

# Riedel Bolero

## communications system

A Case Study Presentation for the  
ASC Future Practices Committee

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# Comms Systems

vs. conventional walkies

- Intercoms enable natural 2 way conversations because transmissions are duplex (two way)
- There is no need to wait for a channel to clear before speaking
- There's no need to change channels to speak with different departments. Communication is faster, with less accidental transmissions to the wrong crew
- Information relevant to more than one department is easy to distribute
- The department head leadership structure is preserved since the cinematographer is not broadcasting instructions to an entire department





# The Antenna

- E-Ink display is always on
- ‘Tap and go’ configuration of beltpacks via NFC
- Baby stand and 3/8” mounts
- 10 beltpacks per antenna
- 300-600 ft range indoors
- Up to 800 ft range outdoors
- 1.9 GHz frequency range
  - Operates outside the WiFi spectrum, which means no conflicts with wireless video, camera control, and lighting systems
  - A quiet digital signal. No hiss or pops





# The Antenna

- Configuration is done via a web browser through an ethernet connection. This can even be done from an iPad
- Up to 100 antennas can be networked together through direct or virtual ethernet links to expand the network to multiple stages and buildings
- Up to 100 belt packs can be used on a network
- DC power input





# The Antenna

- Can be powered by a standard block battery or an Anton Bauer Dionic so the system never goes down during a move
- Approximate 8 hour runtime on a Dionic. A lunchtime change covers the whole day
- An AC power supply can be used instead
- Pictured here is a Small HD Anton Bauer plate that bolts on perfectly





# Beltpacks

- A standard XLR port allows the use of any wired comms headset
- A line input brings a second audio source like a Comtek into the headset (not available over Bluetooth)
- USB C charging is possible if a user doesn't want to go to the group charger





# Beltpacks

- 7 configurable buttons
- 2 configurable rotary dials to control separate volumes
- Reply button automatically replies to the last direct caller
- Walkie talkie mode - an internal speaker and microphone allows use without any headset
- Battery life rated at a 16 hour runtime after 2 years of use
- The slot on the clip allows it to hang from a nail on a wall - or use it as a bottle opener





# Beltpacks

- Party Lines (PL's) = channels
- Up to 6 PL's or point to point connections can be monitored on a beltpack
- All beltpacks can transmit in full 2 way duplex conversation at any time, on any PL's or P2P connections
  - HME systems only allow 3-4 duplex transmissions at a time
- Every PL has an individual volume control, and can also be muted when monitoring is not desired
  - This makes communication easier for everyone else when a channel becomes very active, such as when camera operators are on a crane
- Transmit buttons can be push to talk, on/off latching, or both
- Any button can become any PL channel, based on user preference - or a button can become a menu function
- Sunlight readable display
- IP65, dust and water jet proof. Robust construction.





# Beltpacks

- 8 color coded covers available for quick identification
  - Black, white, blue, yellow, green, gray, violet, red
- A user name can be programmed on the display, or a generic OPERATOR 1, GAFFER, and so on.





# Bluetooth

- Nearly any earpiece can be used. The crew loves not wearing another wire and/or a bulky headset
- Plantronics Voyager 5200's have proven to be great
  - Very comfortable
  - Outstanding noise cancellation
  - > 6 hour battery life
  - At lunch, the crew switches to a second earpiece and puts the first in a charging case to be ready for the next day
- AirPods are compatible
  - One ear gets used at a time. When that battery gets low, the crew member switches to the other ear to charge the first
- It's also possible to connect a cell phone in order to transmit a phone call to partylines





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# My Partylines

**OPERATORS / DOLLY GRIPS**

**CAMERA ASSISTANTS**

**GRIP / ELECTRIC**



# My Partylines

OPERATORS / DOLLY GRIPS

CAMERA ASSISTANTS

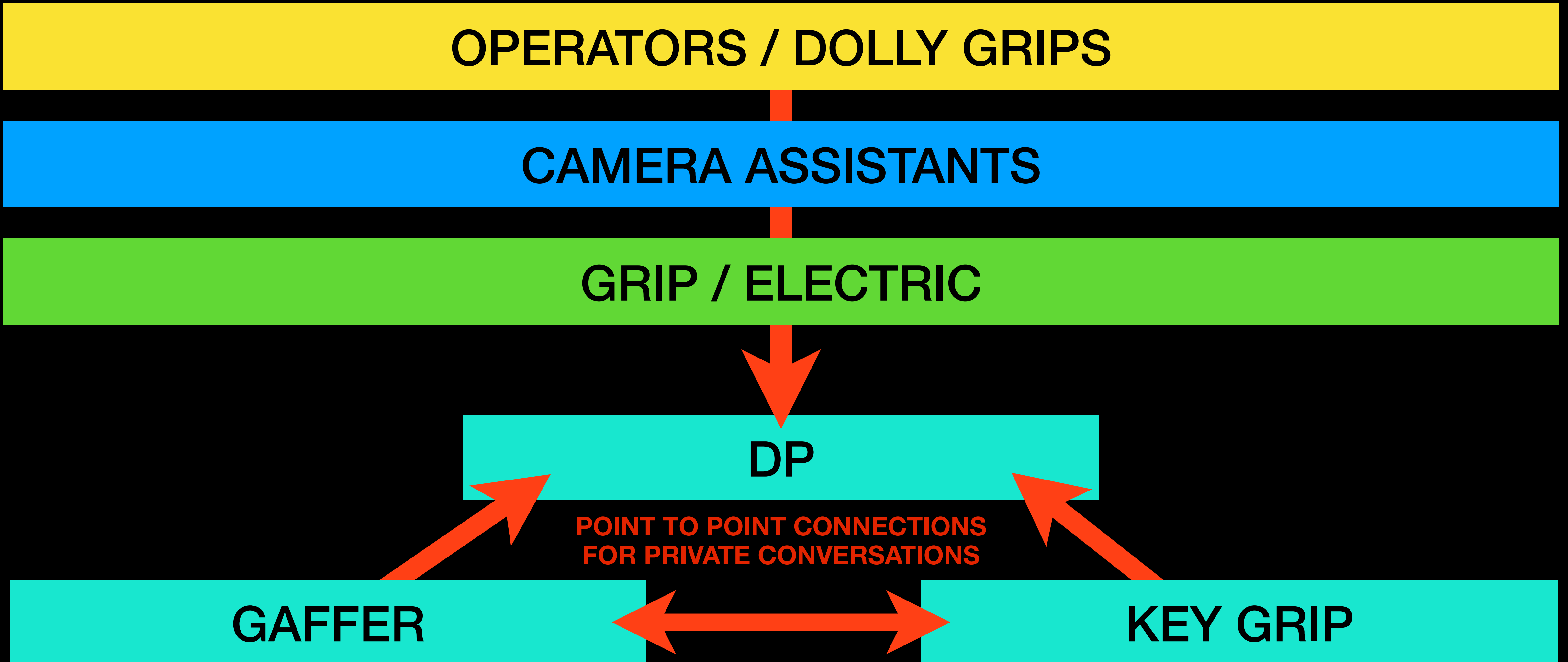
GRIP / ELECTRIC

DP

GAFFER

POINT TO POINT CONNECTIONS  
FOR PRIVATE CONVERSATIONS

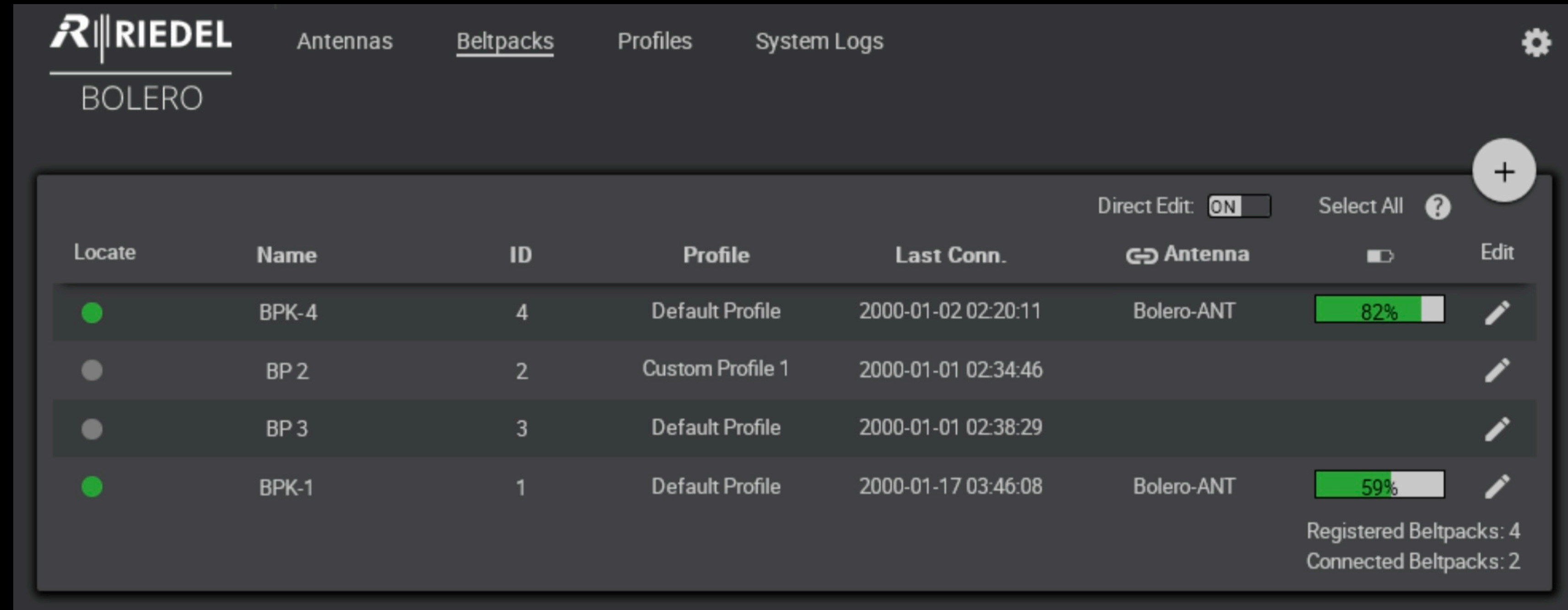
KEY GRIP





# Setup

- Done via a web browser
- Profiles can be made for job specific operations (i.e. a camera operator profile) so beltpacks can be easily reconfigured if needed
- Changes are sent to beltpacks immediately over the air. There is no need to bring them back to the antenna
- Beltpacks are highly customizable if desired, but they don't have to be
- Practically no maintenance after initial setup. Only the occasional change request if a crew member asks for a customization



The screenshot shows the RIEDEL BOLERO web interface. At the top, there's a navigation bar with the RIEDEL logo and the word BOLERO. Below the logo, there are tabs for Antennas, Beltpacks (which is currently selected), Profiles, and System Logs. On the right side of the navigation bar, there's a gear icon for settings. Below the navigation bar, there's a table of beltpacks. The table has columns for Locate, Name, ID, Profile, Last Conn., Antenna, and a battery status indicator. There are four rows of beltpacks. The first row is highlighted in green. To the right of the table, there's a 'Direct Edit' toggle switch set to 'ON', a 'Select All' button with a question mark, and a circular button with a plus sign. At the bottom right, there's a summary of the beltpack status: 'Registered Beltpacks: 4' and 'Connected Beltpacks: 2'.

| Locate | Name  | ID | Profile          | Last Conn.          | Antenna    | Battery | Edit |
|--------|-------|----|------------------|---------------------|------------|---------|------|
|        | BPK-4 | 4  | Default Profile  | 2000-01-02 02:20:11 | Bolero-ANT | 82%     |      |
|        | BP 2  | 2  | Custom Profile 1 | 2000-01-01 02:34:46 |            |         |      |
|        | BP 3  | 3  | Default Profile  | 2000-01-01 02:38:29 |            |         |      |
|        | BPK-1 | 1  | Default Profile  | 2000-01-17 03:46:08 | Bolero-ANT | 59%     |      |

Registered Beltpacks: 4  
Connected Beltpacks: 2



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Edit Profile  
Default Profile

General

Audio

Keys

Rotaries

Quick Menu

User Rights

Always-On

Trigger

On-Talk

On-Notification/Beep

General

Profile NameDefault Profile

Profile Id0

Headset TypeAuto

Plug - Activate HeadsetON

Unplug - Activate Speaker/Mic

Display ModeStandard

LanguageEnglish

Silent Mode

Name

Default NameBP

Append IdON

Notification

|                    | Light | Vibrate | Beep | Voice |
|--------------------|-------|---------|------|-------|
| Call:              | ON    |         |      | N/A   |
| Notification/Beep: | ON    | ON      | ON   | N/A   |
| Info/Low Battery:  | ON    | ON      |      | ON    |
| Out of Range:      | ON    | ON      |      | ON    |
| Volume Keys:       | N/A   |         | ON   |       |
| Beep Notification  |       |         |      | -12dB |
| Voice Notification |       |         |      | -6dB  |

Registration

Allow Multi-Registration

Automatic Net Change

Timeout

Volume Timeout3s

Menu Timeout120s

Display Brightness

Brightness modeMedium

Custom Settings

|                       |     |
|-----------------------|-----|
| Display               | 50% |
| Display Dim           | 10% |
| Display Dim Timer     | 10s |
| Display Timeout       | Off |
| Keys                  | 60% |
| Keys Dim              | 20% |
| Keys Dim Timer        | 10s |
| Keys Timeout          | Off |
| Call LED Brightness   | 40% |
| Status LED Brightness | 80% |

Bluetooth

BT StateOff

Share to netLocal

Volume0dB

Dim LevelMute

Replay

Recording Time3s

Store Time60min

Cancel

Apply

Apply & Close



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Edit Beltpack: BP 1

General Audio **Keys** Always-On Rotaries Quick Menu

|       |             |                   |
|-------|-------------|-------------------|
| Key 1 | Function    | Talk              |
|       | Mode        | None              |
|       | Destination | Talk              |
|       | Volume      | Talk Low Prio     |
|       | Mute        | Talk High Prio    |
| Key 3 | Function    | Listen            |
|       | Mode        | Listen Low Prio   |
|       | Destination | Listen High Prio  |
|       | Volume      | Reply             |
|       | Mute        | Notification/Beep |
| Key 5 | Function    | Set Trigger       |
|       | Mode        | Monitor Trigger   |
|       | Destination | Menu Shortcut     |
|       | Volume      | Toggle Setting    |
|       | Mute        | Volume Increase   |
| Reply | Function    | Volume Decrease   |
|       | Mode        | Reply             |

Key 2

Function: Talk

Mode: Auto

Destination: PL 2

Volume: 0dB

Mute: ☐

Key 4

Function: Talk


Mode: Auto

Destination: Out Cfg 1/Ch 1

Key 6

Function: None

Cancel Apply Apply & Close





# Other Black Boxes

- 5 bay charger
- An external audio input box is available to add an audio source like a Comtek to a beltpack channel where it can be turned on/off and the volume controlled locally. Audio outputs can be used to transmit to a voice of god speaker or other devices
- A walkie interface box can be used to integrate a conventional walkie channel into to the system
- An event trigger box can be used to turn a beltpack button into a trigger for external devices such as lights or even a coffee maker







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