIN

- Click on the '**Install License**' button.
- Navigate to the location of the license file (zip) and select the desired one by clicking the **Open** button.

Figure 70: License-Manager – Install License

A dialog is opened to confirm the installation of all compatible licenses.

- Click the **Apply** button to proceed.

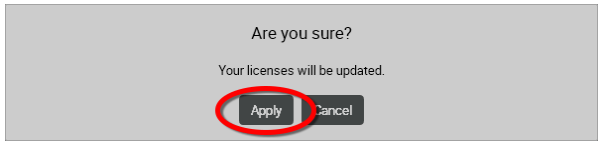


Figure 71: License-Manager – Confirmation

The license manager installs the loaded licenses on the respective Antennas.
After installation a report is opened and lists errors as well as Antennas with and without installed license.

- Click the **Close** button to exit the license manager.

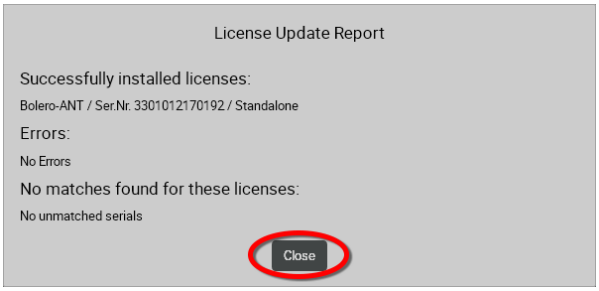


Figure 72: License-Manager – Report

2.7 Switch Recommendations

This page describes all technologies that are needed for Bolero traffic and describes a simple network classification that can be used to specify the switch that you need to choose.

	After reading these pages, you should be able to determine, if a switch is suitable for Bolero by looking at the spec sheet. If you classify the network you are building, choosing a switch can be done without excessive testing.

The Bolero System needs the following key technologies supported by the switch fabric:

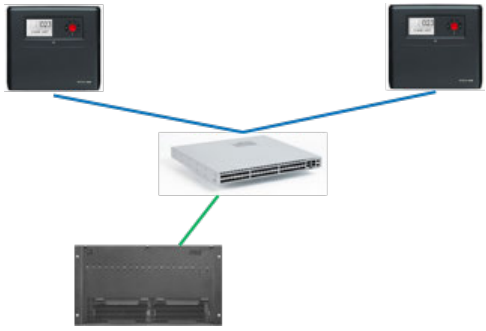
PoE+ (IEEE 802.3at)

Required to power the device without external PSU.

- Provides up to 30 W of power per port
- Antenna can be powered from the switch

Please note that the most switches do not power all ports simultaneously. The power supply limits the total power.

When using Power over Ethernet use PoE+ switches only.

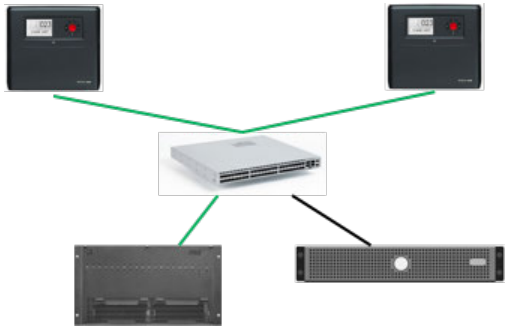


IGMP snooping (v2)

Required on every switch.

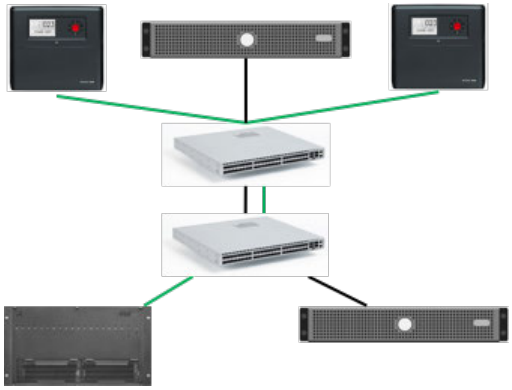
- Multicast traffic only reaches ports that explicitly ask for it
- Also prevents Artist CPU card from being flooded with Bolero traffic

Please note the limit of Multicast groups of a switch. Bolero needs 6+[amount of Beltpacks] Multicast groups (example: 42 Beltpacks require 48 Multicast groups). Cascading of switches does not raise the system limit. The lowest supported number in the complete system is the limit.



QoS (IEEE 802.1p), based on DiffServ (RFC 2474)

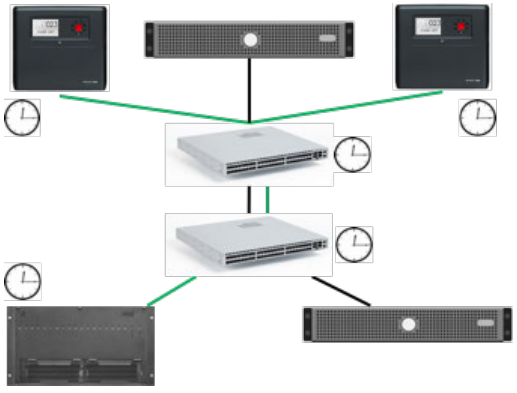
- Traffic from the Bolero Antennas can be prioritized when transmitted through a larger network.
- Extremely important when the network contains more than one switch.
- Prioritization on:
  a. PTP [E, F]
  b. AES67 [AFU1]



PTPv2 (IEEE 1588) boundary clock or transparent clock

Required to build networks with more than three switches and other traffic.

- Provides better synchronization of Bolero Antennas. The synchronization offset must not exceed 1 microsecond.
- Critical, if the network contains a lot of other devices (Video over IP, Servers, ...).
- Supported PTP mode:
  • AES67 profile
  • End-to-End delay measurement
  • Multicast traffic mode



When using Power over Ethernet use PoE**+** (PoE **plus**) switches only!
The power of switches that are supporting PoE only is not sufficient!

A 1Gbit Ethernet connection is necessary to operate the Bolero net.

Network Size	Classifications	Requirements
Small	• Up to 20 Beltpacks and 5 Antennas • Only Riedel audio traffic • Central switch or stacked switches	• IGMP snooping • QoS
Medium	• Up to 50 Beltpacks and 20 Antennas • Only Riedel audio traffic • Up to three switch hops	• IGMP snooping • QoS
Large	• Up to 100 Beltpacks and 100 Antennas • Mixed traffic • More than three hops	• IGMP snooping • QoS • PTP boundary clock or PTP transparent clock

3 Bolero Beltpack

The Bolero Wireless Beltpack is a light and compact, digital station with six individually configurable keys for intercom, IFB or GPO triggering use. Two rotary level controls on the front of the Beltpack allow volume-control for each key and menu navigation. Pushing the Talk key toggles talk on/off with momentary or latching operation as well as an Auto mode that combines both functions in one. Activation is indicated in the display and a button backlit LED. Optional super bright call LEDs and a vibration motor are able to indicate an incoming call or warnings. The Beltpack features a sunlight readable color display which by default shows the labels for the six function keys. In addition, the display gives the user access to the Quick menu and the intuitive configuration menu.
With the new "Touch&Go" Beltpack registration a quick and user friendly registration is implemented. Just touch the Beltpack to the Antenna and GO.
The Bolero Wireless Beltpack has a user replaceable XLR connector for headset, a 3.5mm jack for a line-in signal and a USB port for firmware updates. Bolero Beltpacks support Bluetooth 4.1, allowing a Smartphone to be connected. When a Smartphone is connected, the Beltpack can act like a car's "hands free" setup so the user can receive calls on their phone and talk and listen via their Beltpack headset. Users can also inject phone calls directly into the intercom channels, providing new levels of workflow flexibility. A fully charged Bolero rechargeable Battery allows more than 17 hours of operation. The rugged housing with rubber protectors houses the internal antennas.

3.1 Operating Elements

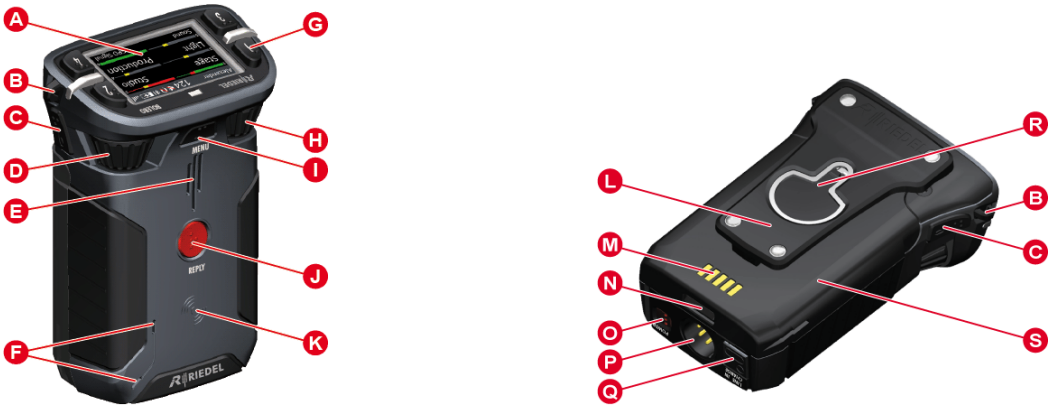
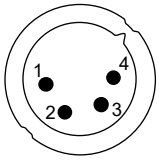


Figure 73: Beltpack – Operating Elements (front/top, rear/bottom)

A	Full color sunlight readable display
B	Lanyard or safety cord mounting holes
C	Walkie-Talkie keys 5+6 (side)
D	Rotary encoder (**2**)
E	Speaker
F	Microphones
G	Keys 1…4 (top)
H	Rotary encoder (**1**)
I	Menu key
J	Reply key
K	NFC contact point
L	Belt clip
M	Charging contacts
N	Battery release button
O	Power button
P	Headset connector (XLR-4)
Q	Line-In and charging sockets (3.5mm jack / USB Type-C) underneath a rubber cover
R	Screw head mount and bottle opener
S	Removable battery pack

XLR-4 (male)



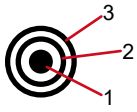
Pin	Description
1	Microphone -
2	Microphone + (+5 VDC)
3	Earphones -
4	Earphones +

Figure 74: XLR 4 male

The headset connector is a 4-pole male XLR connector and supports mono headsets with electret or dynamic microphones, depending on the menu setting.

The microphone power (~5 VDC) will be switched on if the menu setting '**Audio** > **Headset Type**' is set to **Electret**, **Electret detect** or **Auto** and an electret microphone is attached.

3.5mm jack (female)

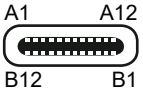


Pin	Description
1 (Tip)	Left
2 (Ring)	Right
3 (Sleeve)	GND

Figure 75: 3.5mm jack female

The 3.5 mm jack is a line input connector. The maximum input level is +12 dBu.

USB Type-C



Pin	Description	Pin	Description
1	GND	7	Dn1
2	SSTXp1	8	SBU1
3	SSTXn1	9	VBUS
4	VBUS	10	SSRXn2
5	CC1	11	SSRXp2
6	Dp1	12	GND

Figure 76: USB Type-C

The USB connector is used to charge the Beltpack.
Furthermore the connector is used for firmware updates. By default the Beltpack is updated in the Bolero Charger.

Charging is only possible with >500 mA USB ports. 100 mA are not supported.
The charge current is limited to 500 mA by the Beltpack.

3.2 Status LEDs

Figure 77: Beltpack – Status LEDs (top)

1	**Status**	***off***	Beltpack is turned off
		green	• Beltpack ready (System ok) • Beltpack off, USB charging, battery full
		green blinking	USB charging, battery level >90
		red	• booting • Beltpack not registered/not connected • low battery level (<15%) • outside the Antenna coverage area
		red blinking	critical battery level (<8%)
		red fast blinking	critical error (no function)
		orange	Mic unmuted, Sidetone on
		orange blinking	USB charging, battery level <90%
		orange fast blinking	Locate function active
		orange-red blinking	• Mic unmuted • Sidetone on • critical battery level (<8%)
2, 3	**Call**	***off***	no active call
		green	incoming / outgoing call
		bright orange	incoming / outgoing notification (beep)

3.3 Basic Operation

3.3.1 StartUp

Press the '**Power**' key firmly to power-up the device.

If the Beltpack is already registered to a Net, the Beltpack will try to establish a connection to it.
An unregistered Beltpack shows "**Not registered!**" on the splash screen. Pushing the '**Reply**' key for a second opens the **Registration** menu to register the Beltpack in a Bolero-Net. (See chapter 'Add Beltpacks'.)

The Main-View appears after successful registration and establishing a connection to a Net:

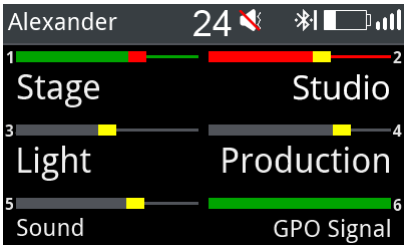


Figure 78: Main-View

Status bar	Beltpack name		Alexander
	Beltpack ID		24
	Speaker switched off	optional	
	Headset switched off		
	Bluetooth icon		
	Battery icon		
	Radio icon		
Main area	6 keys	key number	1 ... 6
		Level meter	
		Name of the channel or function that is assigned to the respective key (e.g. Reply, Set Trigger, Menu-Shortcut, Toggle Setting, etc.).	Stage

3.3.2 Key Functions

While the display is showing the Main View, users may talk individually or at the same time to all channels.
Pushing one of the six keys allows talking in the respective channel.
The Call LED is indicating if one channel is active at least. Each active channel has a colored indication in the display.
The keys 5, 6 and Reply are none latching by default. That means releasing this key will stop talking to this channel (Walkie-Talkie mode, PTT – push to talk). The keys 1 to 4 are latching. Push again the key to deactivate the respective channel.
The inactive channel is displayed in inactive color and the Call LED is off.
Both rotary encoders allow adjusting the master volume of the channels or a subset of channels.

	The key mode (Latching / PTT) is set in Director if the system is set to **Integrated/Artist** mode. For a new configuration in Director, all 6 keys are in PTT mode by default.

Menu Key

Three different functions can be triggered by pressing and holding the Menu key for a certain time.

Hold time of the Menu key	Function	Description
short key press (<0.5 sec.)	Channel Volume adjustment	Menu to adjust the individual volume level of the channels.
middle key press (>0.5 sec. / <3 sec.)	Quick-Menu	The Quick-Menu offers shortcuts to frequently used menu commands.
long key press (>3 sec.)	Main-Menu	More in-depth information is displayed and settings can be modified in the Main-Menu.

Navigation

Following keys can be used to navigate in the menu:

Rotary Encoder 1 **Rotary Encoder 2**	• Select the next/previous menu item • Change values/settings
Key 4 **Menu Key**	Enter selected menu item
Key 3 **Reply Key**	Back to parent menu item

3.3.3 Volume Adjustment

In the Beltpack the signal level can be manually leveled and limited. By default, rotating either rotary encoder adjusts the master volume of the speaker or headset if the display shows the Main-View. The header shows a level meter of the current master volume.

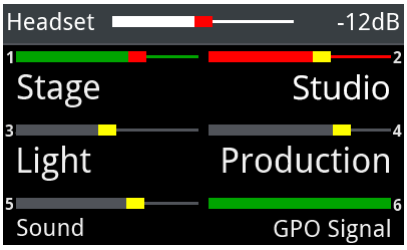


Figure 79: Master Volume

Press briefly the Menu key (<0.5 sec.) to change the volume level of a single channel.
Now the volume level of the channels (1+2) can be adjusted by the rotary encoders (A+B). The bars above the key labels indicate the individual adjusted volume level of the respective channel.
A second brief key press on the Menu key switches to the next channels 3+4, and a third short key press switches to 5+6 and finally to the Reply key. An additional key press switches back to the first channels.
After 3 seconds (factory default setting) with no rotary encoder change, the Beltpack switches back to the Main-View.

Figure 80: Channel Volume

3.3.4 Quick Mute

New in 2.0

A Beltpack user is able to quickly mute a Partyline (or any other audio source) assigned to a key without turning the volume down to minimum. This is done by entering the volume menu (short press on the menu button) and then pressing the desired key to mute or unmute. When the key is unmuted, the original volume is restored.

This feature has slightly different behavior depending on the system mode:

Integrated/Artist Mode	The volume level is set to minimum when muting a key (same as on all Artist Intercom panels) and activating the key (even while not in the volume menu) will unmute it.
Standalone/Link Mode	The volume level can be changed even while the audio source is muted. Activating a key while not in the volume menu will unmute it. Muting an active (latched) key will deactivate (unlatch) it.

3.3.5 Quick Menu

The Quick-Menu is opened by pressing and holding (>0.5 sec. / <3 sec.) the Menu key.
The Quick-Menu allows using user defined shortcuts to frequently used menu commands.

Navigate with one of the rotary encoders to the desired menu item and press the menu key to open the respective menu.
The selected menu item can be deleted in the Quick Menu by pressing the Key-1.
A user defined menu item can be assigned to the Quick-Menu by pressing the Key-2 and selecting the desired menu item.

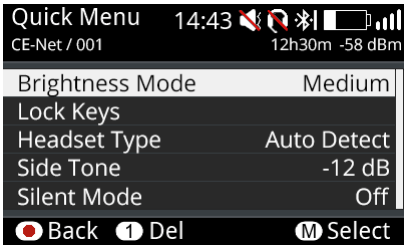


Figure 81: Quick-Menu

Header	Time		14:43
	Speaker switched off	optional	
	Headset switched off		
	Bluetooth icon		
	Microphone type (dynamic, electret, error)		D-Mic E-Mic Mic-Err
	Battery icon with remaining operation time, error icon		12h30m ERR
	Radio icon with level indication		-58 dBm
Main area	User definable rows with menu shortcuts: • Brightness Mode • Lock Keys • Headset Type • Side Tone • Silent Mode		
Footer	Reply key – one layer back		Back
	Key 1 – delete the selected entry		1 Del
	Key 2 – add an entry		2 Add
	Menu key – trigger selection		M Select

3.3.6 Main Menu

The Main-Menu is opened by pressing and holding (>3 sec.) the Menu key.
Basic information is displayed and settings can be modified in the Main-Menu.

- If the Beltpack language is set to German, it can be changed in the menu "**Allgemeine Einstellungen** > **Language**" to '**English**'.
- Default values are *underlined* or displayed in [*square brackets*].
- The entries marked with the SA symbol are only available in **Standalone/Link** mode.

The Main-Menu contains following entries:

- Audio
- Brightness
- General Settings
- Bluetooth
- Registration
- Admin
- Service

3.3.6.1 Audio

Gain Settings	**Headset Volume**	Volume level of the headset: Mute, -60 ... *-12* ... +12 dB
	Speaker Volume	Volume level of the speaker: Mute, -60 ... *-18* ... +12 dB
	Side Tone	Volume level of the Sidetone: Mute, -60 ... *0* ... +12 dB
	Headset Mic	Gain level of the headsets microphone: 0 ... *+18* ... +30 dB
	Internal Mic	Gain level of the internal microphone: 0 ... *+18* ... +30 dB
	Aux Input Gain	Gain level of the Aux input: Mute, -60 ... *-12* ... +12 dB
	New in 2.0 **Priority Dim**	Dim level of priority calls: Mute, -72 ... *-20* ... 0 dB
	Beep Notification	Volume level of the beep tones (relative to Headset/Speaker volume): -24 ... *-12* ... +12 dB
	Voice Notification	Volume level of the voice notifications (relative to Headset/Speaker volume): -24 ... *-6* ... +12 dB
	Mic Limiter	Threshold level of the microphone limiter: *Off*, -72 ... 0 dB
	New in 2.0 **Headset Limiter**	Threshold level of the headset limiter: *Off*, -72 ... 0 dB
	Vox Threshold	Threshold level of the Vox: Off, +10 ... *30* ... +100 dB
	Bluetooth Volume	Volume level of the Bluetooth audio signals: Mute, -60 ... *0* ... +12 dB
	Headset Lower Limit	Lower volume level of the headset: *Mute*, -60 ... +12 dB
	Speaker Lower Limit	Lower volume level of the speaker: *Mute*, -60 ... +12 dB

New in 2.0 **Volumes** SA	**Name of the Audio Ports 1 ... 35**	List of all audio ports the Beltpack is able to listen to.	
		Volume	Volume level of the audio ports: Mute, -60 ... *0* ... +12 dB
		Mute	Muting of the audio ports: *Off*, On
Headset Type	Selection of the microphone type in the headset: *Auto detect*, Dynamic detect, Electret detect, Dynamic, Electret		
New in 2.0 **Plug Function**	Checkbox to adjust behavior when (dis)connecting a headset at the XLR connector.		
	Plug	The Beltpack activates the headset mode if a headset is connected.	
	Unplug	The Beltpack activates the speaker mode if the headset is disconnected.	
Enhancements	**Microphone Filter**	Headset microphone filter (narrow, 3.5 kHz): *Off*, Narrow	
	Headphone Filter	Filter for hearing impaired people to increase intelligibility: *Off*, On	
	Headset Echo Suppression	Prevents/reduces acoustic echo distortions to improve voice quality of headsets: *Off*, On. **Echo suppression** is always on in Speaker/Mic mode.	
Speaker/Mic	Enables the internal speaker and microphone (walkie-talkie mode): *Off*, On If the silent mode is active while the speaker/mic mode is enabled, the silent mode is turned off and a warning is shown (Silent Mode is turned off).		

3.3.6.2 Brightness

Brightness Mode	Selection between one user defined and three pre-defined brightness definitions: Custom, Low, *Medium*, High	
Custom Settings	**Display**	Normal brightness level of the display: Off, 10 ... *50* ... 100% (10% steps)
	Display Dim	Dimmed brightness level of the display: Off, 10 ... *10* ... 100% (10% steps)
	Display Dim Timer	After this time of inactivity, the display illumination is dimmed: Off, 1 ... *10* ... 240 sec.
	Display Timeout	After this time of inactivity, the display illumination is switched off: *Off*, 1 ... 240 sec.
	Keys	Normal brightness level of the keys: Off, 20 ... *60* ... 100% (20% steps)
	Keys Dim	Dimmed brightness level of the keys: Off, 20 ... *20* ... 100% (20% steps)
	Keys Dim Timer	After this time of inactivity, the key illumination is dimmed: Off, 1 ... *10* ... 240 sec.
	Keys Timeout	After this time of inactivity, the key illumination is switched off: *Off*, 1 ... 240 sec.
	Call LED Brightness	Brightness level of the Call LED: 20 ... *40* ... 100% (20% steps)
	Status LED Brightness	Brightness level of the Status LED: 20 ... *80* ... 100% (20% steps)

3.3.6.3 General Settings

New in 2.0 **Name & ID** SA	**Name**	Entry of the 12-digit Beltpack name. [*BP*]	
	ID	Entry of the 3-digit Beltpack ID. [*1*]	
Profile	In a profile are user rights and parameter settings defined. Profile changes are possible in the web interface.		
	Change Profile	Changes the profile of the Beltpack. A list of available profiles is displayed.	
New in 2.0 **Key Assignment** SA	**Key 1 ... 6, Reply**	**Function**	• none • Talk/Listen (standard/high/low priority) • Reply • Notification/Beep • Menu Shortcut • Set Toggle • Set Trigger • Monitor Trigger • Volume (+/-)
		Mode	Momentary, Latched, Auto
		Destination	• Beltpack • Partyline • Audio Channel
New in 2.0 **AlwaysOn Assignment** SA	**Function 1 ... 5**	**Function**	• none • Talk/Listen (standard/high/low priority) • Set Trigger
		Destination	• Beltpack • Partyline • Audio Channel
Rotary Assignment	**Volume Rotary 1/2**	Defines the channels adjusted by the rotary encoder: *Master*, Key 1...6 , Reply, Bluetooth	
Notification	**Call**	Defines the signalization mode of a call: *Light*, Vibrate, Beep	
	Notification/Beep	Defines the signalization mode of a beep-call: *Light*, *Vibrate*, Beep	
	Info/Low Battery	Defines the signalization mode if the battery power is low: *Light*, *Vibrate*, Beep, *Voice*	
	Out of Range	Defines the signalization mode if the Beltpack looses the connection to the Antenna: *Light*, *Vibrate*, Beep, *Voice*	
	New in 2.0 **Volume Keys**	Defines the signalization while using the volume keys: Vibrate, *Beep*, Voice	
Silent Mode	Disables the speaker and acoustic signalizations: On, *Off*		
New in 2.0 **Display Mode**	In all modes the font size is automatically reduced to fit long content into the fields:		
	Standard	default value	
	Alternative	Key 5 and 6 are in the middle of the screen.	
	Standard Flip	Standard, display upside down	
	Alternative Flip	Alternative, display upside down	
New in 2.0 **Replay**	The Replay function allows repeated listening to the last call. Recordings are VOX controlled. Thus, no silence is recorded.		
	Playback	Starts the playback of the latest recording.	
	Recording Time	Defines the duration of recordings: Off, 1 ... *3* ... 15 Sec.	
	Store Time	Defines the time, how long the recording is stored: 1 ... *60* ... 240 Min.	

Timeout	**Menu**	After this time of inactivity, the menu will be closed and the display shows the Main-View: 5 ... *120* ... 240 sec.
	Volume Change	After this time of inactivity, the volume adjustment is terminated: 1 ... *3* ... 240 sec.
New in 2.0 **Language**	Selection of a pre-programmed language: *English*, Deutsch	
Lock Keys	Lock the keys to prevent accidental key actions: locked, *unlocked*	

3.3.6.4 Bluetooth

Bluetooth State	Enable the Bluetooth functionality: Off, Connect to Headset, Connect to Mobile/PC
Connect / Disconnect	• Disconnect: If connected to a device • Connect: if not connect to a device
Pair / Delete Pairing	Activates the paring mode and will be visible for other devices.
Share to net *1	Shares an active telephone call (no music) via intercom: *Local*, Public
Dim Level *1	Dimmed Bluetooth audio level if Beltpack has an active intercom conference: *Mute*, -24 ... +12 dB

*1 only if "Connect to Mobile/PC"

Further information can be found in chapter 'Bluetooth'.

3.3.6.5 Registration

Register to net	Registers the Beltpack to an existing net. The OTA registration PIN is necessary (Admin PIN by default). A list of available nets are displayed: • Over The Air (OTA)
Connect to pre-registered net	Registers the Beltpack to previous registered nets. A list of available pre-registered nets are displayed: • Select one to connect • Currently connected net is shown with radio select icon
Delete pre-registered net	Deletes previous registered nets in the Beltpack. A list of pre-registered nets are displayed: • Select one to delete

Further information can be found in chapter 'Add Beltpacks'.

3.3.6.6 Admin

The Admin PIN is required to access the Admin menu.

Registration Mode	**Local Beltpack NFC**	Registers a Beltpack at an already registered Beltpack via NFC: • NFC (local BP) active as long as you exit
	Over The Air (OTA)	Registers a Beltpack at an already registered Antenna via DECT: **On**, ***Off*** (all Antennas)
	Antenna NFC	Allows registering a Beltpack at an already registered Antenna via NFC: **On**, ***Off*** (all Antennas NFC)
	Timeout	After elapsing this time, the registration mode is disabled: **Off**, 1 ... *2* ... 60 min. (for OTA, System wide NFC, Charger)
OTA Pin	Defines the legitimation during OTA registration	
	Disable PIN	No PIN entry is required for OTA registration.
	Set new Pin	Insert a new 4 digit PIN that is required for the OTA registration.
	Set to Admin Pin	Defines to use the Admin PIN for OTA registration.
Admin Pin	Defines the legitimation to open the Admin menu in the Beltpack or to log into the web interface of the Antenna.	
	Disable PIN	No PIN entry is required for administration.
	Set new PIN	Insert a new 4 digit PIN that is required for administration purposes.
Time Source	Selects the synchronization source of the Beltpacks time setting: *PTP*, NTP, Internal	
System Time	Allows entering the system time if the time source is set to **Internal**.	
System Date	Allows entering the system date if the time source is set to **Internal**.	
Time Format	Define the time format: 12h, *24h*	
Date Format	Defines the date format: (dd/mm/yyyy, mm/dd/yyyy, *yyyy/mm/dd*)	

3.3.6.7 Service

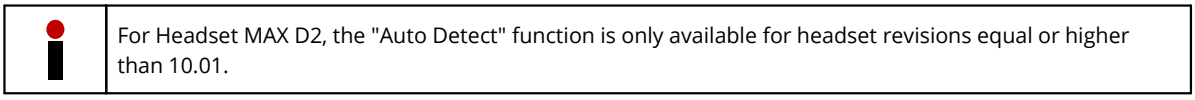
Test	**Walk Test**	Analyzes the signal quality to the visible Antennas. Following values are shown: • Antenna ID • Antenna RPN • current Signal Strength • current Signal Quality
	Walk Test Pro	Lists all Antennas that are visible at the current position. Following values are displayed: • Antenna ID • Antenna RPN • Signal strength • Busy: available Antenna capacity (**ok**, **full**) • CRC errors downlink • CRC errors uplink
Reset	**Profile Defaults**	Resets the profile to default values. All individual changes will be reset. All registration data stays in memory.
	Factory Reset	Resets the Beltpack to factory default settings. All data (Net lists, Profiles, Registrations) will be lost! A new registration is required.
Information	**Radio**	Displays a table with radio information. Following values are displayed: • Visible Antennas • Actual Radio Level • Radio Quality • Antenna Name • Antenna Number
	Beltpack	Displays a table with Beltpack information. Following values are displayed: • Package Version: **x.x.x** • Firmware Version: **Vxx.xx.xx** • Hardware-Revision: **xx.xx** • Main Version: **xxx** • Display Version: **xxx** • Serial number: (13 digits)
	Battery	Displays a table with Battery information. Following values are displayed: • Charge Status: **xx %, xxxx mAh** • Charge Mode:(**not charging**, **xxxx mA** • Temperature: (**too cold!**, **cold**, **normal**, **warm**, **too hot!**) • Battery Health: **xxx** % of max. capacity • Capacity Max.: **xxxx mAh** • Hardware: **xx.xx** • Serial Number: (13 digits)
Area	Protected menu – for Riedel service purpose only	

3.4 Features in Detail

3.4.1 Headset Type

Open the Beltpack Menu by pressing and holding (>3 sec.) the Menu key and select ' **Audio** > **Headset Type**'. Select the microphone type of the headset:

• **Auto Detect**	The Beltpack automatically detect the headset type.
• **Dynamic Detect** • **Electret Detect**	The Beltpack is fixed to a headset type but turns on audio only if a headset is detected.
• **Dynamic** • **Electret**	The Beltpack is fixed to a headset type and audio is enabled.



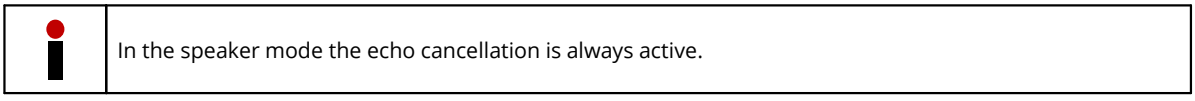
For Headset MAX D2, the "Auto Detect" function is only available for headset revisions equal or higher than 10.01.

3.4.2 Speaker/Mic

In the menu '**Audio** > **Speaker/Mic**' is defined, if the audio signal is routed to the internal speaker or to an attached headset. Connecting a headset will switch the speaker off. Removing a headset won't change the current setting.

The following table shows the usage of the internal and headset microphone:

	Speaker Mode: On	**Speaker Mode: Off**
Headset connected	Beltpack microphone	Headset microphone
no Headset connected	Beltpack microphone	no microphone active



In the speaker mode the echo cancellation is always active.

3.4.3 Brightness Mode

The menu '**Brightness** > **Brightness-Mode**' allows switching between different predefined and one user specified display settings. Under '**Brightness** > **Custom Settings**' the single parameters can be modified.

The predefined modes have following values:

Element	Description	High	Medium	Low
Display	normal display brightness	100%	60%	20%
Display Dim	dimmed display brightness	50%	20%	10%
Display Dim Timer	inactivity timer to dim the display	Off	20 sec.	5 sec.
Display Off Timer	inactivity timer to turn off the display	Off	Off	60 sec.
Keys	normal key brightness	100%	60%	20%
Keys Dim	dimmed key brightness	60%	20%	20%
Keys Dim Timer	inactivity timer to dim the keys	Off	20 sec.	20 sec.
Keys Off Timer	inactivity timer to turn off the keys	Off	Off	240 sec.
Call LED Dim	dimmed Call LED brightness	100%	40%	20%
Status LED Dim	dimmed Status LED brightness	100%	60%	20%

3.4.4 Profiles

A Profile is assigned to every Beltpack when it is registered. The profile contains default settings for the whole Beltpack-Config and user rights indicating which settings of the Beltpack-Config the Beltpacks user is allowed to see and/or to change.

Using the Admin or Registration PIN, a profile can be chosen in the Antennas Web Interface or in the Beltpack-Menu that should be assigned to all newly registered Beltpacks. The Beltpack stays associated to its profile as long as it is registered.

Changes to a profile in the web interface are immediately applied to all Beltpacks using the edited profile, regardless of the previous setting on the Beltpack. Note that only the changed profile settings (highlighted in blue) are applied to all Beltpacks using this profile, while all other settings on the Beltpacks remain unaffected. Some settings are grouped (e.g. Keys, Always-On, Rotaries functions, etc.), meaning they can only be edited together. For example, changing a single key in the Profile Configuration will re-apply the settings for all keys on all Beltpacks using this profile since all keys are in one group.

The profile of a Beltpack can be changed by the Beltpack-User in the Beltpack-Menu ("Change Profile"; if he has the right), by the Admin using the Web Interface or by (re-)registering the Beltpack while a different profile is selected to be used on all newly registered Beltpacks. A profile change means that a complete reset to the new profile defaults regarding the whole Beltpack-Config.

When a user chooses to load the same profile that the Beltpack already has, the Beltpack-Config is reset back to profile defaults. Should a Beltpack be (re-)registered using the same profile that it already has, nothing is changed (e.g. no changes in the Beltpack-Config).

3.4.5 Notification

In the menu '**General Settings** > **Notification**' is defined, how different events are signalized. It is possible to combine multiple signalization types.

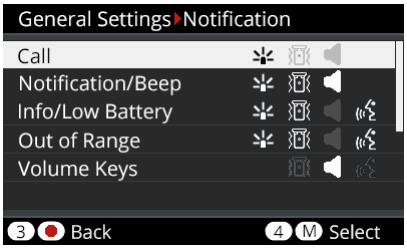


Figure 82: Notification

Events	Signalizations		
Call		**Light**	orange flashing Call LED
Notification/Beep		**Vibrate**	Vibration
Info/Low Battery		**Beep**	Signal sound
Out of Range		**Voice**	Voice announcement
Volume Keys			

3.4.6 Silent Mode

In the menu '**General Settings** > **Silent Mode**', the speaker and vibration can be disabled.

3.4.7 Display Mode

The menu '**General Settings** > **Display-Mode**' allows selecting between the standard view, a '**Flip**' and an '**Alternative**' view. The display modes can be combined.

The **Flip** mode flips the single rows in the display horizontally.
The **Alternative** mode displays the keys 5 and 6 in the middle.

	In all modes the font size is automatically reduced to fit long content into the fields.

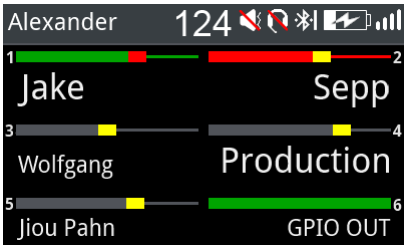


Figure 83: Standard

Figure 84: Standard Flip

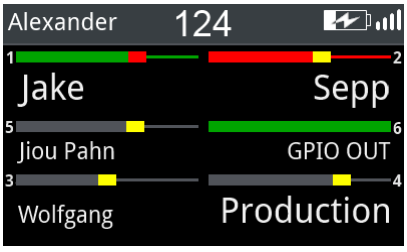


Figure 85: Alternative

Figure 86: Alternative Flip

3.4.8 Lock Keys

The menu '**General Settings** > **Lock-Keys**' allows locking the keys to prevent accidental key actions.

To unlock the keys:

1. If any key is pressed, the display shows '**Keys/rotaries locked. To start the unlock sequence, press the Menu key.**".
2. Once the menu key is pressed, the display shows "**Press Key 4 to unlock.**".
3. If key 4 is pressed during the timeout, the keys are unlocked. Otherwise the keys remain locked and the display returns to the Main-View.

3.4.9 Bluetooth

The Beltpack provides a Bluetooth 4.1 wireless connection, which is available even when no Antenna connection is available or the Beltpack is not registered.

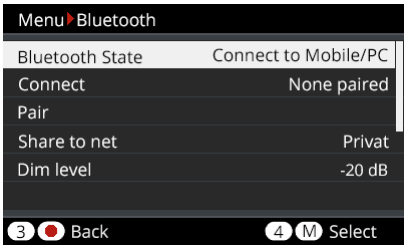


Figure 87: Bluetooth

The menu Bluetooth State allows defining the device to be paired (Headset or Mobile/PC).
After that the menu Pair / Discoverable allows pairing the desired device.

If the Beltpack is not connected to any device, the command **Connect** is displayed and allows establishing the connection to the paired device. If a connection is established, the command **Disconnect** is displayed.

After loosing the Bluetooth connection:

	Bluetooth State: Mobile/PC	**Bluetooth State: Headset**
Connection loss (out of range)	The last connection is *not* reestablished.	The last connection is reestablished.
Reboot of the Bluetooth device	The last connection is *not* reestablished.	
Reboot of the Beltpack	The last connection is reestablished.	

The Mobile/PC is able to force re-establishment via button press.
During Music or Telephone call, the title or Name or number is visible in Status line.

3.4.9.1 Bluetooth State

In the menu '**Bluetooth** > **Bluetooth State**' is selected, if the Beltpack should be connected to a Mobile/PC or to a headset.

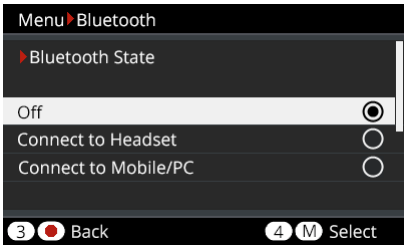


Figure 88: Bluetooth – Bluetooth State

Off	The Bluetooth functionality of the Beltpack is switched off.
Connect to Headset	The headset mode allows connecting a wireless Bluetooth headset to the Beltpack. In this mode the Bluetooth headset replaces the Beltpack's wired headset.
Connect to Mobile/PC	The Mobile/PC mode allows connecting a mobile device (mobile phone, tablet) or PC to the Beltpack. In this mode the Beltpack (including the wired headset) acts like a Bluetooth headset. The user is able to pick up a telephone call or skip forward to the next music track via the Beltpack user interface. A telephone call or music of the connected mobile phone is able to add to one or more channels of the Beltpack (Public) or is only hearable on the connected Beltpack (Local). • Telephone call audio quality (bidirectional): Standard (20 Hz ... 4 kHz) • Music audio quality (unidirectional): HQ (20 Hz ... 20 kHz)

The Line-Input is disabled in following conditions:
- "**Connect to Headset**" mode: If there is a connection to a headset established.
- "**Connect to Mobile/PC**" mode: While playing music.
  (When the music playback is stopped, the Line-Input is enabled again.
  The Line-Input remains active even during a telephone call.)

3.4.9.2 Pair

In the menu '**Bluetooth** > **Pair**' the pairing process between the Beltpack and a Bluetooth device can be started. After selecting this menu the Beltpack is visible as an audio device called "Bolero" for other Bluetooth devices. Discovered devices are listed in the display.

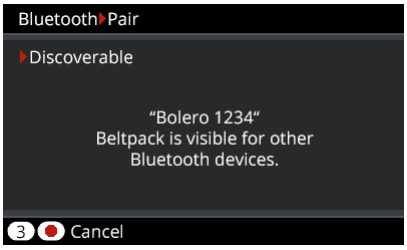


Figure 89: Bluetooth – Pair

Start the pairing process on the desired device. If a Mobile/PC is paired, confirm the generated PIN on this device. Confirm the PIN also on the Beltpack by pressing Key-4.

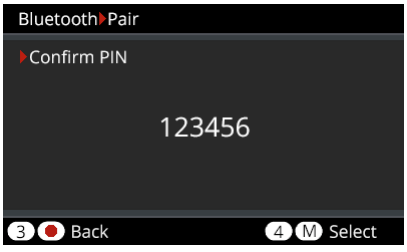


Figure 90: Bluetooth – Pair – Confirm

	Pairing a new device will overwrite the previous settings.

3.4.9.3 Share to Net

The telephone signal from the mobile phone can be either heard/talked-to locally or be relayed to a public/intercom channel. Therefore the user is able to share the audio signal from the Beltpack connected mobile device via an activated intercom conference (**Public**) or listen to the audio signal at the Beltpack (**Local**) only. The audio signal is mixed to all active keys (channels).

The **Public** mode is indicated by a yellow status bar.

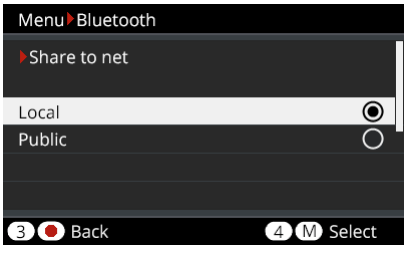


Figure 91: Share to net

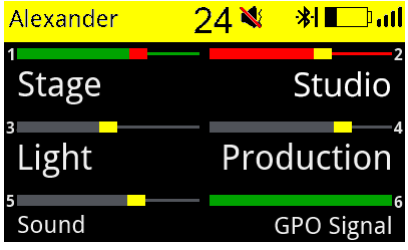


Figure 92: Public Mode enabled

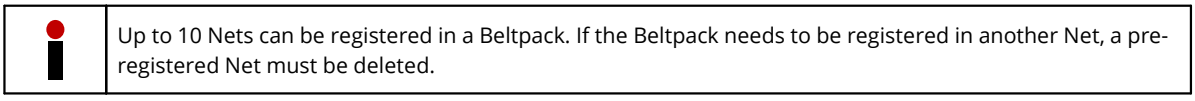
	In Public mode the Dim-Level function for the Beltpack device is disabled because the audio signal is part of the conference.

3.4.10 Add Beltpacks

Before a Beltpack can connect to a Bolero-Net, it has to be registered to it. Registration means, that the Bolero-Net knows the Beltpack, the Beltpack knows the Bolero-Net and an encryption key is generated to be used by both sides.

There are different ways to register a Beltpack to a Bolero Net:

Antenna OTA	Allows registering a Beltpack **O**ver **T**he **A**ir at an already registered Antenna via DECT (**D**igital **E**nhanced **C**ordless **T**elecommunications).
Antenna NFC	Allows registering a Beltpack at an already registered Antenna via NFC (**N**ear **F**ield **C**ommunication).
Beltpack NFC	Allows registering a Beltpack at an already registered Beltpack via NFC.



Up to 10 Nets can be registered in a Beltpack. If the Beltpack needs to be registered in another Net, a pre-registered Net must be deleted.

3.4.10.1 Antenna OTA

This registration mode allows registering a Beltpack at an already registered Antenna over the air (DECT).
Following steps are necessary to register a Beltpack via Antenna-OTA to a Bolero Net:

- At first the '**Registration Method (OTA)**' must be activated. This can be done in two ways:
  a) Via the Antennas web interface
  (see chapter 'Bolero Antenna > Features in Detail > Add Antennas').
  b) Via another Beltpack that is already registered in the Net:
  Menu '**Admin** > **Registration Mode** > **Over The Air** > **On**'.

	• This setting is system wide and stays active until disabled or the registration timeout runs out. • The registration timeout is restarted each time a Beltpack is registered.

- Then start the registration process in the Beltpack that should be connected to the Net:
  a) If the Beltpack is not registered to any Net, press and hold the '**Reply**' key for one second. The Beltpack starts automatically searching for available Nets.
  b) If the Beltpack is already connected to another Net, push the Beltpack's Menu key for >3 seconds (long key press), navigate to the menu '**Registration**' and select '**Register to net**'.

The Beltpack begins to search for available Nets and displays them one at a time.

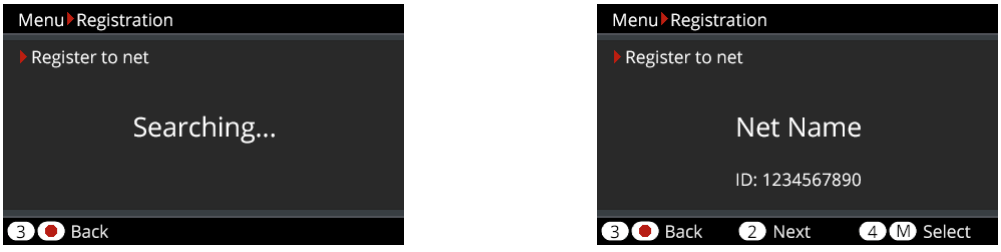


Figure 93: Net searching

- The Beltpack will continue to search until a Net is found or '**Back**' is pressed.
- If '**Back**' is pressed, the Beltpack will stop searching and return to the **Registration** menu.
- If '**Next**' is pressed, the current Net is blocked and the Beltpack will continue searching for other Nets. The blocking list is cleared by reentering the **Registration** menu.
- If '**Select**' is pressed, the user will be asked for the **OTA Registration PIN** that was defined via the Antennas Web-Interface or via the Beltpack where the registration mode was enabled (by default the **Admin PIN** is used).
- After registration, the Beltpacks are immediately connected to the Bolero net.

3.4.10.2 Antenna NFC

This registration mode allows registering a Beltpack at an already registered Antenna via NFC.
Following steps are necessary to register a Beltpack via Antenna-NFC contact point ( ) to a Bolero Net:

- At first the '**Registration Method (NFC)**' must be activated. This can be done in two ways:
  a) Via the Antennas web interface
  (see chapter 'Bolero Antenna > Features in Detail > Add Antennas').
  b) Via another Beltpack that is already registered in the Net:
  Menu '**Admin** > **Registration Mode** > **Antenna NFC** > **On**'.

	• This setting is system wide and stays active until disabled or the registration timeout runs out (timeout is the same as for OTA registration). • All Antenna-NFCs are switched to registration mode. • The Beltpack-NFCs of connected Beltpacks are NOT switched to registration mode.

- The Beltpacks to be registered have to be turned on; no other special setting or user intervention is required.
- Just hold the NFC contact point of the Beltpacks close to the NFC contact point of any Antenna. The Beltpacks will be registered to the same net that the Antenna belongs to.
- After registration, the Beltpacks will immediately connect to the Bolero net.

3.4.10.3 Beltpack NFC

This registration mode allows registering a Beltpack at an already registered Beltpack via NFC.
Following steps are necessary to register a Beltpack via Beltpack-NFC contact point ( ) to a Bolero Net:

At first the Registration Method '**Local Beltpack NFC**' must be activated at the already registered Beltpack ('Master'-Beltpack):

- Push the 'Master'-Beltpack's Menu key for >3 seconds (long key press).
- Navigate to the '**Admin**' menu.
- Enter the '**Admin PIN**' of the net.
- Select '**Registration Mode**' > '**Local Beltpack NFC**'.

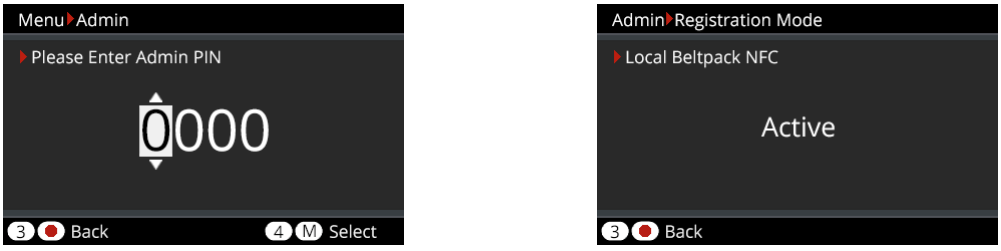


Figure 94: Registration Mode 'Local Beltpack NFC'

- The Beltpacks to be registered have to be turned on; no other special setting or user intervention is required.
- Just hold the NFC contact point of other Beltpacks close to the NFC contact point of the 'Master'-Beltpack. These Beltpacks will be registered to the same net that the 'Master'-Beltpack belongs to.
- After registration, the Beltpacks will immediately connect to the Bolero net.

	• The 'Master'-Beltpack stays in the registration mode until the user leaves the menu or the 'Master'-Beltpack is disconnected (there is no timeout).

3.4.11 Remove Beltpacks

To de-register a Beltpack from a Net, choose the Menu '**Registration** > **Delete pre-registered Net**'.

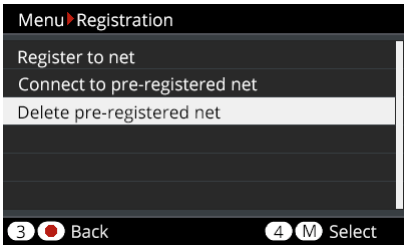


Figure 95: De-Registration

Select the Net to be removed from the list and confirm the de-registration by pressing Key-4.
If the Beltpack is connected to this Net, it will be immediately disconnected.

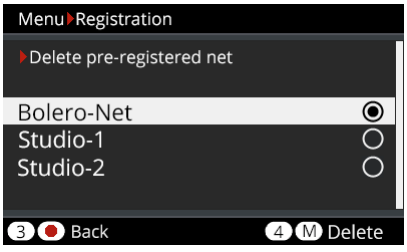


Figure 96: Delete pre-registered net

	The De-Registration is also possible via the Antennas web interface (see chapter '**Bolero Antenna** > **Features in Detail** > **Remove Devices** > Beltpacks'.

3.4.12 Walk-Test

The Walk-Tests (Pro) lets the user analyze the signal quality to the visible Antennas.

This function is started in the Beltpack Menu '**Service** > **Test** > **Walk Test (Pro)**'.

New in 2.0

While walking through the Beltpacks' operation area, the display shows the current radio levels of all visible Antennas. The active Antenna is highlighted. When using the Walk Test or Walk Test Pro screens on a Beltpack, the normal keys (1-6) and both rotaries retain the same functionality as on the Main View. That means calls can be initiated or stopped by pressing the keys, volumes can be changed using the rotaries, etc., with the screen showing the Walk Test or Walk Test Pro data all the while. The only exception is the Reply key, which is used to exit the Walk Test or Walk Test Pro screens and thus does not have the same function as on the Main View.

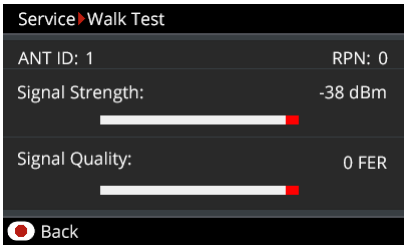


Figure 97: Walk Test

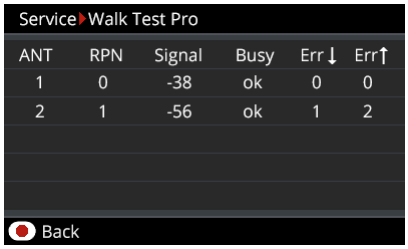


Figure 98: Walk Test Pro

ANT	Antenna ID number.
RPN	Unique number defined in DECT for the Antenna.
Signal	Average number of receive signal strength. The value may vary due to fading.
Busy	Shows if the Antenna is full occupied by Beltpacks.
Error (downlink)	Average number of detected errors in the link from the Antenna to the Beltpack (e.g. sync error or CRC).
Error (uplink)	Average number of detected errors in the link from Beltpack to Antenna.
Phase	Phase difference from the Antenna, the Beltpack is connected to, and a secondary Antenna. This number has to be below ±2. If it is outside this range, the clock in the network is not in sync. In this case, handover will not be possible as the Beltpack cannot see other Antennas anymore. The Beltpack clock is always synchronized to the clock of the connected Antenna.

3.4.13 Reset

The Beltpack-Menu '**Service** > **Reset**' offers two different ways to reset the Beltpack to factory default settings.

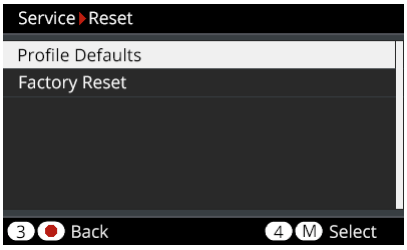


Figure 99: Beltpack menu – Reset

Profile Defaults

This resets the Beltpacks' Profile data the current default settings of the net.
All registration data stays in memory.

Factory Reset

This resets all data and settings to factory default.
All Net lists and registrations data will be deleted.

3.4.14 Opening the USB rubber cover

The USB rubber cover yields protection against ingressing dirt and water inside the Beltpack.
The rubber cover can be removed as follows:

- Turn the Beltpack's rear side upwards.
- Push your fingernail gently in the slit on the top of the rubber cover...
- and pull the rubber cover out of the Beltpack's connectors.
- Take care to seal the Beltpack when the connectors are not in use.

Figure 100: Insert fingernail

Figure 101: Pull rubber cover

3.4.15 Battery

Light and powerful custom lithium rechargeable battery packs are used to operate the Beltpacks.
Batteries can be charged in following ways:

- Beltpack (with battery) in the Bolero-Charger
- Battery (separate, without Beltpack) in the Bolero-Charger
- Beltpack (with battery) via USB device (USB plug power supply, PC/Laptop, etc.)

The charging characteristic depends on the ambient temperature and the Charger:

Temperature		Display	Bolero-Charger	USB device
<0°C	<32°F	too cold !	no charging	
0°...10°C	32°...50°F	cold	gentle charging 1.00 A / 4.06 V	gentle charging 0.50 A / 4.06V
10°...45°C	50°...113°F	normal	normal charging 1.50 A / 4.20 V	normal charging 0.50 A / 4.20 V
45°...60°C	113°...140°F	warm	gentle charging 1.50 A / 4.06 V	gentle charging 0.50 A / 4.06V
>60°C	>140°F	too hot !	no charging	

3.4.15.1 Charging via USB in the Beltpack

- Connect the Beltpack with an USB power supply or an USB connector that has a minimum current supply of 500mA.

During charging the Beltpack is still operable. The main screen shows in the top right the charge icon:

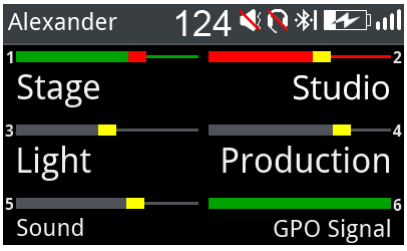


Figure 102: USB Charging view

More information is displayed in the Beltpack Menu '**Service** > **Information** > **Battery**':

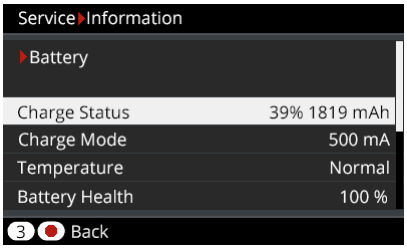
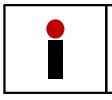


Figure 103: Charging information in the Beltpack menu

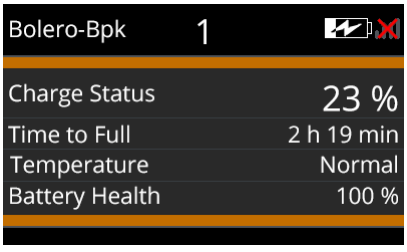
3.4.15.2 Charging in the Charger

- Plug the Beltpack or just the battery itself in an empty position in the Charger.

	The radio is switched off when the Beltpack is plugged into the Charger.

- The charging procedure will start automatically.

- The Beltpack's display and the corresponding Slot LED indicate the current charging state.



For further information refer chapter Bolero Charger.

3.4.15.3 Replacing the Battery

The Beltpack battery can be replaced by following these steps:

- Pull the battery release button upwards...
- and push the battery at the belt clip to the bottom side of the Beltpack.
- Lift the battery upwards.
- Insert the battery in the opposite order.

Figure 104: Pull release button

Figure 105: Push battery

Figure 106: Lift battery

3.4.15.4 Removing the Belt Clip

The belt clip can be removed by following these steps:

- Pull the lock clip upwards...
- and push the belt clip to the top side of the battery.
- Insert the belt clip in the opposite order.

Figure 107: Pull lock clip

Figure 108: Push belt clip

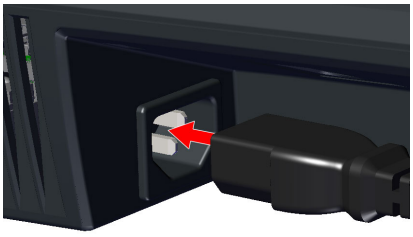
3.4.16 Firmware Update

This chapter describes the update procedure of Bolero Beltpacks. The following devices are required:

- ✓ Bolero-Charger
- ✓ USB pen drive (Type A or Type C)
- ✓ Beltpack firmware package (for example "Bolero_v2.0.x.package")
- ✓ Bolero-Beltpacks to be updated

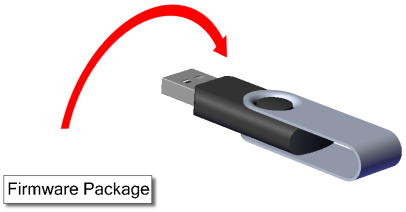
It is possible to update the firmware of up to five Beltpacks simultaneously in one Bolero-Charger.

- Connect the Charger to mains.



- Copy the new firmware package to the root directory of a USB pen drive.

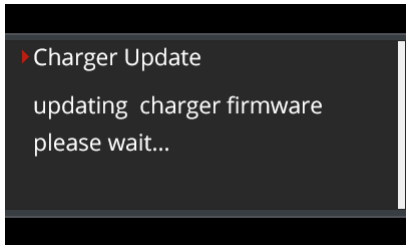
i	Only one package is allowed to be stored in the root directory.



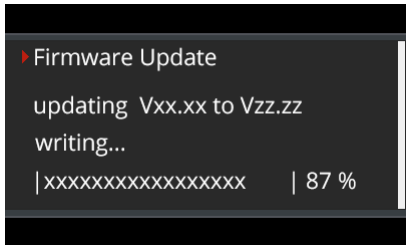
- Put the Beltpack(s) into the charging slots.
- Take care that the USB rubber cover is not pulled out.
- The charging process is independent of the update procedure.

- Plug the pen drive into the respective USB slot (type A or type C) on the front side of the Charger.

- At first, the **Charger**'s firmware will be updated.
- During this process the Charger's Status-LED will blink green and the Charger will be restarted.
- The current process will be also displayed on the Beltpacks' display.

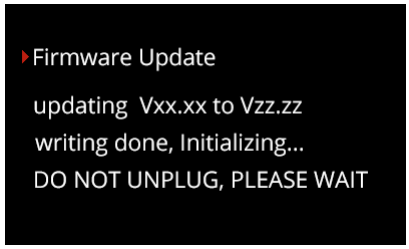


- Then, the **Beltpack**s' firmware will be updated.
- During this process the Beltpack will show the current '**(Vxx.xx)**' and the new '**(Vzz.zz)**' firmware version.
- Furthermore the current process (pending, starting, erasing, writing and verifying) and a progress bar will be displayed.

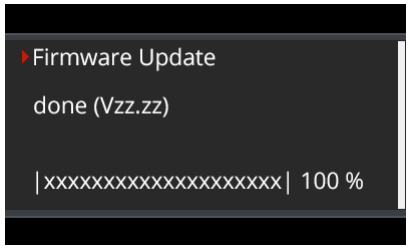


- Finally the Beltpack will be initialized, restarted and finalized.

Caution: Do not remove the Beltpacks from the charging slots during this process.



- After terminating the update process, the Beltpack will show '**done**' and the new firmware version '**(Vzz.zz)**'.



	The order of plugging the Beltpacks and the USB stick doesn't matter.

The Beltpacks are charged simultaneously while updating.
The update procedure takes around 8-10 minutes for one Beltpack and around 40 minutes for five Beltpacks. It may happen that a Bluetooth update starts after removing the Beltpack from the charging slot. This will take a few minutes.

3.5 Technical Drawing

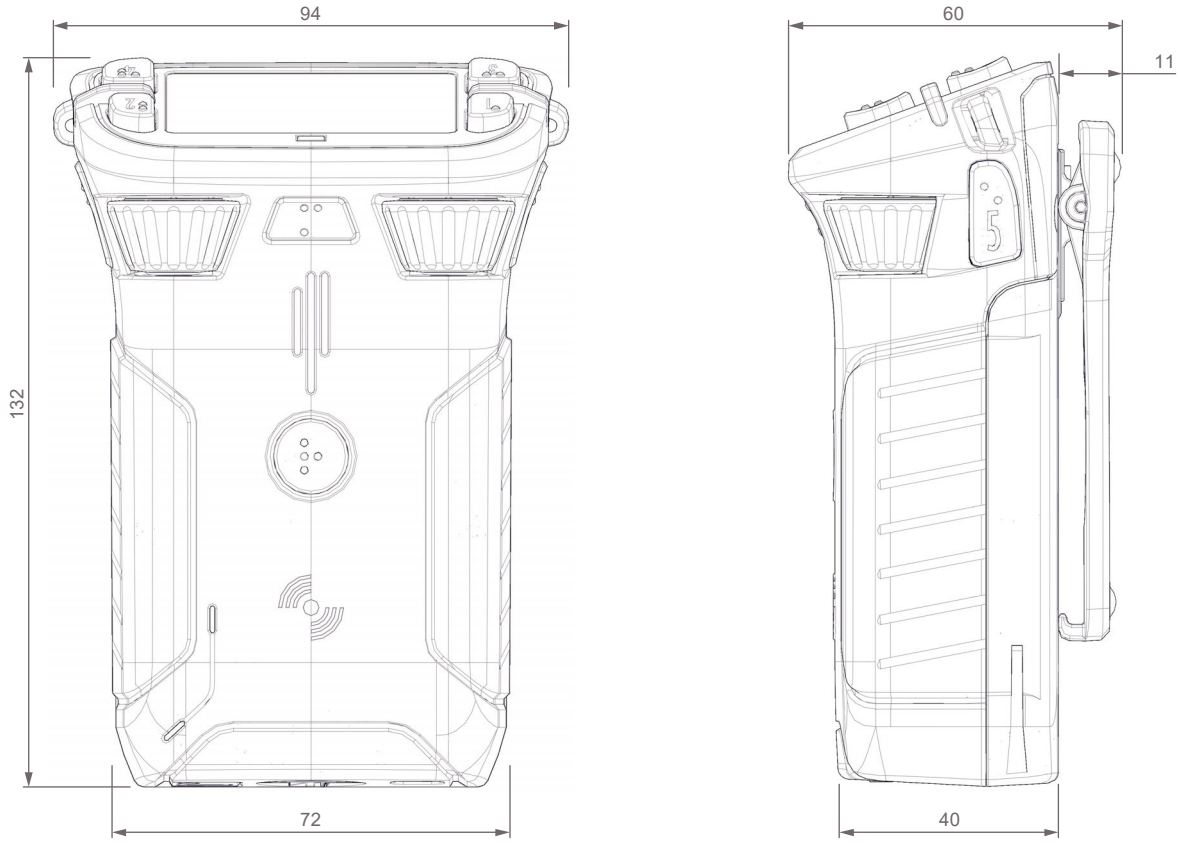


figure 109: Beltpack (front, right), dimensions in millimeter

3.6 Technical Specifications

Beltpack Product Code	BL-BPK-1006-19	
Multi-path delay spread protection	Yes, ADR (Advanced DECT Receiver)	
Audio Bandwidth	200 Hz ... 7 KHz (-3dB)	
Mode of Operation	Full-duplex on all routes	
Encryption	AES256 Bit encryption	
Line in	3.5 mm jack, 40 Hz ... 20 kHz, max. +12 dBu input level (local audio mix only)	
Talk Controls	4x push buttons + 1x reply key + 2x walkie-talkie keys (PTT, Latching & Auto mode)	
Volume / Level Controls	2x Master or slave + menu navigation	
Display	High contrast sunlight readable full color LCD	
Audio prompts	Out of range, Bluetooth connected / disconnected, battery low, volume change, Beltpack registered / deregistered / not connected	
No. of Full-Duplex Audio Paths	6 with individual level control	
Handheld Operation	Walkie-talkie mode	
Vibrate Module	Vibrate indicates incoming call or silent call is active, low battery, out of range, Beltpack registration, power on/off	
Internal Loudspeaker	Freq. <500Hz ... >7kHz 80dB/SPL/0.5W/1m, @ <5% THD	
Remote Health Monitoring	Battery charge status, via web browser	
Battery	Lithium Ion external removable battery pack with user removable clip	
USB Type-C Connection	USB 2.0 for Beltpack charging and firmware update	
Operation Time	~17 hours typical	
Headset Connector	4-pin male XLR, user replaceable	
Microphone Type	Electret (~5V bias voltage) or dynamic, user selectable or automatic	
Side-tone and microphone gain	Individually adjustable for each Beltpack & via remote control	
Bluetooth	V4.1 (HSF – hands free profile, A2DP – streaming profile)	
Bluetooth phone call mix into intercom	Yes	
Lanyard anchor points	Yes	
Dimensions	Width	86 mm / 3.4"
	Height	130 mm / 5.1"
	Depth	48 mm / 1.9"
Weight	420 g (incl. battery and clip)	
Environmental	IP65 sealing: dust tight + water jet from all angles	
Operating Environment	Temperature	-10° ... +55°C
	Humidity	0 % ... 90 % rel. (non-condensing), Ta=40°C
Storage Temperature	-20° ... +50°C (long term) / -20° ... +60°C (short term)	

4 Bolero Antenna

When used with Artist, Bolero active Antennas run over a standard AES67 IP network. Up to 100 Antennas and 100 Beltpacks are able to connect to a system. The intelligent and highly efficient use of bandwidth results in 10 Beltpacks per Antenna. The decentralized Antennas allow the use of existing standard structured cabling and provide a wide area between the Antennas connected to AES67 capable switches and the Artist frames equipped with AES67 client cards. This provides a fully integrated point-to-point roaming intercom ecosystem. The more decentralized Antennas added, the more robust the network becomes. The Antenna is powered via Power-over-Ethernet (PoE+), simplifying installations by eliminating local power supplies or alternatively via a separate DC supply.

When used in Standalone Application, Antennas can be used individually, in a ring structure, or daisy-chained as the situation demands. Also, up to 100 Antennas and 100 Beltpacks can be integrated into a single system. These Antennas can be placed up to 300 meters apart and up to five can be powered via the CAT5 network using a new external PSU. The system is quickly and easily configured over the IP connection using a web browser. Finally, a throw-down box can be used to interface the standalone Bolero with other intercom systems via 4-wire.

	To prevent transmitting in a prohibited frequency range, the radio is switched off in Antennas that are configured to destinations outside Europe. The radio must be only switched on in the destination country.

4.1 Operating Elements

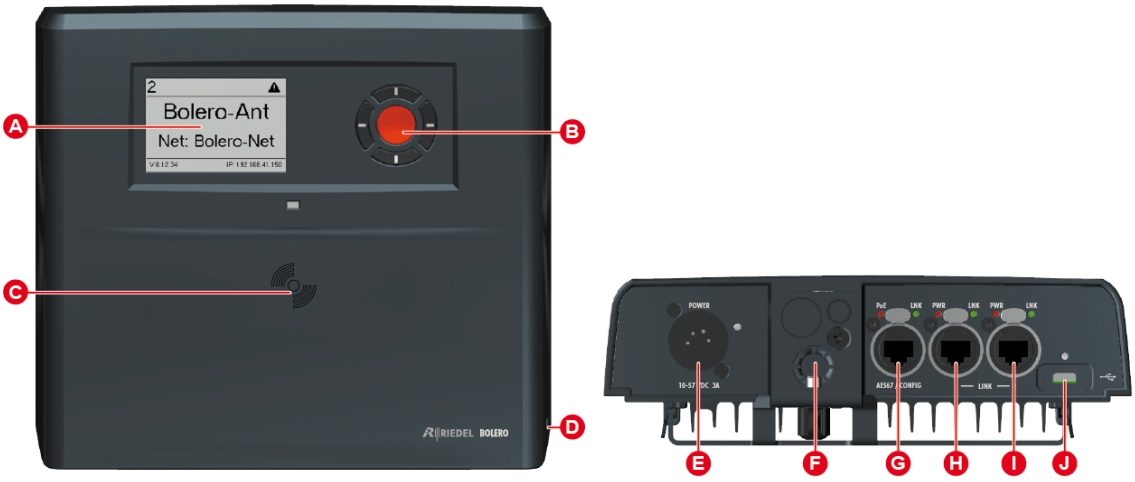


Figure 110: Antenna Operating Elements (front, bottom)

A	E-ink display
B	Navigation buttons (cursor and menu button)
C	NFC contact point
D	Kensington Security Slot
E	DC power supply connector (XLR-4)
F	Mounting element (spigot, 3/8" & 5/8" microphone stand mounting)
G	AES67/Config connector (RJ45, 1GBit)
H	LINK connector 1 (RJ45)
I	LINK connector 2 (RJ45)
J	USB connector (USB Type-C)

XLR-4 (male)

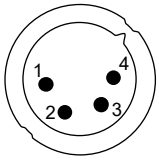


Figure 111: XLR-4 male

Pin	Description
1	-PWR
2	Chassis
3	Data
4	+PWR (10...57 VDC / 3 A)

The length of the DC power cable should not exceed 1.5 meters.

RJ45

Pin	AES67/Config	LINK 1+2
1	D1+ / PoE+ (p)	D1+
2	D1- / PoE+ (p)	D1-
3	D2+ / PoE+ (n)	D2+
4	D3+ / PoE+ (p)	D3+
5	D3- / PoE+ (p)	D3-
6	D2- / PoE+ (n)	D2-
7	D4+ / PoE+ (n)	D4+
8	D4- / PoE+ (n)	D4-

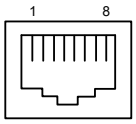


Figure 112: RJ45

1Gbit Ethernet connection is necessary to operate the Bolero net.

Integrated/Artist Mode

- The AES67/Config port is connected to the IP net which also hosts the Artist card.
- The other two ports are not used. If they are connected anyway, an error will be issued and radio transmission will be disabled.

Standalone/Link Mode

- The AES67/Config port is primarily used as config port, i.e. to provide a connection to the Web-UI.
- One can also directly attach up to two IO Devices (NSA-002A) to this port in a daisy chain as well.
- Link-1 and Link-2 are used to interconnect the Antennas in a daisy chain ("open") or ring ("closed") topology.
  - A closed topology provides redundancy:
    either **one** cable in the ring can be detached without interrupting audio transmission.
  - In an open topology there's no more redundancy:
    if a cable is detached, the affected nodes cannot be reached any more.
- Link-1 on the local device must always be connected to Link-2 on the remote device (and vice versa).
- CAT cables with a maximum length of 300 meters are supported.
- With an External Power Supply (EPS), you can power up to 2 Antennas over Link-1 and Link-2 each (i.e. 4 Antennas in total).
- It is not possible to use routers, switches or other standard IP devices.

	Cable requirements: Cat-5e / Cat-6 or better (according to ISO/IEC 11801), S/FTP or better, up to 100 m. Make sure ISO/IEC specification applies for the used length of the cable (in particular attenuation).

USB Type-C

Pin	Description	Pin	Description
1	GND	7	Dn1
2	SSTXp1	8	SBU1
3	SSTXn1	9	VBUS
4	VBUS	10	SSRXn2
5	CC1	11	SSRXp2
6	Dp1	12	GND

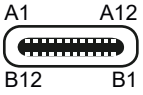


Figure 113: USB Type-C

4.2 Status LEDs

Figure 114: Antenna – Status LEDs (front, bottom)

1 **Status**	***off***	not powered
	green	Antenna in operation (radio enabled)
	orange	Antenna in operation (radio disabled)
	orange blinking	Antenna is powering up
	red blinking	Antenna is powering down / firmware not running
2 **Power**	***off***	no XLR input power
	green	XLR input power ok
3 **AES67-PoE**	***off***	no PoE+ input power
	green	PoE+ input power ok
4 **AES67-LNK**	***off***	no Ethernet connection present
	green	Ethernet link ok
5, 7 **LINK-PWR**	***off***	No remote power (neither outgoing nor incoming).
	orange	Remote power is provided to power other Antennas (outgoing power).
	green	The Antenna uses remote power as main power-supply (incoming power).
6, 8 **LINK-LNK**	***off***	no LINK connection present
	green blinking	LINK connection ok
	orange	Authentication denied: This occurs when protocol versions of the connected Antennas do not match. It is required to run the same firmware version on all devices.
	orange blinking	Linkup is pending: Another network space is connected to the Antenna. You can choose to join the local and remote nets.
	red	LINK connection failure: A link has been connected to the same link on another Antenna. (E.g. local Link 1 → remote Link 1). Notice that Link 1 must always be connected to Link 2 (and vice versa) on the remote node.
	red blinking	The connected Antennas do not run the same firmware version.
9 **USB**	***off***	no USB input power
	green	USB input power ok
	red	USB input power out of range

4.3 Basic Operation

4.3.1 StartUp

The Antenna starts automatically after it is attached to power. Either with a separate power supply or via a switch including PoE+ functionality.
The Main-View appears after booting and is showing following information:

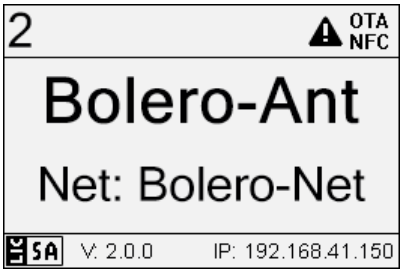


Figure 115: Main-View

Header	unique ID of the Antenna	2
	Warning symbol (optional)	⚠
	Registration mode	OTA/NFC
Main area	Name of the Antenna	Bolero-Ant
	Name of the Net	Net: Bolero-Net
Footer	Installed License (Standalone)	SA
	Firmware version of the Antenna	V: 2.0.0
	IP address of the Antenna	IP: 192.168.41.150

4.3.2 Key Functions

The five buttons right beside the display allows displaying system information or editing basic settings.
Press any key to enter the Main Menu. The general key functions are as follows:

	• Select the previous menu item • Increase values
	• Select the next menu item • Decrease values
	• Back to parent menu item • Move selection to the left
	• Move selection to the right
	• Enter selected menu item

4.3.3 Main Menu

The Main-Menu is opened by pressing any key.

In the Main-Menu information are displayed and basic settings can be modified.
The Main-Menu contains following entries:

IP Settings	**Mode** [*1]	Allows setting the mode of IP address: **Static**, **DHCP**, **Auto IP**	
	IP	Allows setting the IP4.0 address.	If the Mode is set to **Static**.
	Netmask	Allows setting the IP4.0 netmask.	
	Gateway	Allows setting the IP4.0 gateway.	
Node Settings	**Name**	Antenna Name (12 characters)	
	User ID	Unique device number (3 digits)	
	Leave Net [*1]	De-registration of the Antenna from the current Net.	
Information	**Status/Warning**	Displays states and warnings: -> Step through all system errors & warnings	
	System	Displays a table with System information. Following values are displayed: • Firmware Version: V **x.x.x** • AAFP (Antenna) Serial number: (**13 digits**) • Main Version: V**x.x.x** • Radio Version: V**x.x.x** • Display Version: V**x.x.x** • Power Version: V**x.x.x**	
	Radio	Displays a table with radio information. Following values are displayed: • DECT active: **YES/NO** • Local connected Beltpacks: **xx** • System wide connected Beltpacks: **xx** • Registered Beltpacks: **xx** • Area: **Europe**, **US/Canada**, **South America**, **Brazil**, **Japan**	
Factory Reset [*2]	• Resets the Antenna to factory default settings. • All Data will be deleted!		

[*1] Admin PIN necessary
[*2] Factory Reset PIN necessary (please consult Riedel Service)

4.4 Web Interface

The Web Interface is opened by entering the IP address of the respective Antenna (e.g. 192.168.41.150).

Basic information is displayed and settings can be modified in the Web Interface.

	The user must be logged in the Net to be able to change settings (see chapter Login/Logout).

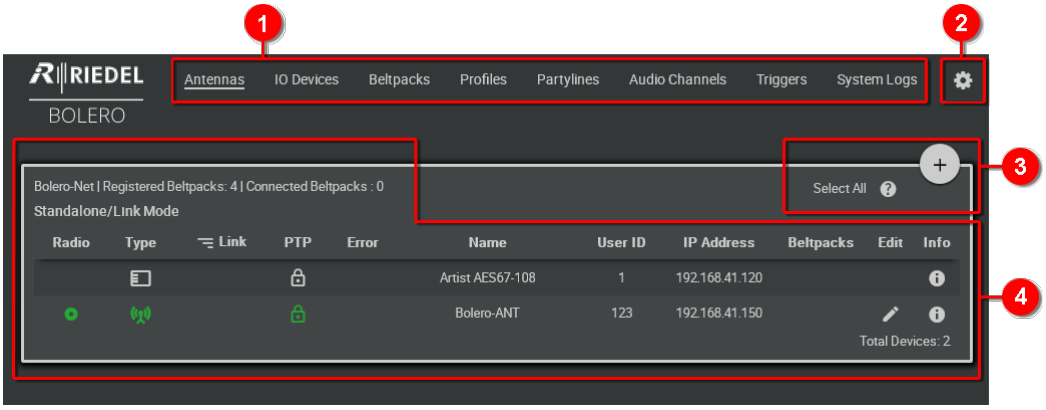


Figure 116: Antenna – Web-Interface (example: Standalone/Link mode)

The web interface is splitted in following regions:

1	**Page Selection** The selected page is underlined.	
	Antennas	Basic setup of the Bolero-Net and settings of Antennas and AES67 cards.
	IO Devices SA	Settings of inputs and outputs of NSAs those are included in the Bolero-Net.
	Beltpacks	Settings of Beltpacks.
	Profiles	Definition and maintenance of Beltpack profiles.
	Partylines SA	Creation and maintenance of Partylines.
	Audio Channels SA	Settings of audio channels of NSAs those are included in the Bolero-Net.
	Triggers SA	Settings of GPIs of NSAs those are included in the Bolero-Net.
	System Logs	Listing of system errors and events.
2	**Settings**	
	Save Net Config *1	Function to backup the configuration of the complete Net.
	Upload Net Config *1	Function to recall a previous stored configuration.
	Firmware Manager	Function to update the firmware of the devices.
	License Manager	Function to license the Antennas.
	Diagnostics File Export	The diagnostics view allows exporting internal diagnostic information. This data is used by Riedel service to analyze the system.
	Network Service	Function to change the DECT-frequencies. Only valid for Riedel service.
	Factory Reset *1	Function to reset all devices within the Bolero-Net.
	Logout *2	Log off the current user.
3	**Basic Functions** These functions are identically in all views.	
	Select All **Button**	Selects (deselects) all devices.
	Help button	Opens brief description of the current user interface.
	Lock symbol *1	Clicking this button opens the Login dialog.
	Action Button *2	Clicking the action button offers different features in the current view. The dialog can be closed by pressing the ESC key or by clicking on another region in the window.
4	**Content** In this region the content of the selected page is displayed. • Entries in the tables can be sorted by clicking on the desired column header. The order is indicated by symbols ( ) in the respective column. • Clicking on an entry will select/deselect the respective item. A selected entry is highlighted.	

*1 if *no* user is logged in
*2 if a user is logged in
SA if **System Mode** = **Standalone/Link**

4.4.1 Login/Logout

To be able to modify system settings, the user must be logged into the respective Net.
A big plus symbol is displayed in the top right of a Net if the user is logged in.
If no user is logged in, a lock symbol is displayed instead.

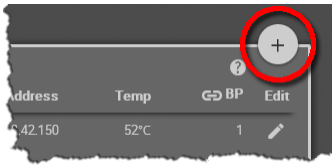


Figure 117: User logged in

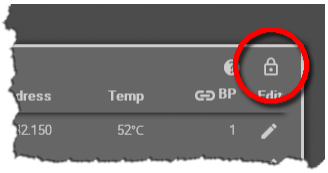


Figure 118: User logged out

Login

Click on the symbol to log into the system.
A dialog is opened to enter the Net's **Admin-PIN**.

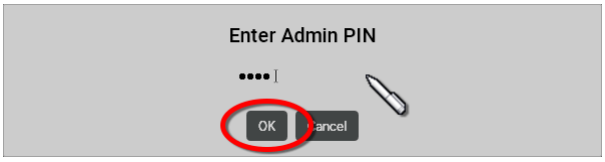


Figure 119: Dialog – Enter Admin PIN

Logout

Click on the symbol to open a window on the right side. Click on **Logout** to open the dialog for confirmation.
Click on **OK** to log out of the system.

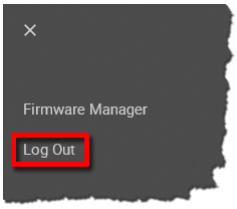


Figure 120: Logout function

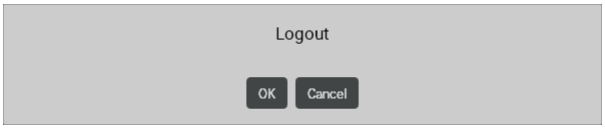


Figure 121: Logout confirmation

4.4.2 Antennas

The **Net / Antenna** window displays the active Network Space.
The name of the Net is displayed in the top left of the content region (e.g. "**Bolero-Net**").

The network space is one or a collection of Bolero Antennas. These Antennas are working together to provide increased coverage or capacity for Bolero Beltpacks. If this network is connected to an Artist Matrix Intercom, a number of Artist AES67 client cards are also included in the network space.
An active network space is the network space to which the web browser is actually connected to. You are able to monitor and configure all devices within this Bolero network space. The IP address in the web browser URL bar is one of the Bolero Antennas' IP address in this network space. The green Antenna icon shows to which Antenna your web browser is connected to.

The **Net / Antenna** window features following functions:

- Displaying a list of all (currently online) devices belonging to the same net.
- Creating Nets
- Assigning Bolero Antennas / Artist AES67 cards to Nets
- General settings of Nets
- Defining the registration method of Beltpacks

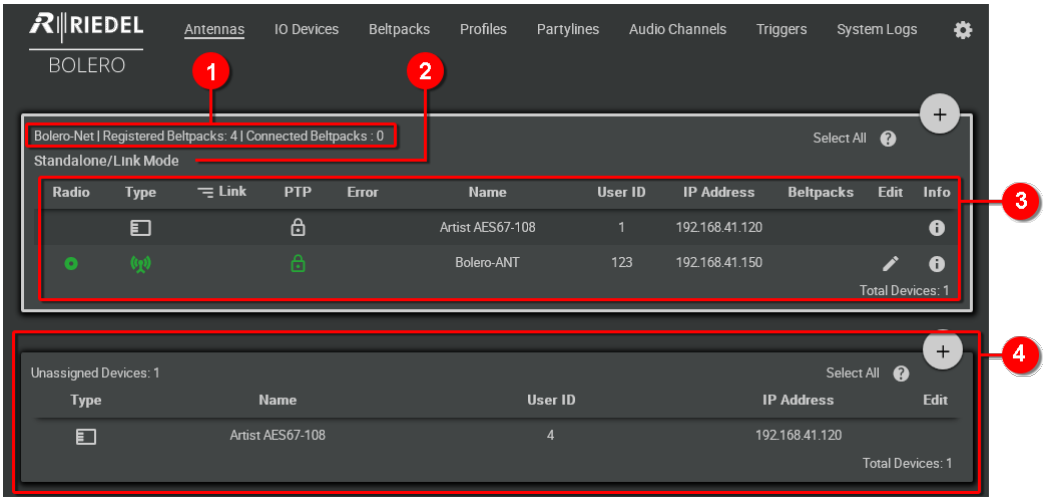


Figure 122: Web-Interface – Net / Antenna

1	• **Name of the Network Space** • **Number of registered Beltpacks** • **Number of connected Beltpacks**		
2	**Operation Mode**	Shows the operation mode of the system: **Integrated/Artist** or **Standalone/Link**.	
3	**Assigned Devices** Table of devices that are assigned to the Network Space		
	Radio	Indicates the state of the DECT radio. If green, the DECT radio is active. If the symbol is a ring rather than a dot, the device is DECT master.	
	Type	Depicts the device type. If green, the web-browser is currently connected to this device.	Antenna  AES67 card 
	Link	Indicates a connection to another Antenna on Link 1 (left arrows) or Link 2 (right arrows). If green, the device is sync-master (for standalone mode). If orange, a remote net is connected and waiting to be merged (by clicking the arrow).	
		The power-icon indicates that the link is providing remote power for other devices.	
		Standalone Mode: In case the Sync-Master-Priority is changed from its default Normal (N) to any other value, this is shown between the link indication arrows.	- 1 2 3
	PTP *	This icon indicates that PTP is locked and valid. If green, the current device is PTP master. Red indicates invalid / unlocked PTP.	
	Error	Shows device problems.	
	Name	Shows the name of the device.	
	User ID	Shows the unique ID of the device.	
	IP Address	Shows the IP address of the device.	
	Beltpacks	Shows the amount of registered Beltpacks at the Antenna.	
	Edit	Button to edit the Antenna settings.	
	Info	Opens a brief information of the respective device.	
	Total Devices	Shows the number of total devices within the Net.	
4	**Unassigned Devices** Table of devices that are not assigned to a Network Space. The content is identically to the table above.		

* '**Integrated/Artist**' mode only

4.4.2.1 Action Button (Antennas)

Clicking the + action button offers different functions depending on the devices assignment state.
The dialog can be closed by pressing the ESC key.

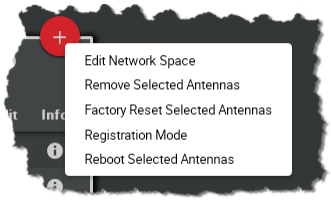


Figure 123: Action Button (Antennas, assigned devices)

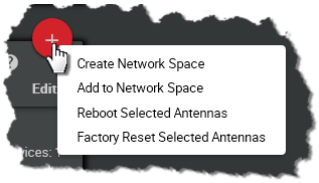


Figure 124: Action Button (Antennas, unassigned devices)

Create Network Space

Function in the region **Unassigned Devices** to create a new Network Space with the previous selected devices.

Name	Name of the Bolero Net (Network-Space).
System Mode	Defines at Antennas if the Net is operated standalone (**Standalone/Link**) or if the Net is connected to an **Artist** system (**Integrated/Artist**). The standalone mode requires a licensed Antenna (see chapter License Manager).
Admin PIN	Defines the admin PIN that is required to log into the Network Space (see chapter Login/Logout).

Add Network Space

Function in the region **Unassigned Devices** that allows adding devices to an existing new Network Space.
The devices to be added must be selected previously.

Select Network Space	Selection of an existing Bolero Net. The previously selected devices are added to the Network Space without confirmation.

Edit Network Space

Change general settings of the Network Space (e.g. name, admin pin, radio power level, PTP, ...).

General Settings	**System Mode**	Defines if the Net is operated standalone (**Standalone/Link**) or if the Net is connected to an **Artist** system (**Integrated/Artist**). The standalone mode requires a licensed Antenna (see chapter License Manager).
	Name	Name of the Bolero Net.
	Multicast IP	IP address for the communication between the Bolero Net and the Artist system.
	Admin PIN	Defines the admin PIN (is required to log into the system, see chapter Login/Logout).
	RF Strength Level	Selection of the radio power (**Normal**, **Low**, **Ultralow**).
	Enable Network Space RF	Enabling/Disabling the radio of the Antenna.
	PTP Domain	Selection of the PTP domain (0 ... 127, default: 0). Connected Artist client cards have to use the same domain.
	PTP Hybrid Mode *1	Allows more efficient PTP communication. Note that all connected Artist client cards and external PTP devices (e.g. the grandmaster) have to be set to the same PTP mode to work correctly.
	PTP Slave Only *1	Forces the Bolero Net to use an external grandmaster. Note: The system will not work if no external master is present.

Time Settings	**Date Format**	Selection of the date format (**ddmmyyyy**, **mmddyyyy**, **yyyymmdd**).
	Time Format	Selection of the time format (**12h**, **24h**).
	Time Source	Selection of the system time source (**Internal**, **PTP**, **NTP**).
	Internal Time/Date *2	Field to enter time and date manually.
	NTP Server *3	Field to enter the IP address of the NTP server.
	Offset *3	Field to change the time zone.

*1 if **System Mode** = **Integrated/Artist**
*2 if **Time-Source** = **Internal**
*3 if **Time-Source** = **NTP**

Remove Selected Antennas

Execute this command to remove one or more selected Antennas from the network space.
A dialog is opened to confirm the action.

Factory Reset Selected Antennas

Reset one or more selected Antennas to factory default values. To reset also the IP settings, the button '**Clear IP Settings**' must be enabled. Attention: Antennas are removed from the network!
A dialog is opened to confirm the action.
This action requires the "Factory Reset PIN". Please consult the Riedel Service in case of need.

Registration Mode

In this view the Beltpack registration settings can be changed and activated.

Registration Method	**OTA**	If enabled, Beltpacks are allowed to register via DECT radio to this Net.
	NFC	If enabled, Beltpacks are allowed to register via Antenna NFC to this Net.
Use Admin PIN for OTA Registration	If enabled, the *Admin PIN* must be entered in the Beltpack during the registration procedure. If disabled, another field is visible to define an '**OTA Registration PIN**' that must be entered in the Beltpack during the registration procedure.	
Profile	Selection of the profile, that will be assigned to a new registered Beltpack.	
Enable Timeout	If enabled, the registration to this Net will be disabled after a defined timeout.	
Timeout	Timeout in minutes to disable the registration to this Net.	

Reboot Selected Antennas

Execute this command to reboot one or more selected Antennas.
A dialog is opened to confirm the action.

4.4.2.2 Edit (Antennas)

Clicking the Edit symbol opens a dialog to edit Antenna (device) settings.
The dialog can be closed by pressing the ESC key without saving any changes.

Apply	Stores all changes.
Cancel	Discards all changes.

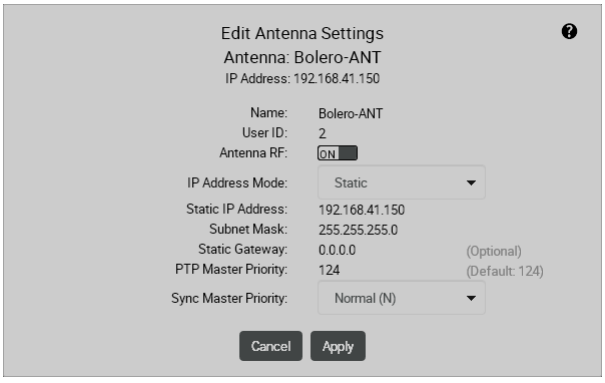


Figure 125: Edit (Antennas)

Name	Name of the Antenna.
User ID	Unique ID of the Antenna.
Antenna RF	Enabling/Disabling the radio of the Antenna.
IP Address Mode	Selection of the IP address mode (**Auto**, **DHCP**, **Static**).
Static IP Address *1	Fixed IP address of the Antenna.
Subnet Mask *1	Fixed subnet mask of the Antenna.
Static Gateway *1	Fixed Gateway of the Antenna.
PTP Master Priority	Selection of the PTP priority (default: 124).
Sync Master Priority SA	Defines the priority of a node becoming sync master for the entire system.

*1 if **IP Address Mode** = **Static**
SA '**Standalone/Link**' mode only

4.4.2.3 Info (Antennas)

Clicking the Info symbol shows information of the respective device.

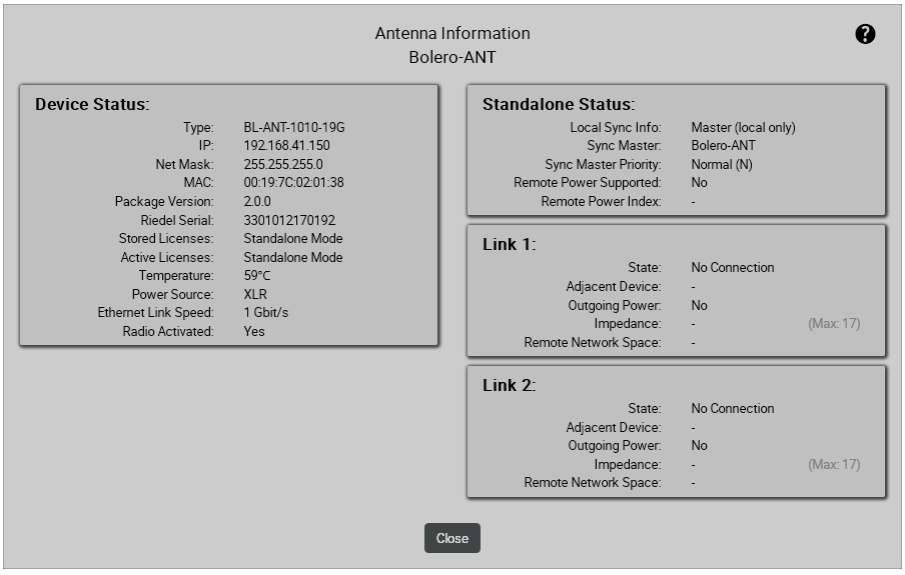


Figure 126: Info (Antennas)

Device Status

Type	Full name of the device type.
IP	IP address of the device.
Net Mask	Fixed subnet mask of the device.
MAC	MAC address of the device.
Package Version	Firmware and bugfix version of the device.
Riedel Serial	Serial number of the device.
Stored Licenses	Licenses, that are stored on the device.
Active Licenses	Licenses, that are currently activated on the device.
Temperature	Current temperature inside the device.
Power Source	Terminal, that is used to power the device.
Ethernet Link Speed	Bandwidth of of the AES67/Config connector.
Radio Activated	Shows if the radio operation is enabled.

Depending on the system mode (**Standalone/Link** and **Integrated/Artist**), different content is displayed:

Standalone/Link Mode

Standalone Status

Local Sync Info	Shows if the Antenna is sync master or slave. In case of slave, it is also indicated to which of the two links (Link 1/2) the device is synchronized.
Sync Master	Name of the Antenna which is currently sync master. In standalone mode the sync master can change without affecting the running system.
Sync Master Priority	Shows the configured priority of the current sync master.
Remote Power Supported	Indicates if the device supports the remote power via the Link-connectors. Notice that old hardware (before G2) does not support remote power.
Remote Power Index	Shows "DC Powered" if the local device is directly powered with an external power supply. Otherwise (if it is powered remotely via Link 1 or Link 2) a value indicates "how far away" from the DC supply the Antenna is.

Link 1/2

State	Indicates the current state of the respective link. The following values are possible:	
	No Connection	No cable is connected or the link is disabled.
	Error (Cabling)	Indicates that the cable connects two similar ports (e.g., Link 1 to Link 1). One must always connect Link 1 to Link 2 and vice versa.
	Error (Authentication)	Indicates that the link cannot be established because authentication was denied.
	Error (Version)	Indicates that the connected Antennas are not operating on the same version and are thus incompatible.
	Pending	Indicates that a link is in the process of being established.
	Pending (Remote Net)	Indicates that a link to an Antenna of another net has been established. The user has to manually join those two nets in the web Interface.
	Link Up	The link is fully established and working.
Adjacent Device	Name of the Antenna that is connected at the respective Link connector.	
Outgoing Power	Shows if the remote power supply is enabled at the respective Link connector to supply the adjacent Antenna.	
Impedance	Shows the link's impedance in Ohms. This value is important if remote power supply is used. Correct operation of a remotely powered Antenna is only guaranteed if the impedance is at most 17 Ohms.	
Remote Network Space	If the link is connected to an Antenna which belongs to another networks space, the remote name is displayed here.	

Integrated/Artist Mode

PTP Status

PTP State	Current state of PTP (Off, Unlocked, Slave, Master).
Lock State	Locking state of PTP (Unlocked, Locking, Locked, Warning, Error). Warning and error are issued when the PTP offset exceeds certain limits.
Master	MAC-address of the sync-master.
Time Offset	Magnitude of the PTP offset in nanoseconds, averaged over the last couple of minutes.
Frequency Deviation	Magnitude of the frequency deviation in parts per billion, averaged over the last couple of minutes.
Network Delay	Statistics (mean and standard deviation) of the network delay of PTP packages from the last couple of minutes.
Hops	Shows how many hops (i.e. network devices) are between the Antenna and the sync master device.
Time / Frequency Traceable	If time/frequency is traceable to a primary reference (e.g. GPS), the respective entry is 'TRUE'.
Version	Specifies the version of the used PTP standard.
Own Clock class	Specifies the clock class as defined by the PTP standard. The clock class has a major impact on whether the device is suited to become PTP master. The lower the clock class, the more accurate the clock.

4.4.3 IO Devices

New in 2.0

The **IO Devices** window displays NSA-002A devices attached at Bolero Antennas.
This view is only available in the operation mode '**Standalone/Link**'.

The upper panel lists all device configurations for a network space:
Configurations are editable offline and have to be assigned a physical device to take effect.
Once assigned, an Antenna (Standalone/Link mode: the physically connected one) of the local network space connects to the device, sets the configuration and starts the audio stream. Unassigning a configuration will disconnect and stops the stream, removing also deletes it. These commands can be performed via the Action Button to the top right.

The lower panel shows discovered IO devices:
Upon connecting to an Antenna in the local network space, the entry is removed and the corresponding assigned config dot in the upper panel turns green. If unconnected and in a different net, you can make a device available by selecting the menu item 'Clear Assigned Net'.

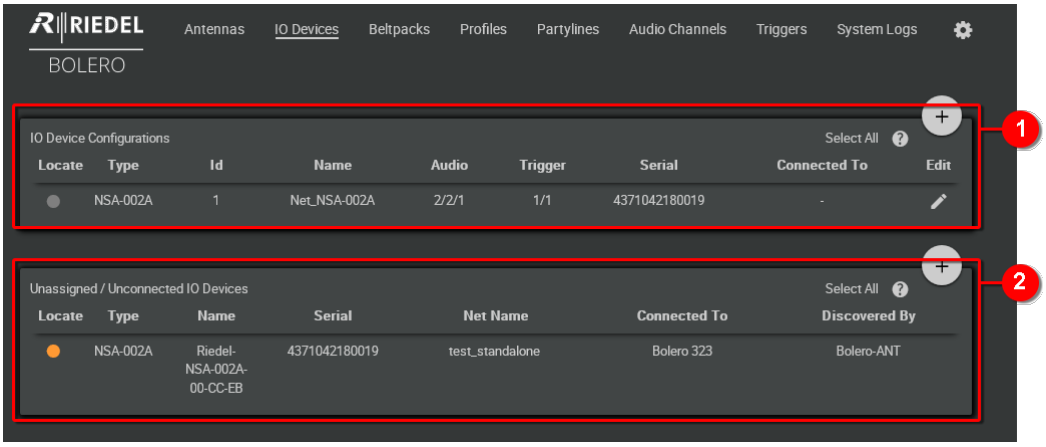


Figure 127: Web-Interface – IO Devices

1	**IO Device Configurations** Table of all IO Device configurations in the Network Space.			
	Locate	Click to flash the front LEDs of the respective IO Device. The dot colors indicate connection status.	unassigned	
			not connected	
			connected	
			connection limit exceeded	
			incompatible device type / firmware or configuration failure	
			locate active (blinks alternately)	
	Type	Name of the device type.		
	Id	Shows the unique ID of the configuration.		
	Name	Shows the configuration name.		
	Audio	no. of audio input/output/4-Wire channels.		
	Trigger	no. of trigger inputs/outputs enabled.		
	Serial	Shows the serial number of the IO Device.		
	Connected To	Shows the Antenna name, the IO device is connected to.		
	Edit	Button to edit the IO Device settings.		
2	**Unassigned / Unconnected IO Devices** Table of devices that are not assigned to configurations or attached to an Antenna. Some content is identically to the table above.			
	Name	Shows the name of the device.		
	Net Name	Shows the name of the Network Space.		
	Discover By	Shows the name of the device that discovered the IO Device.		

4.4.3.1 Action Button (IO Devices)

Clicking the action button offers functions to manage IO devices.
The dialog can be closed by pressing the ESC key without saving any changes.

Figure 128: Action Button (IO Devices)

Create IO Device Configuration

Function in the region **IO Device Configurations** to create a new IO Device configuration.

General	**ID**		Defines the unique ID of the configuration.	
	Type		Shows the device type of configuration.	
	Name		Defines the configuration name.	
	Multicast IP		Defines the multicast IP of the audio stream to be transmitted.	
Triggers	**Input 1 ... 3**		Slider to enable up to three input triggers.	Disabled interfaces are not shown in drop-down menus.
	Output 1 ... 3		Slider to enable up tp three output triggers.	
Audio Channels	**Pair 1 ... 6**	**Off**	Disables the audio channel of the respective port.	
		In and Out	Enables the input and output audio channel of the respective port.	
		4-Wire	Enables the 4-Wire of the respective port.	
		Input	Enables only the input audio channel of the respective port.	
		Output	Enables only the output audio channel of the respective port.	

Add IO Devices

Function in the region **Unassigned / Unconnected IO Devices** that allows adding IO devices.
A single IO device must be selected previously.

Select IO Device Config	Selection of an existing configuration or creation of a new configuration. Creating a new configuration is identical to the feature **Create IO Device Configuration**.

Assign Hardware

Function in the region **IO Device Configurations** that assigns IO devices to a device configuration.

Select Hardware to assign	Selection of an IO device that should be assigned to the previously selected configuration.

Unassign Hardware

Executing this command will remove the assigned IO device from the selected configuration without confirmation.

Remove Config

Allows removing one or more selected configurations. A dialog is opened to confirm the action.
This will remove all associated audio channels, triggers and key bindings.

Locate IO Device

Allows identifying the selected IO device visually. The LEDs on the front side of the respective IO device will start flashing for about 15 seconds.

Clear Assigned Net

Unconnected and existing IO devices in other network spaces can be made available by this feature.
The respective IO device must be selected previously.
This action requires the "Admin PIN" of the Network Space.

4.4.3.2 Edit (IO-Devices)

Clicking the Edit symbol opens a dialog to edit IO device settings.
The dialog can be closed by pressing the ESC key without saving any changes.

Apply	Stores all changes.
Apply & Close	Stores all changes and closes dialog.
Cancel	Discards all changes.

Figure 129: Edit (IO Devices)

General	**ID**		Shows the unique ID of the configuration. (fixed, read only)	
	Type		Shows the device type of configuration.	
	Name		Defines the configuration name.	
	Multicast IP		Defines the multicast IP of the audio stream to be transmitted.	
Triggers	**Input 1 ... 3**		Slider to enable up to three input triggers.	Disabled interfaces are not shown in drop-down menus.
	Output 1 ... 3		Slider to enable up to three output triggers.	
Audio Channels	**Pair 1 ... 6**	**Off**	Disables the audio channels of the respective port.	
		In and Out	Enables the input and output audio channels of the respective port.	
		4-Wire	Enables the 4-Wire of the respective port.	
		Input	Enables the input audio channel of the respective port.	
		Output	Enables the output audio channel of the respective port.	

4.4.4 Beltpacks

The **Beltpacks** window lists all registered Beltpacks of the active network space.

Beltpacks are listed even if they are not connected (out of range, turned off). Once a Beltpack is registered, after powering up it will instantly connect and become operational.
The registered Beltpack list shows the Beltpack status information with remaining battery capacity.
The icon in the **Locate** column displays the status of the Beltpack.
When you are logged in as admin user, it is possible to edit Beltpack settings by clicking the edit icon.

The **Registered Beltpacks** window features the following functions:

- Listing of all registered Beltpacks in the Net.
- Changing of Beltpack settings
- Changing of assigned Profiles
- Removing Beltpacks from Nets
- Enable registration
- Locating Beltpacks

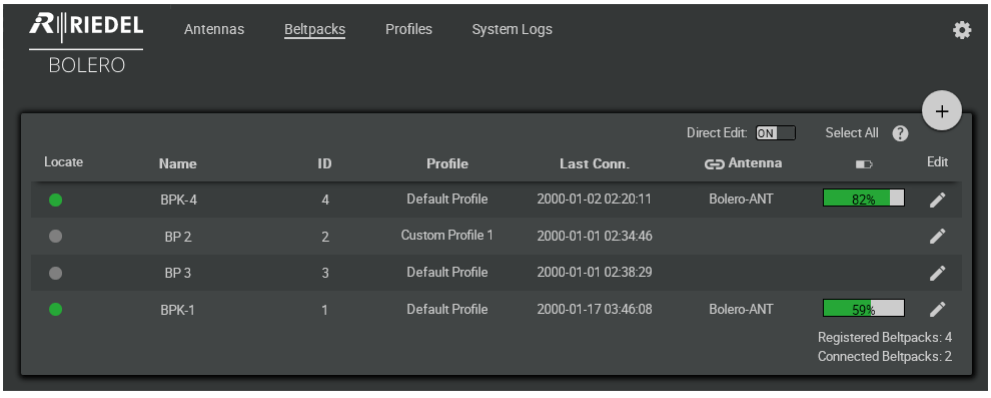


Figure 130: Web-Interface – Beltpacks

Locate	This feature is useful to identify a specific Beltpack visually. After clicking this icon, the Status-LED and the Status-Bar of the respective Beltpack will start flashing yellow until any key is pressed on the Beltpack.
Name *	Name of the Beltpack.
ID *	Unique ID of the Beltpack.
Profile *	Name of the assigned Profile.
Last Conn.	Date and time of last connection.
Antenna	Name of the Antenna, the Beltpack is connected to.
Battery	State of battery of the Beltpack.
Edit	Button to edit the Beltpack settings.
Direct Edit: ON	If the switch is enabled (**On**), the **Name**, **ID** and **Profile** of a Beltpack are directly editable in the **Beltpacks** window by clicking on the desired entry.

* direct editable if the switch **Direct Edit** is enabled

4.4.4.1 Action Button (Beltpacks)

Clicking the action button offers functions to manage Beltpacks.
The dialog can be closed by pressing the ESC key.

Figure 131: Action Button (Beltpacks)

Change Profile
Allows assigning a profile to the selected Beltpacks. Profiles are a collection of Beltpack parameters that can be applied to multiple Beltpacks without setting the parameters manually in each Beltpack.

Swap Configurations
Allows swapping the Beltpack configuration of two selected Beltpacks.

Deregister
This function deregisters the selected Beltpacks from the active network space. The Beltpacks are removed from the list.

Locate
Allows identifying the selected Beltpack visually. The Status-LED and the Status-Bar of the respective Beltpacks will start flashing yellow until a Beltpack key is pressed.

Unlatch Keys
This function will unlatch all keys on the selected Beltpacks. All latched keys and even (momentary) keys currently pressed are deactivated, they have to be released and pressed again to activate them again.

Clear Selected User IDs
Clears the User IDs of the selected Beltpacks. The User ID is set to zero ("0").

Auto-assign User IDs
Automatically assign unique and available user IDs to Beltpacks with empty ID field. The initial value is one ("1").

Registration Mode
Opens the Beltpack registration settings.
(See chapter '**Bolero Antenna** > **Web Interface** > **Net/Antenna** > Menu – Registration Mode'.)

4.4.4.2 Edit (Beltpacks)

Clicking the Edit symbol opens a dialog to edit Beltpack settings on several pages. The selected page is underlined. The dialog can be closed by pressing the ESC key without saving any changes.

Apply	Stores all changes.
Apply & Close	Stores all changes and closes dialog.
Cancel	Discards all changes.

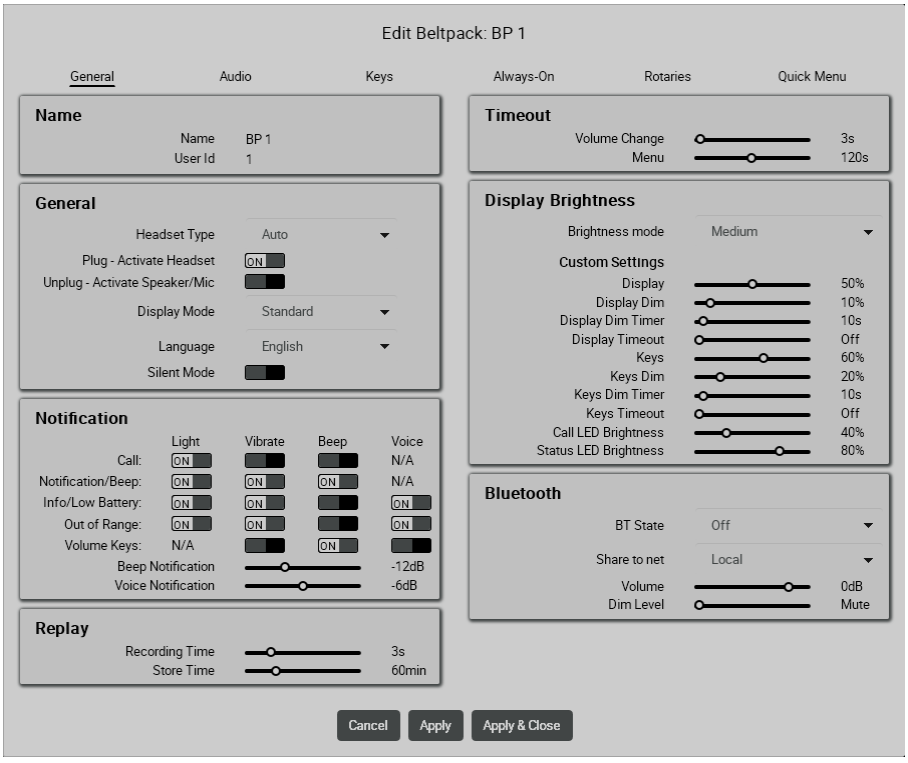


Figure 132: Edit (Beltpacks)

General

This view is used for editing general Beltpack settings.

Name

Name	Name of the Beltpack.
User ID	Unique ID of the Beltpack.

General

Headset Type	Auto, Dynamic Detect, Electret Detect, Dynamic, Electret (see chapter Headset Type).
Plug - Activate Headset	Switch to enable automatically activating the headset mode if a headset is connected at the XLR connector.
Unplug - Activate Speaker/Mic	Switch to enable automatically activating the speaker mode if a headset is disconnected from the XLR connector (see chapter Speaker/Mic).
Display Mode	Selection of the display mode (see chapter Display Mode). Standard, Alternative, Standard Flip, Alternative Flip
Language	Selection of a pre-programmed Beltpack language English and German.
Silent Mode	If the Silent Mode is activated, speaker and vibration are disabled.

Notification

Call **Notification/Beep** **Info/Low Battery** **Out Of Range** **Volume Keys**	Switch to enable the respective signalization: • Light • Vibrate • Beep • Voice (only for: **Info/Low Battery**, **Out of Range**, **Volume Keys**)
Beep Signalization	Slider to adjust the tone signalization volume.
Voice Signalization	Slider to adjust the voice signalization volume.

Replay

The Replay function allows repeated listening to the last call. Recordings are VOX controlled. Thus, no silence is recorded.

Recording Time	Defines the duration of recordings.
Store Time	Defines the time, how long the recording is stored.

Timeout

Volume Change	Slider to adjust the volume change timeout (how long the volume adjustment is opened without activity).
Menu	Slider to adjust the menu timeout (how long a menu is opened without activity).

Display Brightness

This view is used for setting the Beltpacks display brightness.

Brightness mode	Selection between one user defined and three pre-defined brightness definitions: Custom, Low, Medium, High (see Beltpack **Brightness Mode**)	
Custom Settings	**Display**	Normal brightness level of the display.
	Display Dim	Dimmed brightness level of the display.
	Display Dim Timer	Time of inactivity until the display illumination is dimmed.
	Display Timeout	Time of inactivity until the display illumination is switched off.
	Keys	Normal brightness level of the keys.
	Keys Dim	Dimmed brightness level of the keys.
	Keys Dim Timer	Time of inactivity until the key illumination is dimmed.
	Keys Timeout	Time of inactivity until the key illumination is switched off.
	Call LED Brightness	Brightness level of the Call LED.
	Status LED Brightness	Brightness level of the Status LED.

Bluetooth

BT State	Off, Connect to Headset, Connect to Mobile/PC
Share to net	Local, Public
Volume	Slider to adjust the Bluetooth volume.
Dim Level	Slider to adjust the Dim level.

Audio

This view is used for editing the Beltpacks audio settings.

Levels

Headset	Adjustment of the headset volume.
Sidetone	Adjustment of the sidetone volume.
Headset Mic	Adjustment of the gain of the headset microphone.
Internal Mic	Adjustment of the gain of the internal microphone.
Aux Input	Adjustment of the gain of the line input.
Priority Dim	Adjustment of the dim level for priority calls.
VOX Threshold	Adjustment of the Vox threshold.

Speaker/Mic

Enable	Switch to enable the internal Beltpack speaker and microphone.
Volume	Slider to adjust the speaker volume.

Audio Settings

Microphone Filter	Switch to enable the headset microphone filter (narrow, 3.5 kHz).
Headphone Filter	Switch to enable the filter for hearing impaired people to increase intelligibility.
Headset Echo Suppression	Switch to prevents/reduces acoustic echo distortions to improve voice quality of the headset. **Echo suppression** is always on in Speaker/Mic mode.

Limits

Headset Lower Limit	Slider to adjust the lowest headset volume.
Speaker Lower Limit	Slider to adjust the lowest speaker volume.
Mic Limiter	Slider to adjust the threshold level of the microphone limiter.
Headset Limiter	Slider to adjust the threshold level of the headset limiter.

Keys

This view is used for defining the functions of the Beltpack keys 1 to 6 and Reply.

Key 1 ... 6, Reply

Function	Selection of the function of the respective Beltpack key. • None • Talk (Low/High Prio) • Listen (Low/High Prio) • Reply • Notification/Beep • Set Trigger • Monitor Trigger • Menu Shortcut • Toggle Setting • Volume Increase/Decrease	
Mode [*1]	Defines if the key press is latching, momentary or set automatically (short press: latching, long press: momentary).	
Destination [*2]	Defines the destination depending on the selected function.	
	Talk (Standard/ Low/High Prio) Listen (Standard/ Low/High Prio	Defines the destination (or source) of calls: • present Partylines • present Beltpacks
	Set Trigger	Defines (physically/virtual) GPIO-outputs to be switched: • Define Output/Virtual Trigger • Create Virtual Trigger **Create Virtual Trigger** allows creating a new virtual trigger in the network space. This trigger can be used to trigger events from all devices registered in this network space. Each trigger has a unique ID. The trigger can be toggled normally or forced to a fixed condition (1/0).
	Monitor Trigger	Defines the (physically/virtual) GPIO-input/output to be monitored: • Define Input/Output/Virtual Trigger • Create Virtual Trigger
	Menu Shortcut	Opens the selected menu by pressing the respective Beltpack key.
	Toggle Setting	Toggles the selected function by pressing the respective Beltpack key.
Master, Key 1...6, Reply, Bluetooth [*3]	Switch to select the respective audio channels to be adjusted.	

[*1] if Function = **Talk**, **Listen**, **Reply**, **Set Trigger**
[*2] if Function = **Talk**, **Listen**, **Set/Monitor Trigger**, **Menu Shortcut**
[*3] if Function = **Volume Increase/Decrease**

Always-On

This view is used for defining up to five functions that are permanent active, when a Beltpack is connected, without pressing any Beltpack key.
Select in the drop-down list on the left side (**Select function to add**) the function to be added on the respective Beltpack.

On the right side the active functions are displayed. A function can be deleted by clicking the trash button ( ).

Rotaries

This view is used for defining the function of the rotary encoders.

Rotary 1,2

Master, Key 1...6, Reply, Bluetooth	Switch to select the respective audio channels to be adjusted.

Quick Menu

This view is used for defining up to 16 entries that are present in the Beltpacks quick menu.
Select in the drop-down list on the left side (**Choose Quick Menu item to add**) the quick menu item to be added to the respective Beltpack.
On the right side the present quick menu items are displayed. The order of the menu items can be changed by drag and drop. A menu item can be deleted by drag and drop the respective entry outside the window. Clicking the **Clear all** button deletes all entries.

4.4.5 Profiles (User Rights)

The **Profiles** window lists all available Beltpack profiles of the active network space.

Profiles are a collection of Beltpack parameters. To achieve a fast and easy configuration, profiles can be applied to multiple Beltpacks without setting parameters manually in each Beltpack.
Change of a profile parameter will immediately update this parameter in all Beltpacks assigned to this profile.
Allowing the admin to decide if a Beltpack user has the ability to change certain parameters, the profiles also implement user rights.

The **Profiles** window features the following functions:

- List of all available Profiles
- Creation of Profiles
- Changing of Profile settings
- Defining of user rights

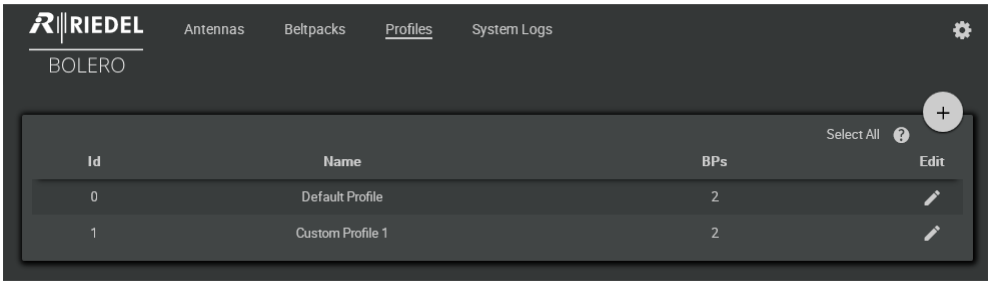


Figure 133: Web-Interface – Profiles

Id	Shows unique ID of the Profile.
Name	Name of the Profile.
BP	Amount of Beltpacks using this Profile.
Edit	Button to edit the Profile.

4.4.5.1 Action Button (Profile)

Clicking the action button offers functions to manage Beltpack profiles.
The dialog can be closed by pressing the ESC key.

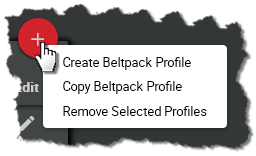


Figure 134: Action Button (Profiles)

Create Beltpack Profile

This function allows creating a new Beltpack profile. All parameters are the same like editing in the Beltpack (see chapter Edit (Beltpacks)).

Furthermore the user rights can be edit for parameters. Click the symbol to toggle the status:

	The Beltpack user has the user right to use this function.
	The Beltpack user has *no* right to use this function. This function is hidden in the Beltpack.

Furthermore the view **User Rights** allows restricting the access to further menu items.

General

Change Profile	User right to access the menu '**General Settings** > **Profile**'.
Quick Mute	User right to allow quick mute in the Volume Change menu.
Reset	User right to access the menu '**Service** > **Reset**'.
info	User right to access the menu '**Service** > **Information**'.

System

Registration	User right to access the menu '**Registration**'.
System Settings	User right to access all sub-menus in the menu '**Admin**' (except **Registration Mode**).
Test	User right to access the menu '**Service** > **Test**'.

Menu

Main Menu	User right to access the main menu. (The message **Menu locked** is displayed.)
Quick Menu	User right to access the Quick Menu.
Volume Menu	User right to access the volume adjustment.

Copy Beltpack Profile

This function allows creating a new Beltpack Profile by using the selected Beltpack Profile as template.

Remove Selected Profiles

This function deletes the selected Profile after confirmation.

4.4.5.2 Edit (Profile)

Clicking the Edit symbol opens a dialog to edit profiles on several pages. The selected page is underlined. The dialog can be closed by pressing the ESC key without saving any changes.

Apply	Stores all changes.
Apply & Close	Stores all changes and closes dialog.
Cancel	Discards all changes.

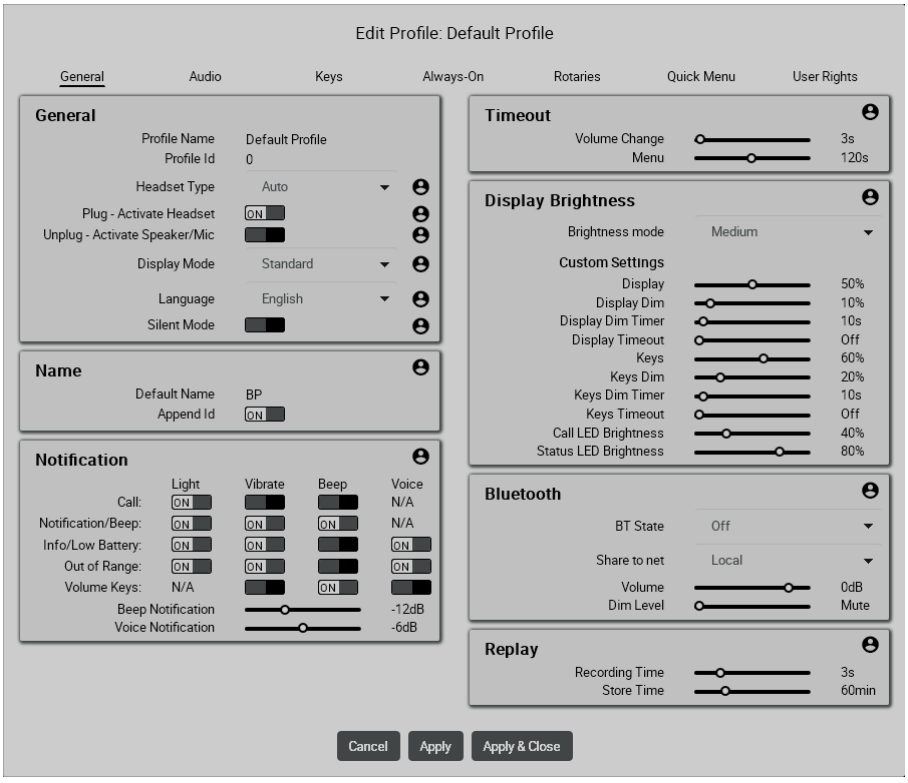


Figure 135: Edit (Profiles)

All parameters are the same like creating a profile (see chapter Action Button (Profile) > Create Beltpack Profile).

4.4.6 Partylines

New in 2.0

The **Partyline** view lists all available Partylines of the active network space.
This view is only available in the operation mode '**Standalone/Link**'.

This view allows creating and editing up to 12 Partylines in the active network space.

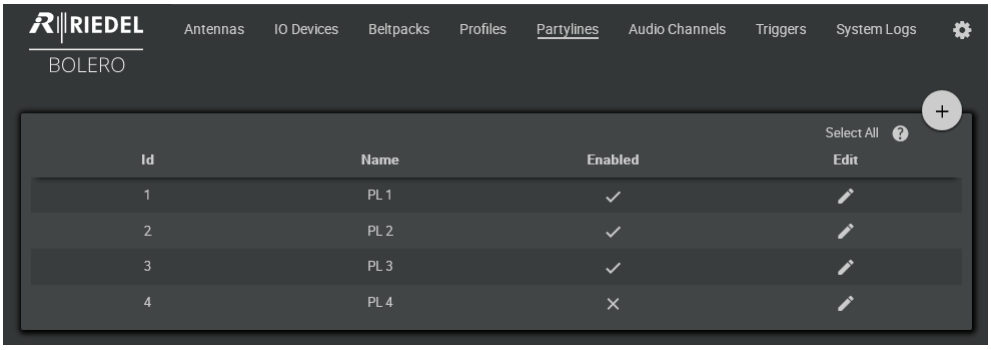


Figure 136: Web-Interface – Partylines

Id	Shows unique ID of the Partyline.		
Name	Name of the Partyline.		
Enabled	Displays the activity status of the Partyline. Disabled Partylines are not shown on the Beltpacks.	enabled disabled	✓ ✗
Edit	Button to edit the Partyline.		✎

4.4.6.1 Action Button (Partylines)

Clicking the action button offers functions to manage Partylines.
The dialog can be closed by pressing the ESC key.

Figure 137: Action Button (Partylines)

Create Partyline

This function allows adding a new Partyline to the list.
A name and an ID are required for the creation. (The next available ID is displayed by default.)

Remove selected Partylines

This function allows removing the selected Partyline(s) from the list.
A dialog is opened to confirm the action.

4.4.6.2 Edit (Partylines)

Clicking the Edit symbol opens a dialog to edit Partylines.
The dialog can be closed by pressing the ESC key without saving any changes.

Apply	Stores all changes.
Cancel	Discards all changes.

Figure 138: Edit (Partylines)

Name	Name of the Partyline.
Id	Displays the unique ID of the Partyline. (fixed, read only)
Enabled	Switch to enable (**on**) or disable (**off**) the Partyline.

4.4.7 Audio Channels

New in 2.0

The **Audio Channels** view lists all available audio channels of the active network space.
This view is only available in the operation mode '**Standalone/Link**'.
Audio Channels need to be enabled in the **IO Devices** view first.

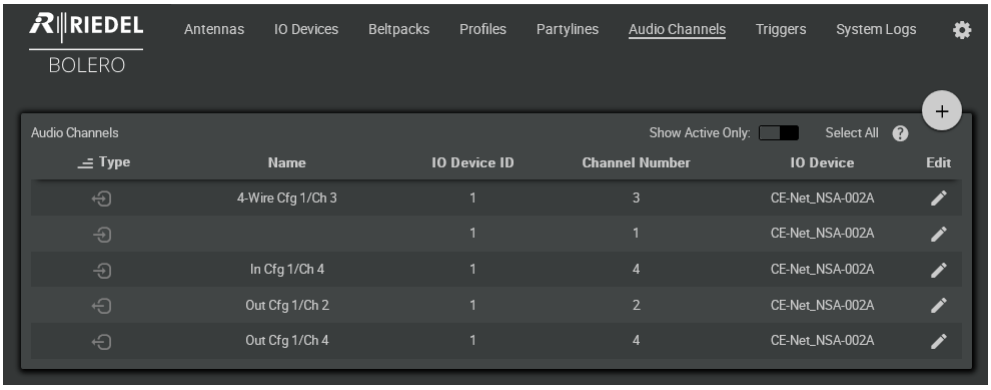


Figure 139: Web-Interface – Audio Channels

Type	Indicates the type of the Audio Channel. If green, the channel is active.	Input	
		Output	
		4-Wire	
Name	Name of the Audio Channel.		
IO Device ID	ID of the IO Device.		
Channel Number	Number of the Audio Channel.		
IO Device	Name of the IO Device.		
Edit	Button to edit the Partyline.		

4.4.7.1 Action Button (Audio Channels)

Clicking the action button offers functions to manage audio channels.
The dialog can be closed by pressing the ESC key.

Figure 140: Action Button (Audio Channels)

Copy AudioChannels Config

This function allows copying the configuration of the selected audio channel to another audio channel.

Reset to Defaults

This function allows resetting the values of the selected audio channels to the configurations default values.

4.4.7.2 Edit (Audio Channels)

Clicking the Edit symbol opens a dialog to edit audio channels on several pages. The selected page is underlined. The dialog can be closed by pressing the ESC key without saving any changes.

Apply	Stores all changes.
Apply & Close	Stores all changes and closes dialog.
Cancel	Discards all changes.

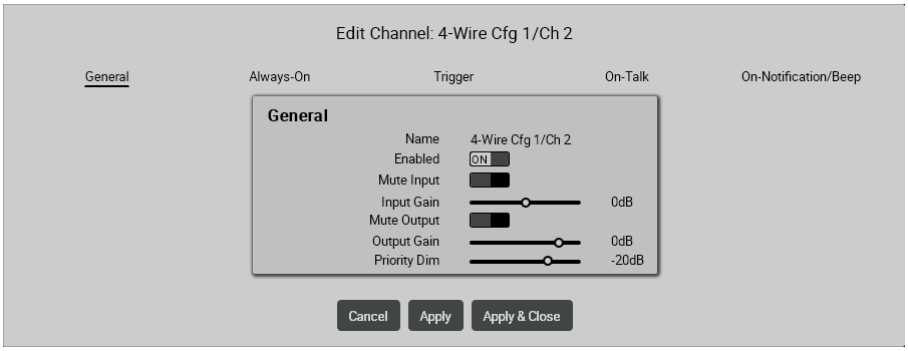


Figure 141: Edit (Audio Channels)

General

Name	User configurable name of the audio channel.
Enabled	Slider to enable/disable the audio channel.
Mute Input *1	Slider to mute the input signal.
Mute Output *2	Slider to mute the output signal.
Input Gain *1	Slider to adjust the input gain: -12 ... *0* ... +12 dB
Output Gain *2	Slider to adjust the output gain: Mute: -60 ... *0* ... +12 dB
Priority Dim *2	Slider to adjust the dim level of priority calls: Mute, -72 ... *-20* ... 0 dB

*1 audio inputs and 4-wire only
*2 audio outputs and 4-wire only

Always-On

Function to add	Up to 5 functions can be configured, that are permanently activated.	
	Talk (Low/High Prio) *1	Calling a destination.
	Listen (Low/High Prio) *2	Monitoring a source.
	Set Trigger	Setting a GPIO output (physical/virtual).
Destination	Defines the destination depending on the selected function.	
	Talk (Low/High Prio) **Listen (Low/High Prio**	Destination (or source) of calls: • present Partylines • present Beltpacks • present Audio Channels
	Set Trigger	GPIO outputs to be switched (physically/virtual): • Define Output/Virtual Trigger • Create Virtual Trigger
	A function can be deleted by clicking the trash button.	

*1 audio inputs and 4-wire only
*2 audio outputs and 4-wire only

Trigger

Function to add	Up to 5 functions can be configured, that are switched by a trigger.	
	Talk (Low/High Prio) [*1]	Calling a destination.
	Listen (Low/High Prio) [*2]	Monitoring a source.
	Notification/Beep	Sending a beep-tone / voice-notification.
	Set Trigger	Setting a GPIO output (physical/virtual).
Trigger	Defines the trigger (input/output/virtual) that causes activating the respective function.	
Destination	Defines the destination depending on the selected function.	
	Talk (Low/High Prio) **Listen (Low/High Prio**	Destination (or source) of calls: • present Partylines • present Beltpacks • present Audio Channels
	Notification/Beep	Destination of beep-tones / voice-notifications: • present Partylines • present Beltpacks • present Audio Channels
	Set Trigger	GPIO outputs to be switched (physically/virtual): • Define Output/Virtual Trigger • Create Virtual Trigger
	A function can be deleted by clicking the trash button.	

[*1] audio inputs and 4-wire only
[*2] audio outputs and 4-wire only

On-Talk

Function to add	Up to 5 functions can be configured, that are automatically activated if the respective channel is performing a call.	
	Talk (Low/High Prio) [*1]	Calling a destination.
	Listen (Low/High Prio) [*2]	Monitoring a source.
	Notification/Beep	Sending a beep-tone / voice-notification.
	Set Trigger	Setting a GPIO output (physical/virtual).
Destination	Defines the destination depending on the selected function.	
	Talk (Low/High Prio) **Listen (Low/High Prio**	Destination (or source) of calls: • present Partylines • present Beltpacks • present Audio Channels
	Notification/Beep	Destination of beep-tones / voice-notifications: • present Partylines • present Beltpacks • present Audio Channels
	Set Trigger	GPIO outputs to be switched (physically/virtual): • Define Output/Virtual Trigger • Create Virtual Trigger
	A function can be deleted by clicking the trash button.	

[*1] audio inputs and 4-wire only
[*2] audio outputs and 4-wire only

On-Notification/Beep

Function to add	Up to 5 functions can be configured, that are automatically activated if the respective channel receives a notification/beep.	
	Talk (Low/High Prio) [*1]	Calling a destination.
	Listen (Low/High Prio) [*2]	Monitoring a source.
	Notification/Beep	Sending a beep-tone / voice-notification.
	Set Trigger	Setting a GPIO output (physical/virtual).
Destination	Defines the destination depending on the selected function.	
	Talk (Low/High Prio) **Listen (Low/High Prio**	Destination (or source) of calls: • present Partylines • present Beltpacks • present Audio Channels
	Notification/Beep	Destination of beep-tones / voice-notifications: • present Partylines • present Beltpacks • present Audio Channels
	Set Trigger	GPIO outputs to be switched (physically/virtual): • Define Output/Virtual Trigger • Create Virtual Trigger
	A function can be deleted by clicking the trash button.	

[*1] audio inputs and 4-wire only
[*2] audio outputs and 4-wire only

4.4.8 Triggers

New in 2.0

The **Triggers** view lists all available (GPIO) triggers of the active network space.
This view is only available in the operation mode '**Standalone/Link**'.

Virtual Triggers are 'logical' GPIOs which are not associated with a physical device.

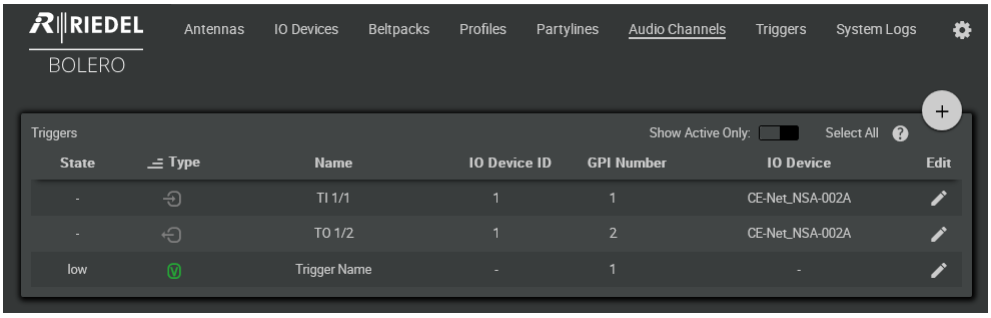


Figure 142: Web-Interface – Triggers

State	Indicates the state of the trigger.	not set (0)	**low**
		set (1)	**high**
		deactivated	-
Type	Indicates the type of the trigger. If green, the trigger is active.	input	
		output	
		virtual	
Name	Name of the trigger.		
IO Device ID	ID of the IO device at which the GPI interface is present.		
GPI Number	Number of the trigger at the respective IO device.		
IO Device	Name of the IO device at which the GPI interface is present.		
Edit	Button to edit the trigger.		
Show Active Only:	If the switch is enabled (**On**), deactivated triggers will be hidden.		

4.4.8.1 Action Button (Triggers)

Clicking the action button offers functions to manage virtual triggers or triggers of IO devices.
The dialog can be closed by pressing the ESC key.

Figure 143: Action Button (Triggers)

Create Virtual Trigger

This function allows adding a new Trigger to the list.

Id	Unique ID of the Trigger. The next available ID is displayed by default.	
Name	Name of the Trigger.	
Enabled	Slider to activate the virtual Trigger.	
Mode	**Normal**	Usual Trigger that state is controlled by conditions.
	Force On	The state of the Trigger is forced on (1, high).
	Force Off	The state of the Trigger is forced off (0, low).

Remove Virtual Trigger

This function allows removing the selected Trigger(s) from the list.
A dialog is opened to confirm the action.

4.4.8.2 Edit (Triggers)

Clicking the Edit symbol opens a dialog to edit triggers.
The dialog can be closed by pressing the ESC key without saving any changes.

Apply	Stores all changes.
Apply & Close	Stores all changes and closes dialog.
Cancel	Discards all changes.

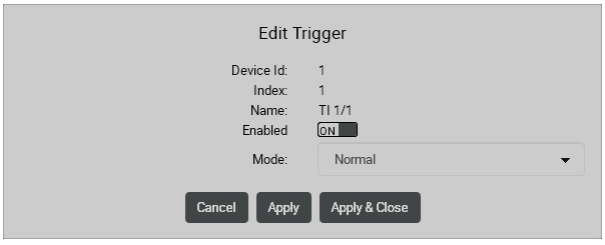


Figure 144: Edit (Triggers)

Device Id	Displays the unique ID of the IO device. (fixed, read only)	
Index	Displays the unique ID of the Trigger of the respective IO device. (fixed, read only)	
Name	Name of the Trigger.	
Enabled	Switch to enable (**on**) or disable (**off**) the Trigger.	
Mode	**Normal**	Normal trigger operation.
	Force On	Forces the trigger to static high.
	Force Off	Forces the trigger to static low.

4.4.9 System Logs

Faults List
Contains all currently active errors from all network space components, giving a first indication in case of unstable system behavior.
Errors in the **Fault List** can be confirmed and hidden by clicking on **Acknowledge**.

Event Log
This list contains general events from all network space components. System events can be information about device changes (e.g. radio on/off, restart, ...), Beltpack connection status and many more.
The events in the Event Log can be cleared by clicking the plus symbol and choosing **Clear Logs**.

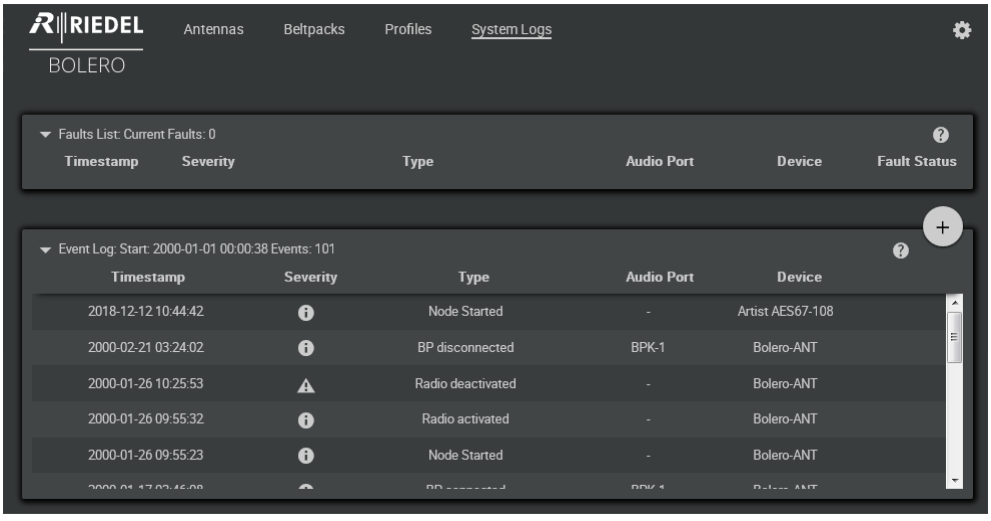


Figure 145: Web-Interface – System Logs

Fault List | Current Faults: (number of entries)	
Timestamp	Date and time of the failure.
Severity	Severity of the failure.
Type	Description of the failure.
Audio Port	Affected audio port.
Device	Affected device.
Fault Status	The respective message will be removed from the fault list by clicking the '**Acknowledge**' button

Event Log | Start: (date and time of logging) **| Events:** (numbers of entries)	
+	Shows the '**Clear Logs**' function. All messages in the Event Log will be removed without confirmation.
Timestamp	Date and time of the event.
Severity	Severity of the event.
Type	Description of the event.
Audio Port	Affected audio port.
Device	Affected device.

4.4.10 Settings

4.4.10.1 Save Net Config

This function allows storing the current Net configuration into a file.

After executing this function the configuration is saved in the default download folder of the used browser. The filename is generated out of the Net name, the current date and time and the suffix "NetConfig.bol".

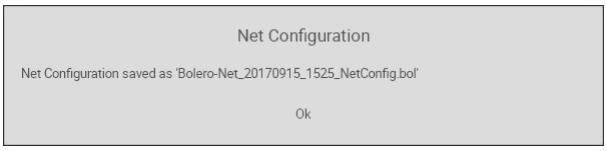


Figure 146: Web-Interface – Save Net Config

4.4.10.2 Upload Net Config

This function allows loading a previous stored Net configuration into the system.

After executing this function a dialog is opened to select the desired ".bol" file.
The configuration is applied to the Net without confirmation.

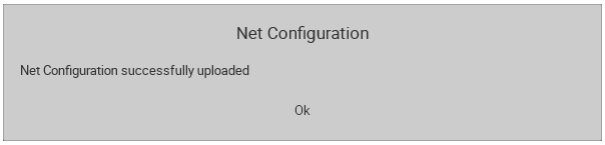


Figure 147: Web-Interface – Upload Net Config

4.4.10.3 Firmware Manager

The Firmware of devices can be updated in this tab.

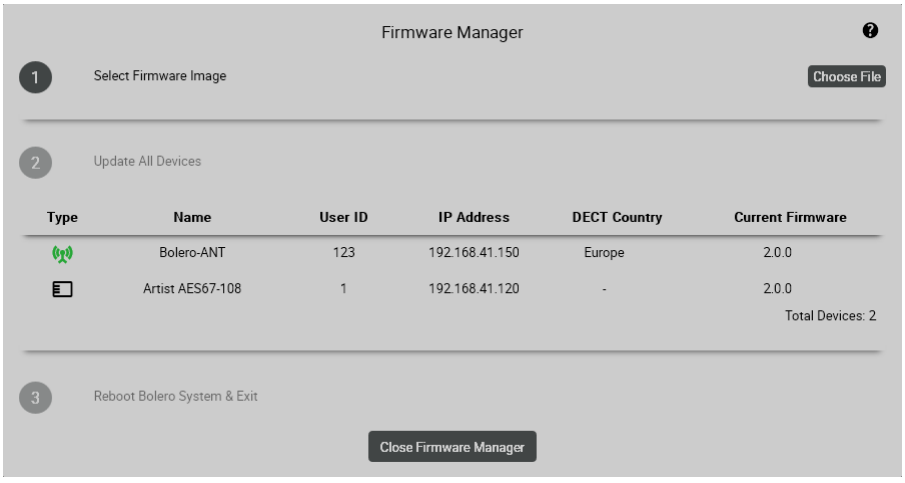


Figure 148: Web-Interface – Firmware

Proceed following steps to update one or multiple devices:

1. Click '**Select Firmware Image**' and select the desired firmware file (*.package*).
2. Click '**Update All Devices**' to start the update procedure.
3. Click '**Finish & Reboot System**' to restart the devices.

See also chapter Firmware Update.

4.4.10.4 License Manager

New in 2.0

The license manager shows the licenses installed on all network space devices and allows creating a license info file with all necessary information to generate new licenses and provides the functionality to install these new licenses on all devices in the system.

Figure 149: Web-Interface – License Manager

Steps to get a license:

1. Create a '**License Info File**' and send it to your local distributor with the information which license shall be created and for which device.
2. You can also do this manually by copying the serial number of the device.
3. Riedel will create a license file for you. This new file will include the licenses for the requested devices. You can use this file several times on different Bolero networks, if not all devices are installed at one site.
4. Click '**Install License**' and select the new license file.
5. Licenses from the file will be activated on all devices found on the network.

	Antennas with standalone license show a SA symbol in the lower left corner of the display.

4.4.10.5 Diagnostics File Export

New in 2.0

This function allows exporting internal diagnostic information into a zip-file.
This data is used by Riedel service to analyze the system.

After clicking the **Export...** button the diagnostic information is saved in the default download folder of the used browser. The filename is generated out of the Net name, the current date and time and the suffix ".diag.zip".

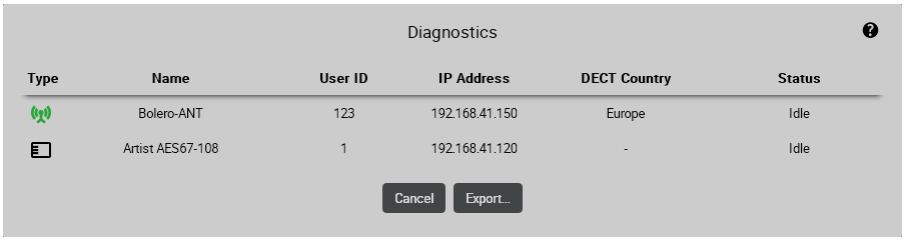


Figure 150: Web-Interface – Diagnostics File Export

4.4.10.6 Network Service

In the Network-Service the DECT region can be set by qualified Riedel service personnel.

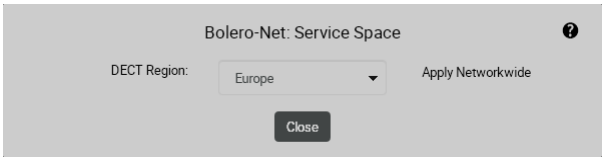


Figure 151: Web-Interface – Network Service

4.4.10.7 Logout

A dialog is opened. Click on **OK** to log out of the system.

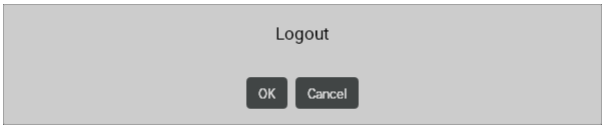


Figure 152: Logout confirmation

4.5 Technical Drawing

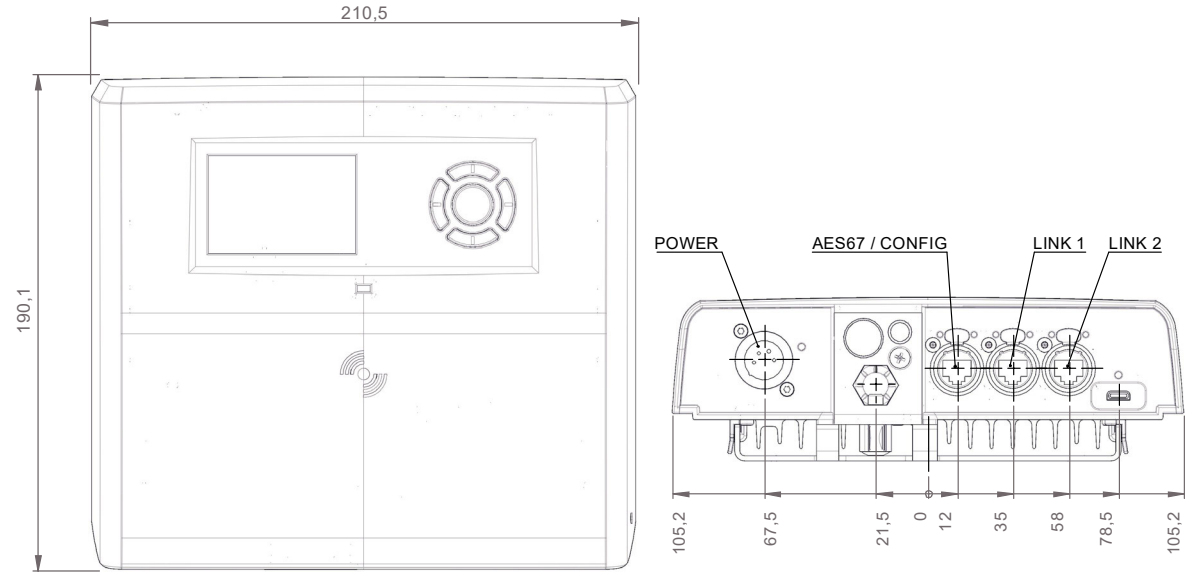


figure 153: Antenna (front, bottom), dimensions in millimeter

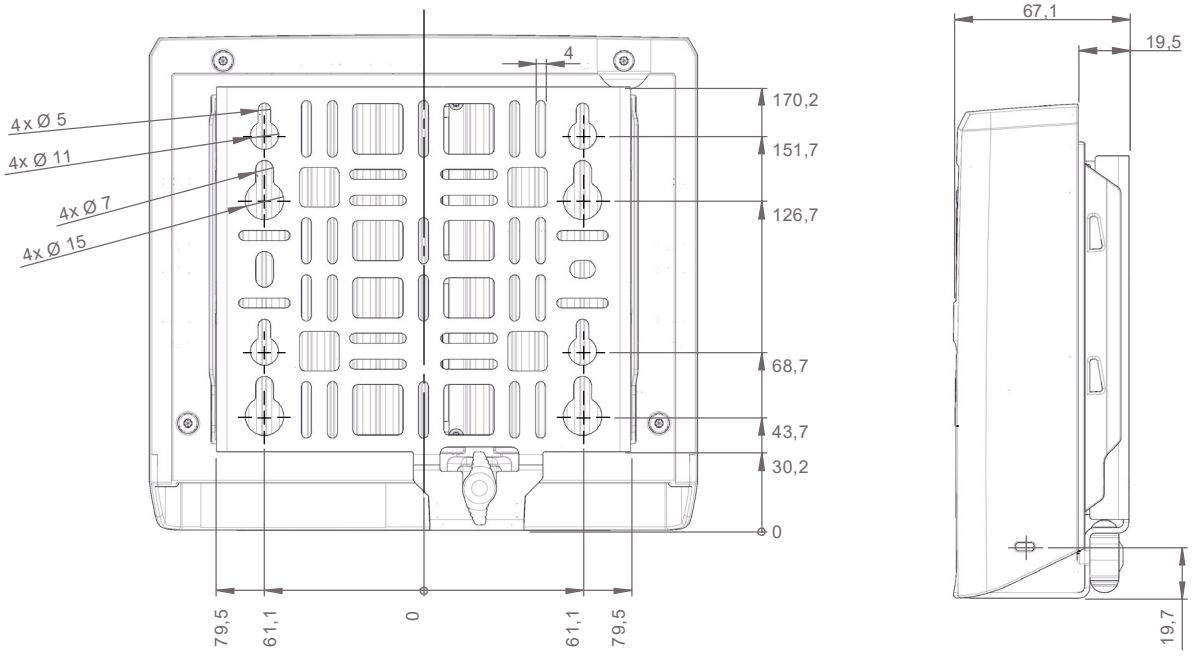


figure 154: Antenna (rear, right), dimensions in millimeter

4.6 Technical Specifications

Antenna Product Code	BL-ANT-1010-19		
No of Beltpacks per Antenna	10		
RF Frequency Range / Power (average)	1.880 ... 1.930 GHz (region dependent, not changeable by the user)	EU	1880-1900 MHz / 10 mW
		US & CA	1920-1930 MHz / 4 mW
		JP	1894-1906 MHz / 4 mW
		BR	1910-1920 MHz / 10 mW
		LA	1910-1930 MHz / 10 mW
		MC	1880-1900 MHz / 4 mW
		TH	1900-1906 MHz / 10 mW
		MA & PH	1880-1890 MHz / 10 mW
RF	Antenna Coverage	Indoor (structure dependent): ~200 ... 400m	
		Outdoor (free line of sight): ~300 ... 500m	
	Beltpack to Antenna range	Indoor (structure dependent): ~100 ... 200m	
		Outdoor (free line of sight): ~150 ... 250m	
Programmable RF Transmission power	Yes (country dependent) maximum: 24 dBm / 250 mW, average: 10 dBm / 10 mW		
Beltpack Registration	1 touch NFC & over the air		
Network Connection	AES67 IP		
USB Type-C Connection	USB 2.0		
Display Type	High contrast E-ink display		
Power Supply	PoE+ (802.3at, type 2, class 4, 15 ... 30 W) or 10 ... 57 VDC, 3 A (Bolero-Power-Supply 'BL-EPS-1001-00' or 'BL-EPS-1005-00')		
Power Consumption	15 W		
Mounting points	Mic stand threaded socket 5/8” & 3/8” inside, spigot adapter with wing screw lock, Kensington lock hole, screw hole for a safety wire mounting		
Dimensions	Width	210 mm / 8.3"	
	Height	190 mm / 7.5"	
	Depth	66 mm / 2.6"	
Weight	1320 g		
Environmental	IP53 protected against limited ingress of dust + water falling as a spray at an angle up to 60°		
Operating Environment	Temperature	-10° ... +55°C	
	Humidity	0 % ... 90 % rel. (non-condensing), Ta=40°C	
Storage Temperature	-20° ... +70°C		

5 Bolero Charger

The Bolero 5-bay battery Charger has the ability to quickly and safely charge up to 5 Bolero batteries simultaneously. Light and powerful high performance lithium rechargeable battery packs are used for the Beltpack. Battery packs are able to charge inside the Beltpack as well as separately in the 5-bay Charger.
Via the additional USB Type A and USB Type C connectors on the front side, two additional Bolero Beltpacks or any other USB devices can be charged.
Charging starts automatically after inserting the battery into a charging slot. An empty battery is charged in about 180 minutes. If a Beltpack is in the charging station, the Beltpack automatically shuts down the radio. If a Beltpack is charged via USB connector, the radio is not shut down.

5.1 Operating Elements

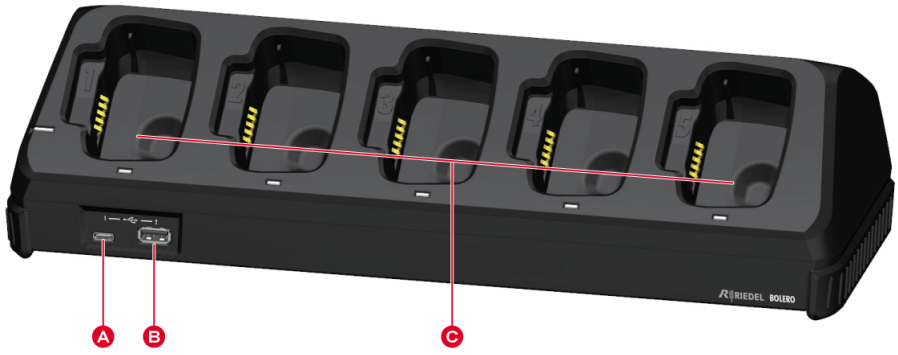


Figure 155: Charger – Operating Elements (top)

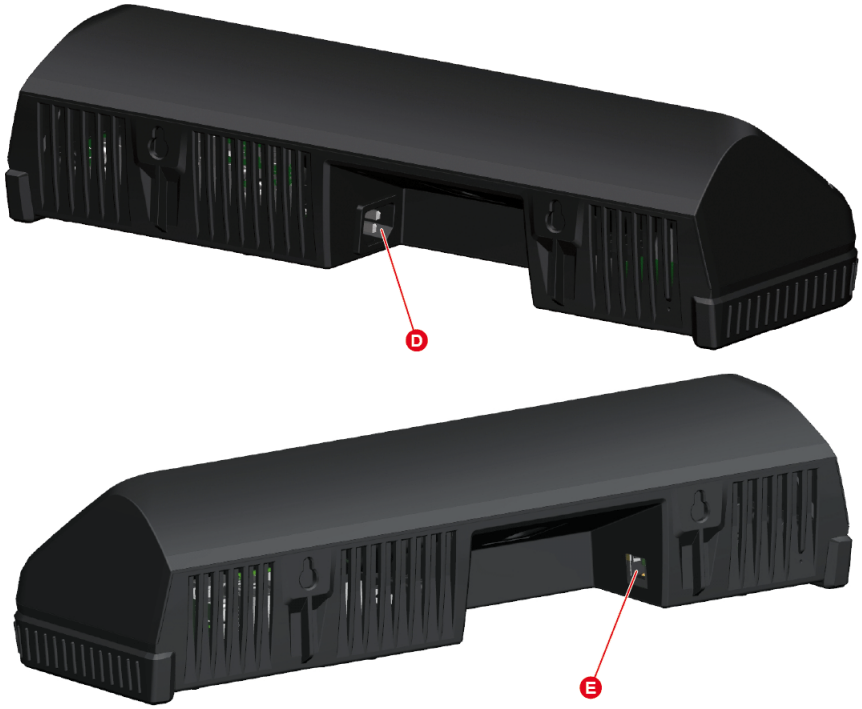
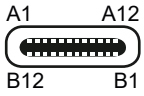


Figure 156: Charger – Operating Elements (rear)

A	USB connector (USB Type-C)
B	USB connector (USB Type-A)
C	5× charging slots for Batteries or Beltpacks
D	IEC mains connector
E	Network connector (RJ45, future use)

USB Type-C

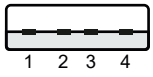


Pin	Description	Pin	Description
1	GND	7	Dn1
2	SSTXp1	8	SBU1
3	SSTXn1	9	VBUS
4	VBUS	10	SSRXn2
5	CC1	11	SSRXp2
6	Dp1	12	GND

Figure 157: USB Type-C

The USB connector is used to update the firmware and to charge an additional Bolero Beltpack or any other USB device. The maximum output current is 1.5 A.

USB Type-A

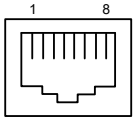


Pin	Description
1	VBUS
2	D-
3	D+
4	GND

Figure 158: USB Type-A

The USB connector is used to update the firmware and to charge an additional Bolero Beltpack or any other USB device. The maximum output current is 1.5 A.

RJ45



Pin	Description
1	D1+
2	D1-
3	D2+
4	D3+
5	D3-
6	D2-
7	D4+
8	D4-

Figure 159: RJ45

The RJ45 port supports links up to 100 Mbps and is reserved for future use.

5.2 Status LEDs

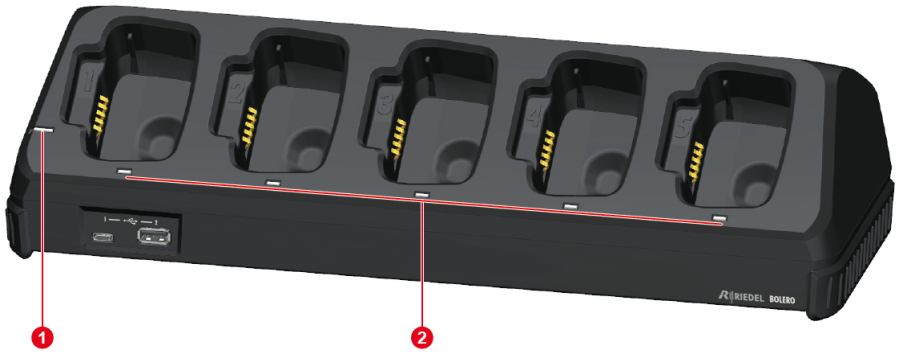


Figure 160: Charger – Status LEDs (top)

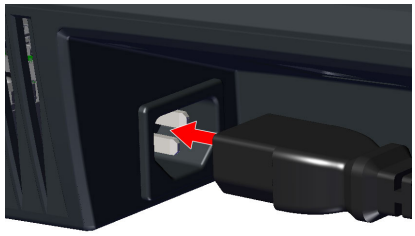
1	**System**	***off***	no input power
		orange	booting
		green	Charger ready
2	**Slot (1 … 5)**	***off***	slot empty, not charging
		orange blinking	charging, battery level 0–89% charged
		green blinking	charging, battery level 90–99% charged
		green	battery 100% charged
		red fast blinking	battery failure (not chargeable)

Figure 161: Charger – Status LED (rear)

3	**Ethernet**	***off***	no data connection
		green	data connection ok
		green blinking	data connection ok, traffic

5.3 Charging Batteries

- Connect the Charger to mains.
  The System-LED indicates the overall status.

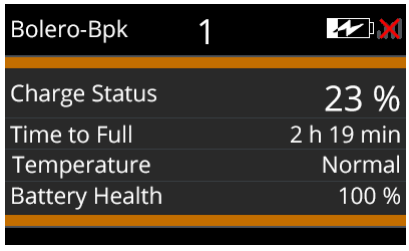


- Push the Beltpack or the battery in one charging slot.

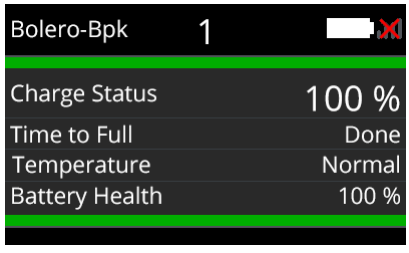
i	The Beltpacks' radio is switched off when the Beltpack is plugged into the Charger.

- The charging procedure will start automatically.
- The corresponding Slot-LED shows the charging state.

- The Beltpack's display shows the charging state.



- When the Beltpack is fully charged, the display shows the following content.
- Remove the Beltpack or battery out of the Charger.



5.4 Technical Drawing

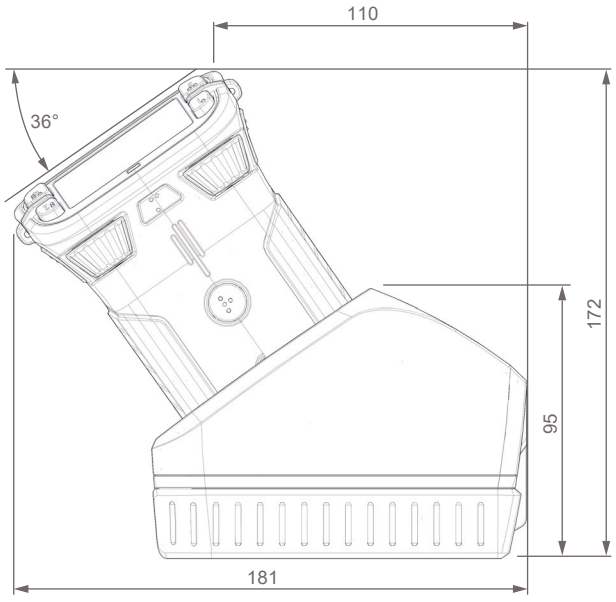


figure 162: Charger (right), dimensions in millimeter

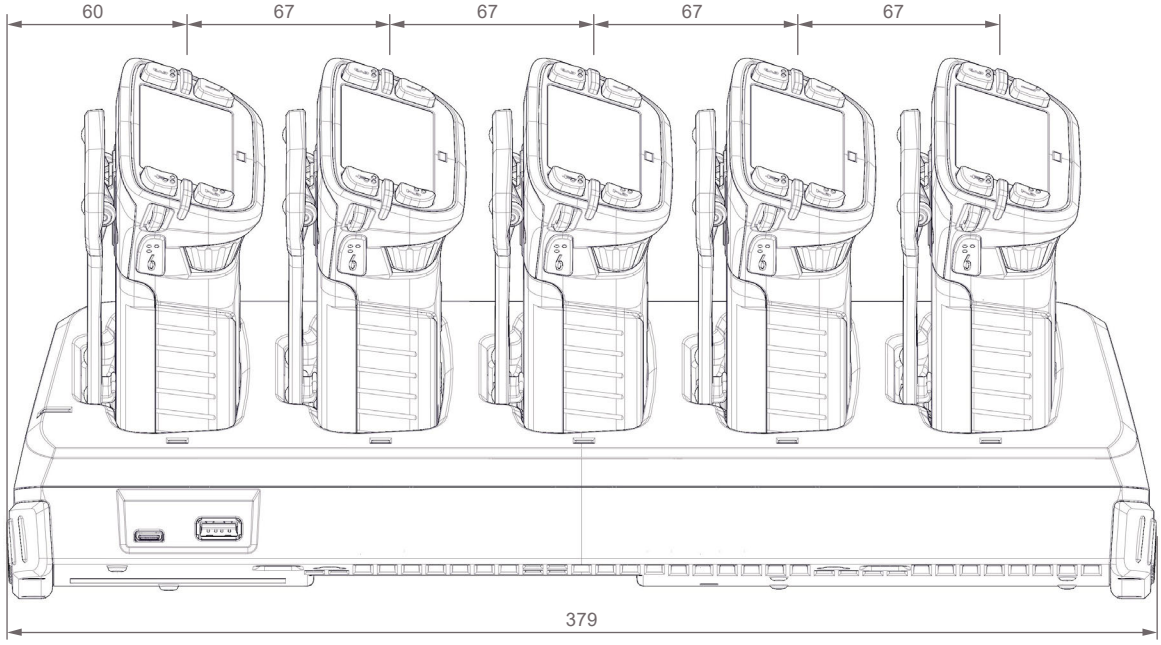


figure 163: Charger (front), dimensions in millimeter

5.5 Technical Specifications

Charger Product Code	BL-CHG-1005-R	
No of Beltpack slots	5	
Beltpack Charge Time	up to 180 minutes	
Charge status LEDs	1 per charge slot	
Beltpack Display	% charged, time to full, temperature, battery health	
USB Type-A / USB Type-C Connection	• For firmware update • For charging a Beltpack, a phone, etc. via cable • Max. 1.8 A (each port)	
Power Socket	1x IEC	
Power Supply	100 ... 230 VAC / 50 ... 60 Hz	
Mounting	Stand-alone table mount, 2x wall mounts or 19” rack via optional accessory kit "BL-RMK-1002-01" (1430045)	
Dimensions	Width	380 mm / 15"
	Height	95 mm / 3.8"
	Depth	135 mm / 5.3"
Weight	1140 g	
Operating Environment	Ambient Temperature	0° ... +45°C
	Humidity	20 % ... 90 % rel. (non-condensing)
Storage Temperature	-20° ... +70°C	

6 Appendix

6.1 Glossary

ANT	Antenna
ARI	**A**ccess **R**ight **I**dentity allows identifying a system or service provider.
BPK	Beltpack
CHG	Charger
DECT	DECT (**D**igital **E**nhanced **C**ordless **T**elecommunications) is an international standard for cordless radio communications.
NFC	**N**ear-**F**ield **C**ommunication is a transmission standard that enables wireless data transfer.
NTP	**N**etwork **T**ime **P**rotocol is a networking protocol for clock synchronization between computer systems over packet-switched networks.
OTA	**O**ver **T**he **A**ir
PTP	**P**recision **T**ime **P**rotocol is a network protocol for synchronization of clock settings of multiple devices in a network.
RPN	**R**adio fixed **P**art **N**umber
Vox	**V**oice **O**perated e**X**change, is a switch that operates when sound over a certain threshold is detected.

6.2 Maintenance Recommendations

Following points are strongly recommended to prevent malfunction of the system.

Yearly

Check the capacity of the battery and replace it if necessary.

6.3 Service

If you have any further questions, we offer comprehensive customer service options for this product including:

- Telephone Service
- Email Service
- Fax Service
- Configuration Support
- Trainings
- Repair

Your primary point of contact for any service issues is your local dealer.
In addition, Riedel Customer Service in Wuppertal, Germany is also available to assist you.

Telephone: +49 (0) 202 292 9400
(Monday - Friday, 8am – 5pm, Central European Time)

Fax: +49 (0) 202 292 9419

Or use the contact form on our website:
www.riedel.net > Company > Contact > Wuppertal (Headquarters)

For repairs, please contact your local dealer. Your dealer will be able to help process your repair as fast as possible and/or arrange for the delivery of spare parts.

The address for repairs sent directly to Riedel Communications GmbH is:

Riedel Communications GmbH & Co. KG
- Repairs -
Uellendahler Str. 353
D-42109 Wuppertal
Germany

Please add a completed repair form to all your repairs.
The form can be found at the Riedel website:
www.riedel.net > Services > Repairs

6.4 Notes

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