

Bolero Beltpack

Quick Start Guide

A00



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 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.

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 radiofrequência 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).



The devices conforms to the EU guidelines

- EMV (EMC) 2014/30/EU
 - NSR (LVD) 2014/35/EU
 - RTTE (RED) 2014/53/EU
- as attested by the CE mark.



FCC IDs:

- YFJBPK100619

Industry Canada ICs:

- 8706A-BPK100619

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



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1 Preface

Thank you for choosing a Riedel product.

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

For further information, please download the full Bolero User Manual on the Riedel Website (www.riedel.net).
You need to login to access the download area (Services > Downloads)

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

NOTICE

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Bolero Beltpack Quick Start Guide

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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 moderate 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.
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Service


- All service has to be undertaken ONLY by qualified service personnel.
- There are no user serviceable parts inside the devices.
- Do not plug in, turn in 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 correctly grounded source.
- Do not use any adapters.
- Never bypass a ground contact.


Danger	
	<p>To reduce the risk of electric shock do not remove cover or expose the products to rain or moisture.</p>

Warning	
	<p>Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.</p>
	<p>Apparatet må tilkoples jordat stikkontakt.</p>
	<p>Apparaten skall anslutas till jordat uttag.</p>

Battery Safety

The Bolero-Beltpacks are operated with the following battery type: Lithium-Ion, 3.6V, 4.8Ah, 17.3Wh, 11CP7/39/65-2, 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	
	<p>There is a risk of fire and burns if the battery pack is handled improperly.</p> <ul style="list-style-type: none"> • 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.
	<p>Further recommendations:</p> <ul style="list-style-type: none"> • 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)

 	<p>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.</p>
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1.2 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.

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. 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 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 a Smartphone to be connected.

The Beltpack design with a combination of premium materials, including high-impact plastics and rubber overmolds make 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 hasselfree 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
- 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!

2 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.

2.1 Operating Elements



Figure 1: Beltpack (front/top and rear/bottom view)

A	Full color sunlight readable display
B	Lanyard or safety cord mounting holes
C	Walkie-Talkie keys 5+6 (side)
D	Rotary encoder (B)
E	Speaker
F	Microphones
G	Keys 1...4 (top)
H	Rotary encoder (A)
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, Charging sockets (3.5mm jack / USB Type-C)
R	Screw head mount and bottle opener
S	Removable battery pack

XLR-4 (male)

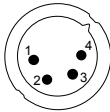


Figure 2: XLR 4 male

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

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/off according to the menu setting 'Audio > Headset Type'.

3.5mm jack (female)



Figure 3: 3.5mm jack female

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

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

USB Type-C

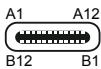


Figure 4: USB Type-C

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

The USB connector is used to charge the Backpack. Furthermore the connector is used for firmware updates.

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

2.2 Status LEDs



Figure 5: Beltpack (Status LED positions top)

Status-LED ¹

off	Beltpack is turned off	
green	on	<ul style="list-style-type: none"> Beltpack ready (System ok) USB charging, battery full
	blinking	USB charging, battery level 90-99%
red	on	<ul style="list-style-type: none"> booting Beltpack not registered/not connected low battery level outside the Antenna coverage area
	blinking	critical battery level (<30 minutes of operation)
	fast blinking	critical error (no function)
orange	blinking	USB charging, battery level 0-89%

Call-LEDs ² ³

off	no active call	
green	on	incoming call
orange	blinking	incoming notification/beep call

2.3 Getting Started

2.3.1 StartUp

Press the "Power" key firmly to power-up the device.

If the Beltpack is already registered in a Net, the Beltpack tries to establish a connection to it. An unregistered Beltpack shows "Not registered!" on the splash screen. Pushing the Menu key opens the **Registration** menu to register the Beltpack in a Bolero-Net.

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

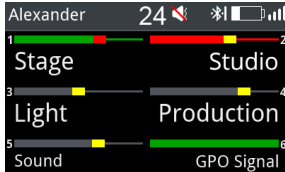


Figure 6: Main-View

Status bar	Beltpack name		Alexander
	Beltpack ID		24
	Mute icon		
	Bluetooth icon (optional)		
	Battery icon		
	Radio icon		
Main area	6 keys	key number	1...6
		Level meter	
		Channel name	Stage

2.3.2 Select Headset Type

Open the Beltpack Menu by pressing and holding (>2.5 sec.) the Menu key. Select the microphone type of the headset:

Audio > Headset Type: Auto Detect, Dynamic, Electret

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

Before a Beltpack can be connected 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.

As a consequence, a pure offline registration is not possible. Both the Bolero-Net and the Beltpack have to know that they are bound together. If either the Bolero-Net has no entry for the Beltpack or the Beltpack does not know the Bolero-Net, the Beltpack can never connect.

There are different ways to register a Beltpack to a Bolero Net (refer chapter [Registration Mode](#)).

To register a Beltpack in general to a Bolero Net...

- Push the the Menu key for >3 seconds (long key press).
- Navigate to the **Registration** menu.
If the Beltpack is not registered to any Net, the **Registration** menu is opened directly.
- Choose **Register to net**.

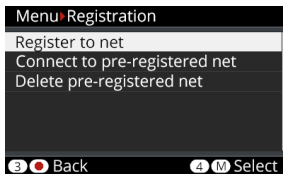




Figure 7: Registration menu

The Beltpack searches available Nets and shows them one at the time.



Figure 8: Net searching

- If "Next" is pressed, the current Net is blacklisted and the Beltpack will continue searching for other Nets.
- If "Select" is pressed, the Beltpack will start the authentication process (the Beltpack tries once to register with PIN "0000". If that fails, the user will be asked for the PIN).
- If "Back" is pressed, the Beltpack will stop searching and returns to the **Registration** menu.
- The Beltpack will continue searching for Nets until a Net is found or "Back" is pressed.
- The blacklist is cleared by reentering the **Registration** menu.

 	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.
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De-Registration

To completely de-register a Backpack from a net, the Backpack entry in the registered Backpack-List in the net has to be removed and the ARI (Access Right Identity) has to be removed from the net list in the Backpack. However, even if one of these entries is removed, the Backpack cannot connect to the net any more.

There are some different ways to de-register a Backpack:



The Admin Pin (defined in the web interface of the Antenna when creating the Bolero Net) is required in all cases.

- Web Interface: Select all Backpacks to be de-registered. The Backpacks are removed from the registered Backpack-List in the Bolero FW App. The Net's ARI is removed from the net list of all of these Backpacks if they are currently connected. Afterwards they are disconnected immediately.
- Antenna-Display: Same procedure as for the Web Interface.
- Backpack-Menu "Delete pre-registered Net": Select a Net to be removed from the list of nets on the Backpack. The Net is removed from the list and if the Backpack was connected to this Net it is immediately disconnected.

2.3.4 Registration Modes

The following modes are available to register a Backpack in a Bolero Net:

Local Backpack (Backpack to Backpack) NFC registration

This Registration mode allows to register a Backpack at an already registered Backpack via NFC (Backpack-NFC at Backpack-NFC).

- enabled in the Backpack-Menu using Registration or Admin Pin (Backpack has to be connected).
- This turns the local NFC of this ("master") Backpack into registration mode.
- Other Backpacks held near this ("master") Backpack are registered to the same net as the ("master") Backpack.
- these other Backpacks have to be turned on, no other special setting or user intervention is required.
- The ("master") Backpack stays in this mode until the user leaves the menu or the ("master") Backpack is disconnected (there is no timeout).
- After registration, the new Backpacks can immediately connect to the Bolero net.

Over the Air (OTA) registration

This Registration mode allows to register a Backpack at an already registered Antenna via DECT (Backpack-DECT at Antenna-DECT).

- enabled on the E-ink Display (Antenna), Web Interface or in the Backpack-Menu (note that the Backpack has to be connected and the Registration or Admin Pin is needed).
- this setting is system wide and stays active until disabled or the registration timeout runs out.
- the registration timeout can be changed (with the Registration or Admin Pin) on the E-ink Display, Web Interface or in the Backpack-Menu.
- the registration timeout is restarted each time a Backpack is registered.
- an OTA Pin can be specified (on the E-ink Display, Web Interface or in the Backpack-Menu) to restrict register access to authorized people.
- when an unregistered Backpack comes in range of a Bolero net where OTA-Registration is enabled, the Backpack user can choose to register the Backpack to the net. If specified, the OTA Pin has to be entered to do so.
- after registration, the Backpack can immediately connect to the Bolero net.

Antenna NFC registration

This Registration mode allows to register a Beltpack at an already registered Antenna via NFC (Beltpack-NFC at Antenna-NFC).

- enabled on the E-ink Display (Antenna), Web Interface or in the Beltpack-Menu (Beltpack has to be connected, Registration or Admin Pin needed).
- this setting is system wide and stays active until disabled or the registration timeout runs out (timeout is the same as for OTA).
- all Antenna-NFCs are switched to registration mode.
- the Beltpack-NFCs of connected Beltpacks are NOT switched to registration mode.
- Beltpacks held near any Antenna-NFC are registered to the net.
- these other Beltpacks have to be turned on, no other special setting or user intervention is required.
- after registration, the BP can immediately connect to the Bolero net



More information about Beltpack, Antenna and Charger can be found in the Bolero User Manual.

2.4 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	
Talk Controls	4 pushbuttons + reply key + 2 handheld keys (Momentary, latching & auto mode)	
Volume / Level Controls	2x Master or slave + menu navigation	
Display	High contrast sunlight readable full colour LCD	
Audio prompts	Out of range, Battery low, Belt pack registered	
No. of Full-Duplex Audio Paths	6 with individual level control	
Handheld Operation	Walkie-talkie mode	
Vibrate Module	Vibrate indicates incoming Call	
Internal Loudspeaker	Freq. <500Hz ... >7kHz 80dB/SPL/0.5W/1m, @ <5% THD	
Remote Health Monitoring	Battery charge status, remaining time	
Battery	Lithium Ion external removeable battery pack with user removeable clip	
USB Type-C	USB 2.0 connector	
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 & HSP - Headset 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 (inc. 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° ... +70°C	

3 Appendix

3.1 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](#)

3.2 Notes

