

Bolero

Release Notes

Release 3.5.1
Rev 1.1

Important Information

Please Note The Following

Upgrading From Earlier Versions

The Network Space configuration and the antenna configuration is preserved when updating from version 1.0.x/1.1.x/1.2.x/2.0.x/2.1.x/2.2.x/3.0.x/3.1.x/3.2.x/3.3.x/3.4.x/3.5.0. Configurations saved with one of these older versions can be loaded in version 3.5.1.

Updating From Version 1.x.x

If you plan to use Standalone/Link Mode with Link Power, you should update the system from version 1.x.x while the antennas are powered via XLR. Before an antenna can be powered via Link Power or deliver power over the links after an update, it must be powered by XLR for at least a couple of minutes (to complete the update of the remote power controller firmware).

Updating From Version 1.0.x

Bolero antennas running version 1.0.x have to be updated twice to this version. After a successful update you will see the package version 3.5.1 in the "Current Firmware" column of the Firmware Manager.

Downgrading From This Version

When downgrading to a previous version, the Network Space, antenna configurations, and the IP address settings will be lost. Saved configurations of this version cannot be loaded on previous versions. Note that you cannot downgrade from this version to a version earlier than 3.0.0 (1.x.x, 2.x.x) directly, you have to downgrade to 3.0.0 first and then downgrade to 1.x.x/2.x.x in a second step. Note that after a downgrade, any downgraded chargers won't be accessible in the Web Interface any more.



Contents

1	New Features	4
1.1	New Features in Release 3.5.0	4
1.1.1	Bolero Mini Support	4
1.1.2	New StageLink Edge NSA-008A Device Support	4
1.1.3	New Beltpack Hardware Support	4
1.1.4	Double Press: Mute	4
1.1.5	Security Improvements	4
1.1.6	Web Interface Improvements	5
2	Fixed Bugs	6
2.1	Fixed Bugs in Release 3.5.1	6
2.1.1	Charger USB Update Failures	6
2.1.2	Installing Multiple Licenses	6
2.2	Fixed Bugs in Release 3.5.0	6
2.2.1	Bluetooth Volume Change Via Rotary	6
2.2.2	Missing Quick Menu Entries	6
2.2.3	Edit Audio Channel View Update	6
2.2.4	External (PTT) Keys Not Working Without a Headset	6
2.2.5	Notification Pattern Issues	6
2.2.6	Possible Erratic Behavior in Long Running Systems	6
2.2.7	No Audio on PunQtum Audio Channels	7
2.2.8	Audio Dropouts And Fake Disconnect/Connect Events During Handover	7
3	Known Issues/Limitations	8
3.1	PTP TimeTransmitter Restrictions (Integrated/Artist Mode)	8
4	Further Information	9
4.1	Standalone Mode	9
4.1.1	Topology	9
4.1.2	Partylines	10
4.1.3	Key Functions	10
4.1.4	Always-On / Trigger / On-Talk / On-Notification/Beep / On-VOX Functions	12
4.1.5	IO Devices	12
4.1.6	Audio Channels	13
4.1.7	Triggers	14
4.2	Used IP Multicast Groups	15
4.3	Licenses	15
4.4	Versions & Compatibility	16
4.5	Charger & Beltpack USB Update	16

1 New Features

1.1 New Features in Release 3.5.0

1.1.1 Bolero Mini Support

The new Bolero Mini Beltpack is supported by this firmware version, the DECT variant (DECT-M) as well as the 2G4 one (2G4-M). It features four programmable keys, two dedicated volume increase / volume decrease keys (keys 4 / 3) and a Hirose HR10 6-pin headset connector.

DECT Bolero Mini Beltpacks can also connect to Bluetooth headsets and to mobile devices or PCs via Bluetooth. The functionality can be activated in the Web Interface.

To initiate a pairing with a Bluetooth device turn the Bolero Mini Beltpack off, then on again and keep the power button pressed for 5 seconds until the status LED starts blinking red/green. To confirm a pairing, push the power button shortly once the status LED is blinking orange/green.

To delete an existing pairing turn on the Beltpack and keep the power button pressed for 5 seconds until the status LED blinks red three times.

Some Standard Beltpack functionality is not available on the Bolero Mini Beltpacks. They do not have a display, no Beltpack menu, no internal microphone and speaker, no line in, no rotaries and no External Push-To-Talk (PTT) key support.

1.1.2 New StageLink Edge NSA-008A Device Support

The new Riedel StageLink Edge NSA-008A device is supported by this Bolero package in Standalone/AES67 and Standalone/Link modes. It features 6×Universal Input, 6×Universal Output, USB, 6×GPI In and 6×GPI Out. The new NSA can be configured and added as IO Device via the Web Interface, same as the existing StageLink Edge NSA and PunQtum devices.

1.1.3 New Beltpack Hardware Support

This firmware version supports the new Beltpack hardware revision G2/G2F, as well as all older Beltpack hardware. The new hardware introduces an upgraded display and some other mechanical modifications to improve the handling of the Beltpack.

The new G2/G2F hardware is **not compatible** with older firmware versions, it requires firmware version 3.5.0 or higher!

1.1.4 Double Press: Mute

This Bolero version introduces a new key setting: Double Press - Mute. It can be activated in Standalone/AES67 and Standalone/Link mode for keys configured with the Talk, Talk - Always Listen, Talk & Listen, Listen or Monitor key functions. Double pressing the key on the Beltpack quickly will mute or unmute the audio coming from the key destination.

1.1.5 Security Improvements

Some security improvements were implemented in this release. These are the most important changes:

- **Admin Password:** An alphanumeric password, at least 8 characters long, is now required to access settings in the Web Interface instead of the 4-digit Admin Pin. This password has to be defined when a new Network Space is created or when an existing Network Space is accessed by the Admin for the first time after updating to this version. The Admin Pin is still used for the admin functionality on the Beltpacks.
- **Brute Force Protection:** Entering a wrong Web Interface password five times will block the originating IP address, preventing a malicious client from trying to guess the password indefinitely. The Web Interface can still be accessed by using e.g. a different PC. All blocked IP addresses are listed and can be individually unblocked in the Cyber Security - Access Control section of the System Logs tab. The list of blocked IP addresses is also cleared when the whole Network Space is rebooted.
- **Web Encryption:** The secure HTTPS protocol can now be activated for Web Interface access by enabling the "Enable Web Encryption" setting in the Network Management section of the Edit Network Space view. Note that your browser may still warn about the used self-signed certificate.
- **Signed Firmware Update Packages:** Only unmodified firmware update packages issued and signed by Riedel are accepted when updating the Bolero system. Downgrading to an officially released older package is also possible.

1.1.6 Web Interface Improvements

Some minor bugs were solved, translations updated, improvements made and some new features were implemented in the Web Interface. These are the most important changes:

- **Beltpack Configuration Differences to the Profile:** In the Edit Beltpack Settings view, settings that are different than the Profile default are marked by coloring the setting name green. Note that before applying a setting change, the changed settings are marked blue regardless of the Profile default.
- **Beltpack Configuration Reset to Profile:** In the Edit Beltpack Settings view, blocks of settings can be reset to the Profile defaults by clicking the curved arrow icon in the top right corner of the setting section.
- **Beltpack Description:** A Beltpack description (arbitrary text) can now be configured in the Edit Beltpack Settings view, similar to the antenna, Charger and IO Device descriptions.
- **Unassigned StageLink Edge NSA IP Address:** The IO Device Information view for an unassigned StageLink Edge NSA device now shows the IPv4 address of the device instead of the IPv6 address.
- **DECT Beltpack Radio Monitoring Connected Antenna:** The name of the Bolero antenna the Beltpack was connected to when taking a measurement is now shown above the Timeslot Map in the Snapshot section of the Beltpack Radio Monitoring View.

2 Fixed Bugs

2.1 Fixed Bugs in Release 3.5.1

2.1.1 Charger USB Update Failures

When updating a Bolero charger via a USB flash drive, there was a possibility that the update package file on the USB flash drive could become corrupted during the process. Although the update would complete successfully, any subsequent updates using the same USB flash drive would fail until the update package was copied to the drive again. This issue first appeared in version 3.5.0 and has been fixed in the current version.

2.1.2 Installing Multiple Licenses

The installation of new licenses only worked for the antenna directly connected to the Web Interface. Any additional licenses in the license file for other antennas in the same network segment could not be installed. This has been corrected in this release.

2.2 Fixed Bugs in Release 3.5.0

2.2.1 Bluetooth Volume Change Via Rotary

It was not possible to change the Bluetooth input volume by pressing the Menu button on the Beltpack and then using the rotaries. Although the display showed the correct text, the headset volume was adjusted instead. This was fixed, the correct volume is adjusted now.

2.2.2 Missing Quick Menu Entries

Changing the order of the Quick Menu entries using the Web Interface led to the entries dragged with the mouse to be removed from the Quick Menu entirely, as if they were intentionally deleted. This behavior was changed, reordering the Quick Menu entries in the Web Interface is possible now.

2.2.3 Edit Audio Channel View Update

The settings in the Edit Audio Channel view were not updated when the channel was changed to a different one in the drop down menu on top, the view still showed the settings of the old channel. This was corrected in this release.

2.2.4 External (PTT) Keys Not Working Without a Headset

External (PTT) keys worked only if a headset or an RSM was connected to the Beltpack, preventing the use of external (PTT) keys with e.g. just the speaker active. This behavior was changed in this version, no headset is needed any more to use external (PTT) keys.

2.2.5 Notification Pattern Issues

The actual pattern played out did not match the selected pattern in all cases, sometimes the first beep sound in each iteration was too long.

Furthermore it was possible that the notification pattern got stuck in an endless loop and did not stop playing when the beep notification was disabled and just vibration and/or light was active.

Both issues were corrected in this release.

2.2.6 Possible Erratic Behavior in Long Running Systems

There was an issue that could in rare cases cause erratic behavior in long running systems, e.g. configuration changes were not stored any more, firmware updates failed, etc. The workaround was a reboot of the complete system, after which everything worked again. The root cause of this issue was identified and corrected in this version.

2.2.7 No Audio on PunQtum Audio Channels

When using some rare, specialized PunQtum Channel assignments it could happen that no audio was transmitted from PunQtum to Bolero on some channels. This was fixed in this version.

2.2.8 Audio Dropouts And Fake Disconnect/Connect Events During Handover

In rare cases Beltpack audio dropouts and frequent fake Beltpack disconnected / Beltpack connected events could be observed during Beltpack handover. This happened in bigger Network Spaces when parts of the IP network were a bit unstable or when antennas were frequently added and removed. This issue was corrected in this release.

3 Known Issues/Limitations

3.1 PTP TimeTransmitter Restrictions (Integrated/Artist Mode)

In order to guarantee excellent radio performance, the Bolero system needs a very accurate synchronization source, which can be provided by any Bolero antenna acting as PTP Grandmaster. Alternatively, an external 3rd Party Grandmaster can be used. The Artist AES67-108 Client Card, although capable to act as a PTP TimeTransmitter, cannot be used to provide the reference clock for a Bolero system. The Bolero antennas have a better clock class than the Artist AES67-108 Client Cards and thus have higher priority.

If you change the Bolero Network Space PTP mode to TimeReceiver Only, please make sure that the PTP mode on all Artist AES67-108 Client Cards in the same Ethernet Network are also set to TimeReceiver Only and that an appropriate PTP Grandmaster is available.

4 Further Information

4.1 Standalone Mode

In addition to the Integrated/Artist system mode (the only mode in versions 1.x), a Bolero system can also be used without an Artist mainframe in Standalone/Link or Standalone/AES67 mode. All control functions and audio mixing are done by the antennas of the Bolero system when operating in Standalone mode. All settings are configured using the Web Interface. A set of Beltpack key functions is available (see 4.1.3), furthermore Always-On, Trigger, On-Talk, On-Notification/Beep and On-VOX functions (see 4.1.4) and IO Devices (see 4.1.5) are supported.

The following sections describe some aspects of the Bolero Standalone modes in more detail.

An existing Bolero Network Space can be switched to Standalone/Link mode, Standalone/AES67 mode or back to Integrated/Artist mode in the Web Interface Net Settings view or via the antenna display. The system mode can also be selected while creating the Network Space.

Note that a Standalone license has to be available on at least one antenna in the Network Space to use the Standalone/Link or Standalone/AES67 mode. If the only antenna with a Standalone license in a running system fails, the rest of the Network Space will still function until all antennas are turned off or rebooted simultaneously.

New license files obtained from Riedel can be installed using the License Manager view in the Web Interface.

Also note that antenna hardware version G2 (Rev. 11.xx) is required to use the Standalone mode. DECT antennas with older hardware versions (G1 / Rev. 10.xx) do not support this feature.

Regardless of the system mode, the antennas forming a Bolero Network Space communicate over IP among each other, so the IP settings on all antennas have to match (i.e. the same Control Multicast IP Address, all DHCP or all Static in the same net range, etc). Otherwise the Bolero Network Space will not be operational (the antennas won't "see" each other). The IP settings can be changed via the Web Interface or on the antenna display.

4.1.1 Topology

Standalone/Link mode and Standalone/AES67 mode offer the same features, the only difference is the nature and topology of the antenna connections. While Standalone/Link mode uses a configuration-free, redundant, proprietary ring topology with optional power distribution, Standalone/AES67 mode relies on standard Gigabit Ethernet connections and switches between the antennas.

4.1.1.1 Standalone/Link Mode Topology In Standalone/Link Mode all antennas of a Network Space have to be connected via the Link 1 and Link 2 plugs in a ring topology (connect Link 1 to Link 2 of the next antenna). Such a ring is redundant, the system will still work if the ring is opened at one arbitrary point (daisy-chain topology).

A PC to access the Web Interface can be connected to any antenna in the ring (directly or via an existing Ethernet infrastructure). IO Devices (e.g. NSA-002A, PunQtum Q210 P Speaker Station, etc.) can also be directly connected to some antennas in the ring. Otherwise the AES67 / Config ports are not used in Standalone/Link mode.

To synchronize IO Devices connected to the AES67 / Config port, PTP is enabled on each antenna. The PTP domain can be changed in the Net Settings view, Hybrid or TimeReceiver Only PTP modes are not available in Standalone/Link mode.

By using a BL-EPS-1005-00 power supply for an antenna in Standalone/Link Mode, it is possible to use Link Power to supply up to two additional antennas on each link of the antenna, i.e. a total of 5 antennas can be powered by a single BL-EPS-1005-00 PSU (2-1-2 configuration).

Although a maximum cable length of 300m between two antennas is allowed for normal communication, for the Link Power feature to work the cable between two antennas is restricted to a maximum impedance of 17Ω. The current impedance of each Link can be monitored in the antenna information view in the Web Interface. Use better or shorter cabling and/or fewer connectors to reduce impedance.

Multiple antenna power options (XLR, PoE+, Link 1 Power, Link 2 Power) can be used together to facilitate redundancy. Switching from a failed power source to a different one happens automatically and without interrupting antenna operation.

4.1.1.2 Standalone/AES67 Mode Topology In Standalone/AES67 Mode all antennas of a Network Space have to be connected via Ethernet (min. 1Gbit/s) to one or more Ethernet switches using the AES67 / Config plug (like in Integrated/Artist Mode).

A PC to access the Web Interface or IO Devices (e.g. NSA-00XA, NSA-010C, PunQtum Q210 P Speaker Station) can be connected to the same Ethernet infrastructure the antennas are using. No IP configuration is needed for NSA devices or PunQtum Q210 P Speaker Stations, the devices and antennas use automatic ZeroConf addresses to communicate. The Link 1 and Link 2 ports are not used in Standalone/AES67 mode.

PTP is used to synchronize all antennas and IO Devices, the PTP settings (domain, mode, ...) can be changed in the Net Settings view.

4.1.2 Partylines

As opposed to Point-to-Point communication, Partylines can be used to let multiple Beltpacks (and/or Audio Channels) communicate in a group. Up to twelve separate Partylines can be configured in a Bolero Network Space, each of which can be individually named. With an Extended Partylines license present in the Network Space the total number of Partylines can be increased to thirty-two.

Usage Examples (see 4.1.3 for details on key functions):

To let a Beltpack join a Partyline, just configure a "Talk - Always Listen" key with the Partyline as destination (this will make the Beltpack automatically listen to the Partyline).

An output Audio Channel can be used to forward all conversations on a Partyline to an external audio device (e.g. a speaker) by configuring an Always-On Listen function with the Partyline as destination on the Audio Channel.

By configuring a Trigger Talk function with the Partyline as destination on an input Audio Channel, this Audio Channel will forward the incoming audio to the Partyline when the selected Trigger is active (similar to pressing a Talk key on a Beltpack).

A 4-Wire Audio Channel with a "Talk - Always Listen" Always-On function with a Partyline as destination can be used to integrate an external analog party line into Bolero. A 4-Wire Audio Channel will not loop audio from its input to its output. An Input Trigger activated Notification/Beep function with the Partyline as destination can bring an external "Light Call" to the Bolero Beltpacks. A Set Trigger function configured in the On-Notification/Beep function section of the 4-Wire Audio Channel can be used to activate an Output Trigger (GPO pin) when the Notification/Beep was initiated by a Bolero Beltpack.

4.1.3 Key Functions

The following key functions are available in Standalone mode:

Function	Destination	Notes
None	-	does nothing
Talk	Beltpack, Partyline, Audio Channel (Output, 4-Wire)	Beltpack talks to the destination when the key is active
Talk - Always Listen	Partyline	Beltpack talks to the Partyline when the key is active; always listens to the Partyline
Talk & Listen	Partyline	Beltpack talks and listens to the Partyline only when the key is active
Listen	Beltpack, Partyline, Audio Channel (Input, 4-Wire)	Destination microphone is forced open and the Beltpack listens to the destination when the key is active; can only be configured in the Web Interface
Monitor	Beltpack, Partyline, Audio Channel (Input, 4-Wire)	Beltpack listens to the destination when the key is active and the destination speaks to someone; can only be configured in the Web Interface
Monitor Select	-	Press and hold this key, then press a Talk key to start or stop monitoring the Talk key destination (Beltpack, Partyline, Audio Channel); can only be configured in the Web Interface
Notification/Beep	Beltpack, Partyline, Audio Channel	Initiate a specific Notification/Beep indication pattern on the destination
Notification/Beep Select	-	Press and hold this key, then press a Talk key to initiate a Notification/Beep indication on the Talk key destination (Beltpack, Partyline, Audio Channel)
Reply	automatic	Beltpack talks to the source of the most recent incoming call (Beltpack, Partyline or Audio Channel) when the key is active
Menu Shortcut	menu entry	Jump to a specific entry in the Beltpack menu when pressing the key (e.g. Walk Test Pro, Lock Keys, etc.); same as a Quick Menu entry
Toggle Setting	specific setting	Toggle a specific setting when pressing the key (e.g. Speaker On/Off)
Monitor Trigger	Trigger (Input, Output, Virtual)	Show the state of the Trigger on the Beltpack screen (active: thick white line, inactive: thin gray line)
Set Trigger	Trigger (Output, Virtual)	Trigger is active as long as the key is active; Trigger may be active even if the key is released when there is another source activating the Trigger (other key, etc.)
Volume Increase	volume selection	Increase the selected volume(s); same as turning a rotary to the right
Volume Decrease	volume selection	Decrease the selected volume(s); same as turning a rotary to the left
Mute Microphone	-	Mute the microphone as long as the key is active; a.k.a. "cough button"

Talk, Talk - Always Listen, Talk & Listen, Listen and Monitor functions have an additional Priority setting (Standard, High, Low).

High Priority means that all **other** audio signals to the sink are dimmed when the high priority function is active.

Low Priority means that **this** audio signal is dimmed if the sink receives any other (standard or high priority) active audio signal.

How much the signals are dimmed can be adjusted in the Audio Settings for each Beltpack or Audio Channel ("Priority Dim" setting). Note that "sink" is the destination in case of a Talk, Talk - Always Listen or Talk & Listen function and the own Beltpack / Audio Channel in case of a Listen or Monitor function. The listening part of a Talk - Always Listen or Talk & Listen function always has standard priority.

4.1.4 Always-On / Trigger / On-Talk / On-Notification/Beep / On-VOX Functions

Different types of additional functions can be configured for Beltpacks and Audio Channels (note that all these functions can only be active if the Beltpack is connected or the Audio Channel itself is active):

- **Always-On:** Activated whenever and as long as the Beltpack is connected or the Audio Channel is active
- **Trigger:** Activated whenever and as long as the selected Trigger is in state "high"
- **On-Talk:** Activated whenever and as long as someone is talking to the Beltpack or Audio Channel (output and 4-Wire channels only)
- **On-Notification/Beep:** Activated whenever and as long as someone is "beeping" the Beltpack or Audio Channel (output and 4-Wire channels only)
- **On-VOX:** Activated whenever and as long as the VOX is active (e.g. somebody is talking into the microphone) on the Beltpack or Audio Channel (input and 4-Wire channels only)

A maximum of 5 functions per function type can be defined for each Beltpack or Audio Channel.

The available functions are a subset of the key functions (see 4.1.3) and operate accordingly.

4.1.5 IO Devices

Using IO Devices, analog and digital audio channels or PunQtum partylines as well as GPIs, GPOs and other control signals can be integrated into a Bolero Network Space.

An IO Device configuration can be created via the Web Interface IO Devices tab anytime, without real hardware having to be present. This configuration can then be assigned to an online device later.

Depending on the settings in the configuration (user defined in the Bolero Web Interface in case of an NSA or automatically taken over from the PunQtum system in case of the PunQtum Q210 P Speaker Station), Audio Channels (see 4.1.6) and Triggers (see 4.1.7) are automatically created.

Note that a maximum of two IO Devices (NSAs and/or PunQtum Q210 P Speaker Stations) can be connected to each antenna (e.g. by daisy-chaining the second NSA to the first NSA or via normal Ethernet network infrastructure).

Also note that a maximum of 128 audio sources are allowed per Bolero Network space in Standalone mode. This is a combination of connected Beltpacks (max. 100) and active input or 4-Wire Audio Channels. The number and type of used Audio Channels on each IO Device can be changed in the IO Device edit view (for NSAs) or via the System Interconnection Patch settings in the PunQtum Q-Tool software (for PunQtum systems).

4.1.5.1 NSA-002A The NSA-002A is an interface device allowing to integrate six analog input and six analog output audio channels as well as three GPIs and three GPOs into a Standalone Bolero Network Space.

To connect an NSA-002A device to the Bolero system, power it up, make sure Bolero mode is active (top LED is blue) and connect it directly to the AES67 / Config port of an antenna (Standalone/Link mode) or to the used Ethernet infrastructure (Standalone/AES67 mode). No IP configuration is necessary. The NSA-002A will show up in the IO Device tab of the Bolero Web Interface and can then be assigned to an existing or a new IO Device configuration.

4.1.5.2 StageLink Edge NSA Devices Various StageLink Edge NSA devices can be connected to the Bolero system by connecting them directly to the AES67 / Config port of an antenna (Standalone/Link mode) or to the used Ethernet infrastructure (Standalone/AES67 mode). No IP configuration is necessary. The NSAs will show up in the IO Device tab of the Bolero Web Interface and can then be assigned to an existing or a new IO Device configuration. Different Audio Channels and/or GPIs are supported by the different device types.

The following StageLink Edge NSA devices are currently supported:

- **NSA-003A:** 2×Analog Partyline, USB, 3×GPI In, 3×GPI Out

- **NSA-004A:** 4×Universal Input, USB
- **NSA-005A:** 4×Universal Output, USB
- **NSA-006A:** 1×Universal Input, 2×Universal Output, USB, Headphone, 3×GPI In, 3×GPI Out
- **NSA-007A:** 2×Universal Input, 2×Universal Output, USB, 3×GPI In, 3×GPI Out
- **NSA-008A:** 6×Universal Input, 6×Universal Output, USB, 6×GPI In, 6×GPI Out
- **NSA-010C:** 16×GPI In, 16×GPI Out

4.1.5.3 PunQtum Q210 P / Q210 PW Speaker Station A PunQtum Speaker Station allows to integrate a PunQtum system into a Standalone mode Bolero Network Space. Up to six bidirectional audio connections as well as six input and six output controls can be shared between the PunQtum system and the Bolero Network Space.

The Bolero Audio Channel and Trigger setup of an integrated PunQtum system is derived automatically from the System Interconnection Patch settings of the running PunQtum configuration when the PunQtum Speaker Station connects to a Bolero antenna for the first time. No manual Trigger or Audio Channel creation is necessary on Bolero side.

Once the Audio Channels and Triggers are automatically created, they can be configured and used with intercom functions the same way as NSA Audio Channels and other Triggers, e.g. by configuring an On-VOX "Talk - Always Listen" function with a Bolero Partyline as destination on a PunQtum Partyline channel to merge both Partylines into one. Note that some Audio Channel settings (mute, gain, etc.) might be different or not available on PunQtum audio channels compared to NSA audio channels.

As with the NSA devices, no IP configuration is necessary to connect a PunQtum Speaker Station to a Bolero antenna as long as both are in the same local Ethernet network. The System Interconnect feature has to be turned on in the PunQtum system and a System Interconnection Patch has to be configured and selected on the PunQtum Speaker Station, then it will show up in the IO Device tab of the Bolero Web Interface and can then be assigned to an existing or a new IO Device configuration.

Note that a PunQtum license is needed to integrate a PunQtum system into Bolero, see 4.3 for details.

4.1.6 Audio Channels

Audio Channels are automatically created by turning them on in the IO Device configuration or by connecting a PunQtum Q210 P Speaker Station. There are three types of Audio Channels: Input, Output and 4-Wire. A 4-Wire channel acts as audio source and audio sink simultaneously (similar to a Beltpack). Furthermore, the audio coming in via the 4-Wire channel is never looped out through the same 4-Wire channel (e.g. if talking and listening to a Partyline, "mix-minus").

Audio Channels are only active when the corresponding IO Device Configuration is assigned to a real IO Device hardware and this hardware is present and connected (the dot in the Locate column of the IO Device Configuration table in the Web Interface is green). The channel type icon in the Audio Channels table will be green or greyed out accordingly.

If an Audio Channel is removed by turning it off in the IO Device configuration (or removing it in the PunQtum System Interconnection Patch), it is also automatically removed from all assigned keys, Always-On functions, etc.; i.e. it is not existing any more (e.g. a Talk key to this Audio Channel will have no function after the channel was removed).

On the other hand, by disabling an Audio Channel in the edit Audio Channel view it is just prevented to become active, but all references to this Audio Channel are kept intact (e.g. a Talk key to this Audio Channel will not change, but the Beltpack user will get a "Not available" message when pressing it).

Some settings can be configured on all Audio Channels (e.g. name, enable), some settings are channel / device type or direction (input or output) specific: Input gain, input mute, VOX, phantom power, low pass filter, high pass filter, limiter (Input and 4-Wire Audio Channels); output gain, output mute, priority dim, low pass filter, high pass filter, limiter (Output and 4-Wire Audio Channels).

4.1.7 Triggers

There are three types of Triggers:

- **Input Triggers** are assigned to a GPI input pin or a PunQtum Control and always show the state of the pin / the PunQtum Control
- **Output Triggers** are assigned to a GPO output pin or a PunQtum Control; the pin / the Control is driven according to the Trigger state
- **Virtual Triggers** are not assigned to any physical pin or external Control but otherwise can be used like Output Triggers

Input and Output Triggers are automatically created by turning them on in the IO Device configuration or PunQtum System Interconnection Patch. Virtual Triggers can be created and removed via the Trigger table action menu.

Output and Virtual Triggers can be changed by the Set Trigger key function (or Always-On- / Trigger- / On-Talk- / On-Notification/Beep- / On-VOX-functions).

Triggers can be used to activate functions on Beltpacks or Audio Channels, activate GPO output pins, monitor GPI input pins or activate and monitor external PunQtum Control signals.

Note that once a Trigger is configured, it can be set and read in the entire Network Space. It is not limited to the IO Device where the associated physical pin is located.

When Input or Output Triggers are configured in an NSA IO Device configuration, the relationship between the Trigger (logical state) and the physical pin (physical state) can be defined by changing the Pin Mode. The following Pin Modes are available:

- **Normal:** Momentary action, logical state and pin state are equal
- **Latching:** Activation on first rising edge, release on second falling edge
- **Toggle:** Activation on first rising edge, release on second rising edge.
- **Auto:** Short (< 500 ms) high states act like Latching, longer ones like Normal mode (for e.g. speak while holding)

Furthermore, all the available modes can be inverted ("Invert Pin").

Note: See the IO Device configuration help in the Web Interface for more details.

4.2 Used IP Multicast Groups

In addition to the configured Beltpack audio multicast groups, Bolero uses the following multicast groups for normal operation:

Type	Address	Ports	Notes
Antenna Configuration / Discovery	239.202.29.2	30301 30304 30312	Changeable in Advanced Network Settings
Beltpack Discovery	239.202.29.3	30321	Integrated/Artist mode only
PTP	224.0.1.129 224.0.0.107	319 320	
Update	230.4.4.1 230.5.5.1	1044	
Topology Change	224.0.0.38	40000 40001	Standalone/Link mode only
Loop Detection	239.192.29.10	30181	Standalone/Link mode only
ZeroConf mDNS Discovery (Bonjour)	224.0.0.251 ff02::fb	5353 5353	Standalone mode only (IO Device detection)

Not all multicast groups are used all the time, e.g. the update multicast groups are only in use during firmware updates.

4.3 Licenses

Optional Bolero features can be activated by installing a license on an antenna in the Network Space. The following licensed features are available in this version:

Feature	Description	License Bundle
Standalone Mode	Use Bolero Standalone/AES67 and Standalone/Link system modes to allow Bolero intercom operation without any Artist frames.	Standalone
Extended Partylines	Allows up to 32 Partylines in Standalone mode instead of the standard 12.	Pro 1
Advanced Monitoring	Enables the DECT Scanner and Beltpack Monitoring features.	Pro 1
Custom Audio Filters	Custom audio filters can be created in the WebUI and used on all Beltpacks.	Pro 1
Charger Monitoring	Chargers can be added to a Network Space and provide additional status data about the inserted Beltpacks. The Charger behavior can be customized.	Pro 1
Beltpack Priority	Beltpacks can be prioritized in the Network Space and/or on individual Bolero antennas. Higher priority Beltpacks will forcefully disconnect lower priority Beltpacks if there is no free space on an antenna.	Pro 2
Individual Radio Power	The radio power of each Bolero antenna can be configured individually, i.e. differently than the rest of the Network Space.	Pro 2
PunQtum Support	PunQtum systems can be integrated into Bolero as IO Devices (similar to NSAs). A configured PunQtum Speaker Station is required to create the connection (see 4.1.5.3).	PunQtum

The previous Extended Partyline and Advanced Monitoring licenses are discontinued. Note that existing Extended Partyline and Advanced Monitoring licenses will be converted to Pro 1 licenses automatically, so the existing functionality will be kept and additionally all Pro 1 features like Custom Audio Filters and Charger Monitoring are available as well.

4.4 Versions & Compatibility

Please note that all antennas used in the same Network Space have to run the same version of the Bolero software. If software versions differ, the devices cannot communicate correctly and thus cannot work together. It is recommended to always use the latest firmware version.

Devices with different versions will be shown as incompatible in the Web Interface. Clicking the IP address of an incompatible device opens the Web interface on the device, allowing it to be updated to the same version as the rest of the net.

Please note that all BPs have to use the matching Beltpack software version included in the update package, otherwise they will not be able to connect to the Bolero antennas.

Package Version: 3.5.1-14

Beltpack Version: 3.5.1-14 (internal: V09.58.00)

Required Artist AES67-108 Card Version: Release 8.2 (element 8.2.CA1) or higher

Required Artist 1024 UIC Card Version: Release 8.2 (element 8.2.U1) or higher

Required NSA-002A Versions: 1.2.0-2ea62f6#68 or higher (NSA-002A G1), 2.0.9-8e2b4b7#64 or higher (NSA-002A G2)

Required NSA-003/4/5/6/7A Version: 1.1.0-26.a237a0a or higher

Required NSA-008A Version: 1.2.0 or higher

Required NSA-010C Version: 1.1.0-26.a237a0a or higher

Required PunQtum Q210 P Version: 2.01.0004 or higher

Required PunQtum Q210 PW Version: 2.01.0040 or higher

Note: Standalone/Link Mode requires hardware version G2 (Rev. 11.xx). Antennas with older hardware versions (G1 / Rev. 10.xx) do not support this feature.

Note: Since version 3.5.0 the firmware supports the new Beltpack hardware revision G2/G2F containing an upgraded display and some other mechanical modifications to improve the handling of the Beltpack. All older Beltpack hardware is supported as well. The new Beltpack hardware G2/G2F is in production since 2026 and is not compatible with older firmware versions, it requires firmware version 3.5.0 or higher!

4.5 Charger & Beltpack USB Update

Chargers can be updated using the Web Interface Firmware Manager or by using a USB stick.

To update a Bolero charger, copy the update package (bolero_vX.X.X-XX.package) to the root directory of a USB stick (FAT32 only, other file systems like NTFS or exFAT are not supported) and plug it into one of the front USB ports on the charger. The charger will automatically update and reboot afterwards.

Note: Please make sure that there is only one update package file (bolero_vX.X.X-XX.package) on the USB stick!

Furthermore, all Beltpacks placed in the charger will be updated (if they are running a different firmware version), as long as the USB stick is inserted.

Chargers with the Automatic Beltpack Update setting enabled in the charger configuration in the Web Interface will automatically update all Beltpacks to the same version the charger is using, even without an inserted USB stick. Beltpacks already running the correct version are skipped automatically.

Progress and status information regarding these updates can be viewed on the displays of the inserted Beltpacks. The simultaneous update of five Beltpacks in the charger takes approximately 40 minutes.

Riedel Communications GmbH
Uellendahler Straße 353 • 42109 Wuppertal • Germany
Phone: +49 (0) 202 292-90 • Fax: +49 (0) 202 292-99 99

www.riedel.net