



# UV-1G

## WIRELESS INTERCOM SYSTEM

### User Manual



## IMPORTANT SAFETY INSTRUCTIONS

- READ and KEEP these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. (A grounding-type plug has two blades and a third grounding prong, whereas a polarized plug has two blades, one wider than the other. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.)
- Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments and/or accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table included with the apparatus, or specified by the manufacturer.  
When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms, or when unused for long periods of time.

Refer all servicing to qualified service personnel.

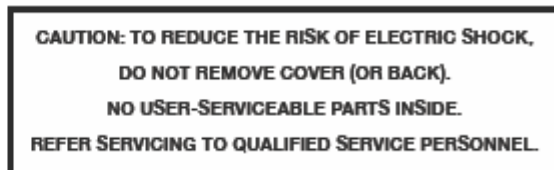
Servicing is required when the apparatus has been damaged in any way, including:

Power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

## WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer maintenance to qualified personnel only.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## WARNING

When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, or connect the power cord to socket-outlet which must be provided near the unit and easily accessible. If a fault should occur during operation of unit, operate the disconnect device to switch the power supply off, or disconnect the power cord.

## CAUTION

This apparatus should not be exposed to dripping or splashing. No objects filled with liquid, such as vases, should be placed on the apparatus.

- Per FCC 15.19(a)(3) and (a)(4): This device complies with part 15 of the FCC Rules. 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.
- Per FCC 15.21: Changes or modifications not expressly approved by Radio Active Designs could void the user's authority to operate the equipment.

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## General Information

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The Radio Active Designs® UV-1G is a two-channel full-duplex UHF/VHF wireless intercom system that incorporates up to six wireless belt pack units per base station. Each belt pack is capable of simultaneous Talk and Listen on two separate audio channels. Additionally, belt packs have Stage Announce and two-channel Wireless Talk-Around functionality.

The wired interface supports 2W Audiocom® (Telex), RTS® TW, and Clear-Com® varieties. Support for 4W systems is present through RJ-11 compatible jacks.

## Features

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- Excellent RF noise immunity through revolutionary design
- Full duplex operation incorporates UHF transmitters and VHF receivers
- Support for up to six Belt Pack units in one Base Station
- Multiple Base Station support when more than six belt packs are linked
- Two wireless intercom channels
- Programmability via PC interface or User Interface in the field
- Internal antenna in the Belt Pack
- Very low occupied bandwidth
- Frequency Response: 100Hz to 8kHz
- Audio Dynamic Range  $\geq$  50dB
- AES-48 Compliant

## Terminology

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- LCD – Liquid Crystal Display
- LED – Light Emitting Diode
- WTA – Wireless Talk-Around
- SA – Stage Announce
- 4W – 4-Wire
- 2W – 2-Wire
- VHF – Very High Frequency
- UHF – Ultra High Frequency
- IEC – International Electrotechnical Commission
- FCC – Federal Communications Commission
- RSSI – Received Signal Strength Indicator
- FSTN – Film compensated / Formulated / Filtered Super-twisted Nematic

## UV-1G Specifications

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RF Frequency Range	470-608 and 614-98MHz Base Tx, 174-216MHz Belt Tx
Power Requirements	100-240 VAC, 50-60 Hz, 2.5A max IEC receptacle
Temperature Range	-4° F to 131° F (-20° C to 55° C)
Dimensions	
Base Station	14.68" x 17" x 1.75"
Belt Pack	5.55" x 3.78" x 1.83"
Weight	
Base Station	7 lbs.
Belt Pack	14 Oz
TX Antenna	
Belt Pack	Internal
Base Station	5/8 wave (Supplied)
RX Antenna	
Belt Pack	Internal
Base Station	1/4 wave (Supplied)
FCC ID	2AA6F-UV-1GBP, 2AA6F-UV-1GBS
IC ID	11482A-UV1GBP, 11482A-UV1GBS
Frequency Response	100Hz-8 kHz
Four Wire Input	Level Adjustable (2Vrms typical)
Four Wire Output	Level Adjustable (2Vrms typical)
Auxiliary Input	Adjustable (2Vrms typical)
Auxiliary Output	Adjustable (2Vrms typical into 600Ω)
Stage Announce Output	Internally Adjustable (2Vrms typical at rated deviation into 600Ω)
Stage Announce Relay	Dry Contact, rated at 1 Amp, 24V Max
Mic input sensitivity	9mV
Local Headset Output	40mW output into 600Ω (1% Distortion)

## Transmitter

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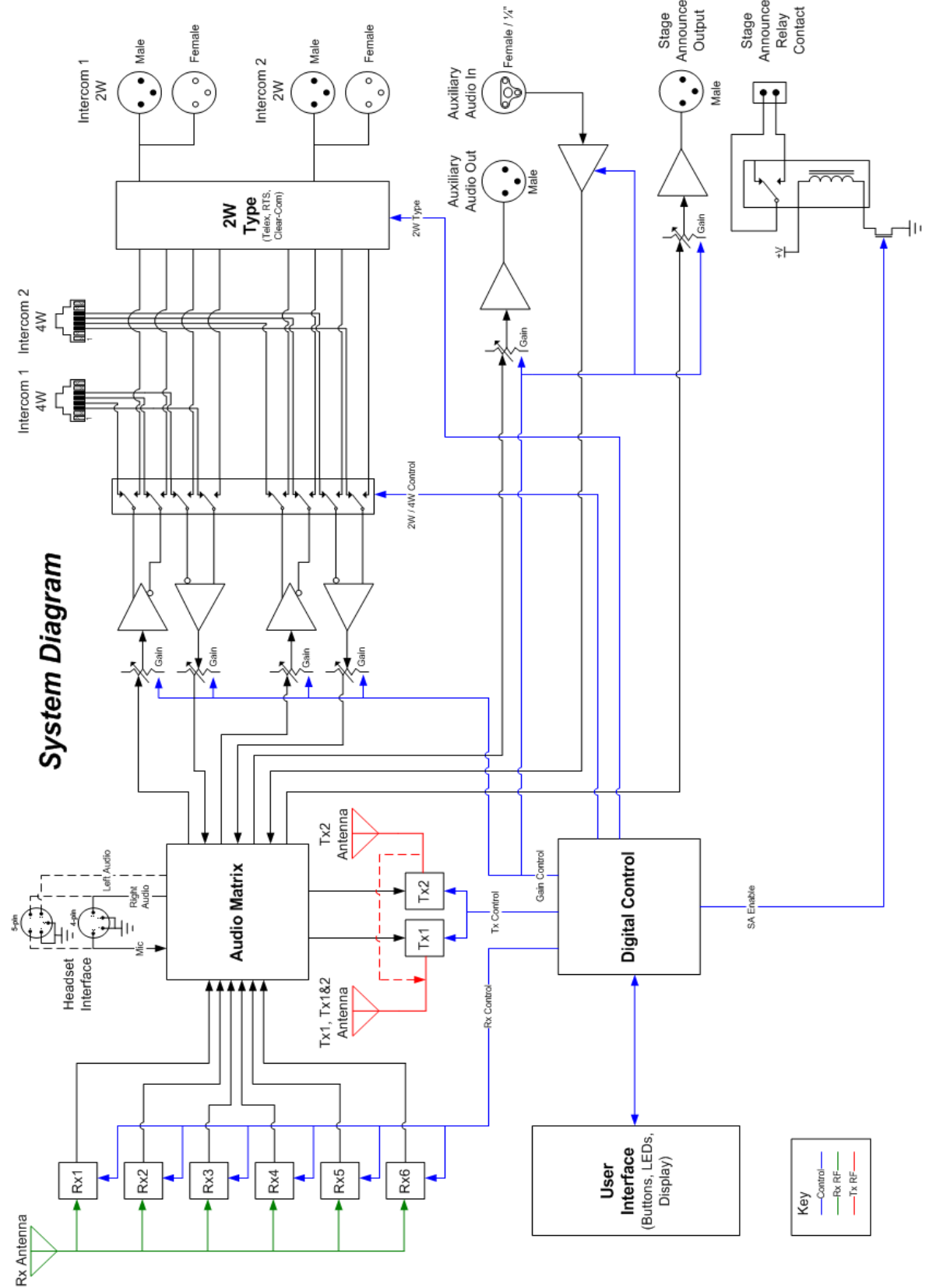
Type	Two Transmitters, Synthesized
Transmit Power (each transmitter)	100mW, 250mW PEP Max (High Part 74 use only), 10mW, 20mW, 50mW (Part 15 use)
Modulation Type	ENB
RF Frequency Stability	±1.5ppm
Occupied Bandwidth	25kHz
Radiated Harmonics and Spurious	Exceeds FCC Specifications

## Receiver

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Type	Direct Conversion
RF Sensitivity	-117dBm for 12dB SINAD
Squelch Threshold	Automatic
IF Selectivity	25kHz
RF Frequency Stability	$\pm 1.5$ ppm
Distortion	<1% at full modulation

System Diagram



## Base Station

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### Front Panel Button Descriptions

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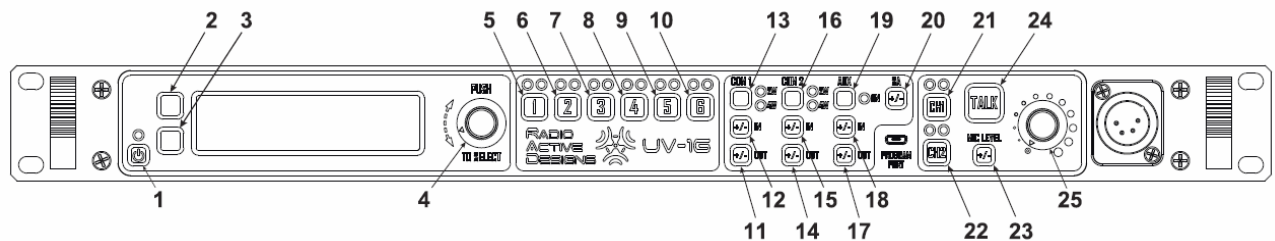


Figure 1 UV-1G Front Panel Buttons

1. **Power Button:** Momentary press to power up unit; press and hold to power off.
2. **Soft Key 1:** Menu Navigation; variable button function.
3. **Soft Key 2:** Menu Navigation; variable button function.
4. **Rotary Encoder and Select:** Rotate for Menu Navigation; press to make selection of a given menu option.
5. **Channel 1 Mute/Unmute:** Momentary press to Mute or Unmute Belt Pack #1.
6. **Channel 2 Mute/Unmute:** Momentary press to Mute or Unmute Belt Pack #2.
7. **Channel 3 Mute/Unmute:** Momentary press to Mute or Unmute Belt Pack #3.
8. **Channel 4 Mute/Unmute:** Momentary press to Mute or Unmute Belt Pack #4.
9. **Channel 5 Mute/Unmute:** Momentary press to Mute or Unmute Belt Pack #5.
10. **Channel 6 Mute/Unmute:** Momentary press to Mute or Unmute Belt Pack #6.
11. **Intercom 1 Output Gain:** Momentary press to show Intercom 1 Output Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.
12. **Intercom 1 Input Gain:** Momentary press to show Intercom 1 Input Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.
13. **Intercom 1 Select:** Momentary press toggles Intercom 1 between one of three options: 2-wire, 4-wire, Off.
14. **Intercom 2 Output Gain:** Momentary press to show Intercom 2 Output Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.
15. **Intercom 2 Input Gain:** Momentary press to show Intercom 2 Input Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.
16. **Intercom 2 Select:** Momentary press toggles Intercom 2 state between one of three options: 2-wire, 4-wire, off.
17. **Auxiliary Output Gain:** Momentary press to show Auxiliary Output Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.
18. **Auxiliary Input Gain:** Momentary press to show Auxiliary Input Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.
19. **Auxiliary Enable/Disable:** Momentary press enables or disables Auxiliary Input and Output.
20. **Stage Announce Gain:** Momentary press to show Stage Announce Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.

21. **Channel 1 Enable/Disable:** Momentary press toggles state of transmitter for local headset respecting Channel 1.
22. **Channel 2 Enable/Disable:** momentary press toggles state of transmitter for local headset respecting Channel 2.
23. **Headset Microphone Gain:** Momentary press to show Headset Microphone Gain screen on LCD; press and hold to force this screen to persist. See Gain Adjustments section.
24. **Talk Button:** Momentary press latches local headset talk on channels determined by the status of 21 and 22. Press and hold for non-latching operation.
25. **Headset Volume:** Headset volume audio potentiometer.

## Front Panel LED Description

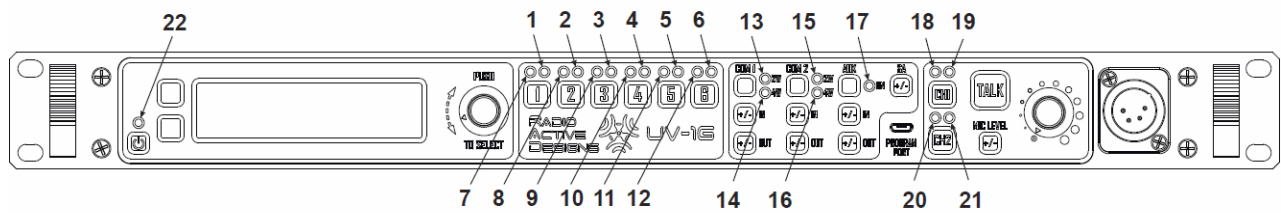


Figure 2 Front Panel LED Descriptions

- 1-6. **Channel *n* Status LED:** Green = receiver signal present, flashing Red = belt pack battery low, alternating Green/Red = receiver signal present and belt pack battery low.
- 7-12. **Channel *n* Mute LED:** Green = channel enabled, Yellow = channel muted, Off = channel disabled.
13. **Intercom 1 2-Wire Enable LED:** green = enabled, red = over modulation, off = disabled.
14. **Intercom 1 4-Wire Enable LED:** green = enabled, red = over modulation, off = disabled.
15. **Intercom 2 2-Wire Enable LED:** green = enabled, red = over modulation, off = disabled.
16. **Intercom 2 4-Wire Enable LED:** green = enabled, red = over modulation, off = disabled.
17. **Auxiliary Enable LED:** green = enabled, red = over modulation, off = disabled.
18. **Local Headset Channel 1 Enable LED:** green = enabled, off = disabled.
19. **Local Headset Channel 1 Status LED:** green = local headset traffic on channel 1 (i.e. Talk button being pressed and local headset channel 1 enabled), red = over modulation, off = no traffic.
20. **Local Headset Channel 2 Enable LED:** green = enabled, off = disabled.
21. **Local Headset Channel 2 Status LED:** green = local headset traffic on channel 2 (i.e. Talk button being pressed and local headset channel 2 enabled), red = over modulation, off = no traffic.
22. **Power / Fan Fail LED:** green = system powered up, red = fan failure condition.

## Rear Panel Description

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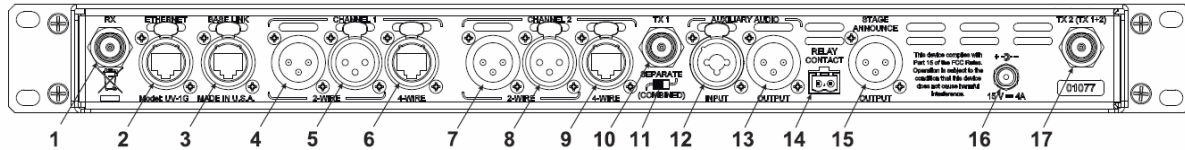
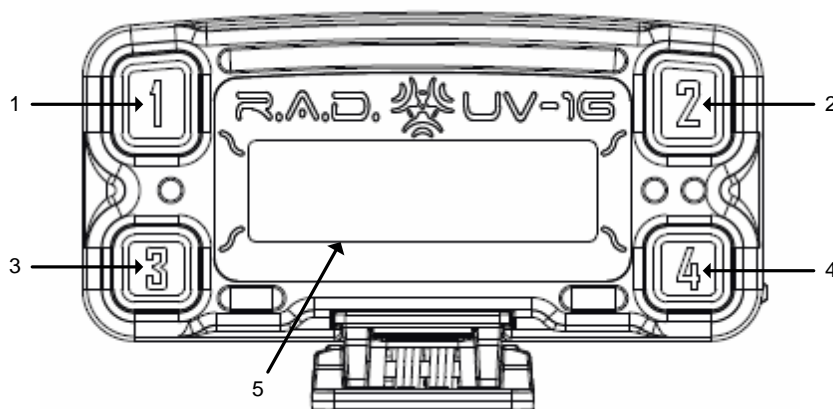


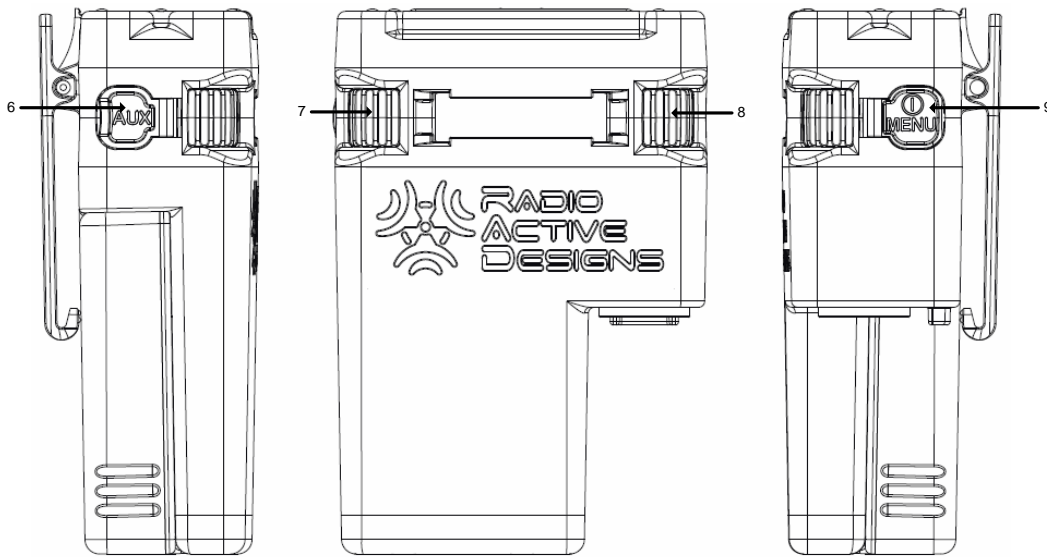
Figure 3 Base Station Rear Panel

1. Receive antenna (TNC)
2. Ethernet RJ-45 Port
3. Base Link RJ-45 Port
4. Intercom 1 3-pin XLR Male
5. Intercom 1 3-pin XLR Female
6. Intercom 1 4-wire port
7. Intercom 2 3-pin XLR Male
8. Intercom 2 3-pin XLR Female
9. Intercom 2 4-wire port
10. Transmit Antenna 1 (TNC)
11. Transmit Antenna Selection Switch
12. Auxiliary XLR 3-pin with 1/4" audio input
13. Auxiliary XLR 3-pin audio output
14. Stage Announce Relay Contact
15. Stage Announce XLR 3-pin audio output
16. DC Power Input
17. Transmit Antenna 2 (TNC)



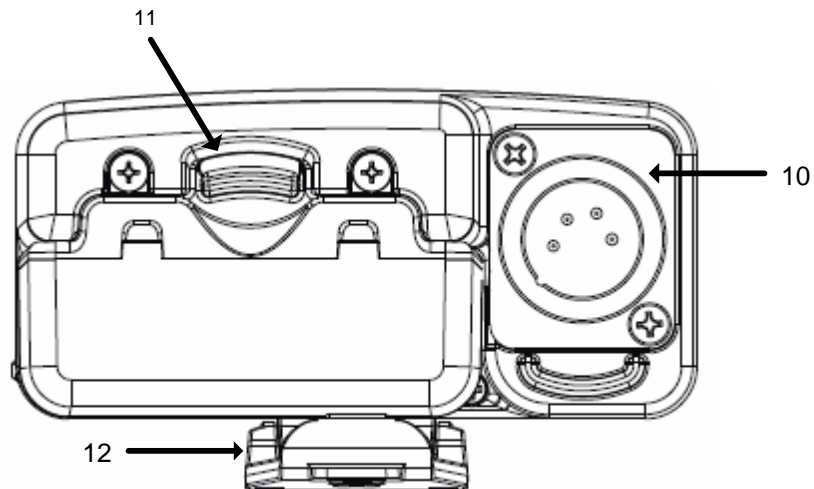
**Figure 4 Belt Pack Top View**

1. **Channel 1 Button:** at the home screen, push this button to transmit on Channel 1. In the menu, this button is used to select the item that is boxed.
  - a. **Talk / Over modulation LED for Channel 1:** this LED turns on when the Channel 1 talk button is pressed. It is normally green while the transmitter is active for that button, and it will turn red if over modulation occurs.
2. **Channel 2 Button:** at the home screen, push this button to transmit on Channel 2. In the menu, this button is used to select the item that is boxed.
  - a. **Talk / Over modulation LED for Channel 2:** this LED turns on when the Channel 2 talk button is pressed. It is normally green while the transmitter is active for that button, and it will turn red if over modulation occurs.
3. **Soft Key 1 Button:** at the home screen, push this button to transmit on the user-configured channel (Channels 1+2, WTA 1, WTA 2, WTA 1+2, SA). In the menu, this is a “soft key” and will perform the function that is described on the LCD.
  - a. **Talk / Over modulation LED for the Programmable 1 talk button:** this LED turns on when the button is pressed. It is normally green while the transmitter is active for that button, and it will turn red if over modulation occurs.
4. **Soft Key 2 Button:** at the home screen, push this button to transmit on the user-configured channel (Channels 1+2, WTA 1, WTA 2, WTA 1+2, SA). In the menu, this is a “soft key” and will perform the function that is described on the LCD.
  - a. **Talk / Over modulation LED for the Programmable 2 talk button:** this LED turns on when the button is pressed. It is normally green while the transmitter is active for that button, and it will turn red if over modulation occurs.
5. **LCD with Backlight:** The backlight turns on when a button is pressed as long as the belt pack isn't set up to blackout the backlight.



**Figure 5 Belt Pack Side Views**

6. **Auxiliary Ports:** USB port and auxiliary audio input.
7. **Left Encoder:** at the home screen, this adjusts the headset volume for Channel 1. In the menu, it is used for navigation and changing values.
8. **Right Encoder:** at the home screen, this adjusts the headset volume for Channel 2. In the menu, it is used for navigation and changing values.
9. **Power / Menu Button:** located on the side of the belt pack, a momentary press turns the belt pack on; press and hold to turn the unit off. When the belt pack is on, a momentary press will toggle the menu.



**Figure 6 Belt Pack Bottom View**

10. **Headset connector:** four pin (shown) or five pin XLR male.
11. **Battery Latch.**
12. **Removable Belt Clip**

## Quick Start Guide

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### Base Station Operation

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1. **Power:** Insert a standard 120VAC IEC power cable into the power connector located on the back of the base station.
2. **Antennas:** Connect antennas to ports on back of Base Station.
3. **Connect Headset:** Insert the headset connector into the base station until it snaps into place.
4. **Powering Up:** Press the power button. The display will turn on as well as various LEDs.
5. **Tx & Rx Frequencies:** Program the transmitter and receiver frequencies as desired. See Section 6: Base Station Operation or Section 8: PC Application for information on how to program frequencies from the Base Station itself or from the PC Application. Note: the defaults for Rx 1 – Rx 6 are 175MHz, 176MHz, 177MHz, 178MHz, 179MHz, and 180MHz. The default for Tx1 is 519MHz and Tx2 is 520MHz.
6. **Intercom 2W / 4W:**

### Belt Pack

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1. **Batteries:** Place five (5) new “AA” lithium or alkaline batteries into the provided battery sled, in the correct polarity.
2. **Connect Headset:** Insert the headset connectors into the belt packs until they snap into place.
3. **Powering Up:** Press the Power / Menu button that is located on the side of the belt pack. The display will turn on and the belt pack will power on.
4. **Tx & Rx Frequencies:** Program the transmitter and receiver frequencies as desired. See Section 7: Belt Pack Operation or Section 8: PC Application for information on how to program frequencies from the Belt Pack itself or from the PC Application. Note: the default for Rx1 is 519MHz, Rx2 is 520MHz, and Tx is 175MHz. These values will work with the Base Station defaults for one belt pack (belt pack #1). The other belt packs will need their frequencies changed from the defaults. See notes above.

Congratulations, your new base station is ready for use!

## Base Station Operation

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Figure 7 Base Station

### Power

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The Base Station is powered by 120VAC, 2.5A (max) using a standard IEC power cable to a low voltage power supply.

### Powering Up

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To turn the Base Station on, press the **POWER** button as shown in Figure 7 above. While the Base Station powers up, a splash screen will appear.



Once the Base Station is ready for use, the Home Screen will be displayed.

### Powering Down

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To turn the Base Station off, press and hold the **POWER** button until the LCD screen goes blank.

The Home Screen is the root of the UV-1G Base Station UI. It displays information regarding transmitter power level, receiver status, base station link mode, and local headset status. The left portion of the screen provides links to the main menu and RSSI screens.

## Transmitter Power Level

See **TRANSMITTER SETTINGS** for details on changing these parameters.

The indicators **R1** through **R6** represent the status of a given receiver (transmit status for each belt pack).

Code	Meaning
OFF	Receiver is off (disabled).
NTx	Receiver is enabled and the belt pack is not transmitting.
C1	(Intercom) Channel 1
C2	(Intercom) Channel 2
C12	(Intercom) Channels 1 & 2
W1	Wireless-Talk-Around 1
W2	Wireless-Talk-Around 2
W12	Wireless-Talk-Around 1 & 2
SA	Stage Announce

The Base Station Link Mode status appears on the Home Screen above the power level indication for transmitter 1 (**T1**).

The letter **M** stands for master and **S** for slave.

Two base stations can be linked to expand the number of belt packs that a system can handle.

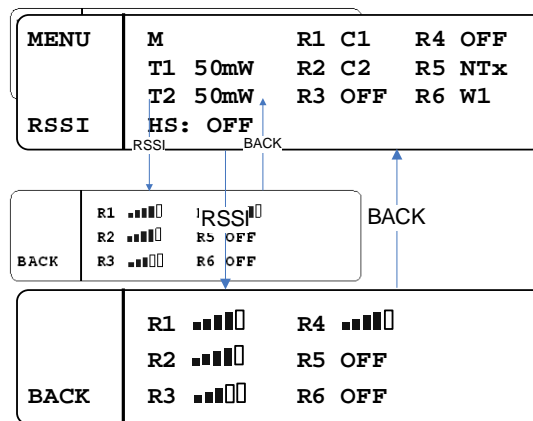
## Local Headset Status

The Local Headset Status information is labeled as **HS**. The table below shows the different Local Headset Status codes along with their meaning.

Code	Meaning
OFF	Local headset is disabled.
T/L	Local headset is enabled. Talk and listen capability is enabled.
LO	Local headset is enabled. Transmit functionality is disabled (listen only).

## RSSI Screen

To get to the RSSI (Received Signal Strength Indication) screen, press the bottom soft key labeled **RSSI**.



The RSSI screen, shown above, displays the signal strength of each receiver. Presence of the word **OFF** means that particular receiver is disabled.

## Menu Structure

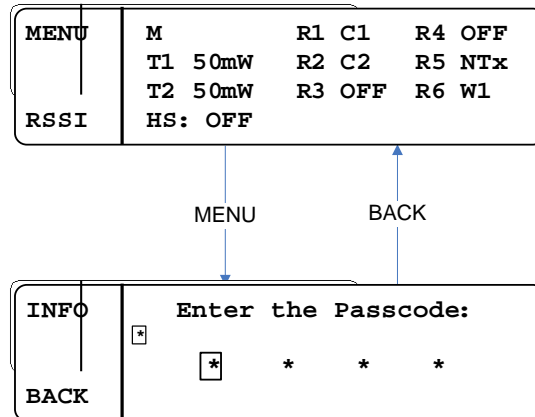
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### Passcode Protection

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The base station menu can be protected by a passcode.

When the **MENU** button is pressed from the home screen the screen will change as follows:



The passcode is four digits long and each digit can be any 0 – 9 number.

- Press **SELECT** to change the selected (boxed) digit.
- Once the last digit is entered, press **SELECT**.

If the entered passcode is correct, the menu screen will be displayed. If it is incorrect, “Invalid Passcode” will be displayed for three seconds before returning to the home screen.

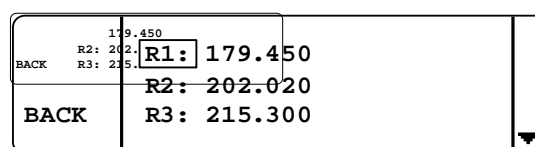
See **ENABLING/DISABLING THE PASSCODE** and **CHANGING THE PASSCODE** for instructions on how to enable/disable and change the passcode.

### Receiver Settings

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The receiver settings allow the user to change the receiver frequencies, as well as enable or disable them.

To get to the receiver settings, from the home screen, press **MENU** then press **SELECT** on **RX SETTINGS**. The screen will appear as follows:



This screen displays the frequency (in MHz) of all six receivers.

If a given receiver is disabled, the word **DISABLED** will appear in place of a numerical frequency value.

- Use the rotary encoder to navigate to the desired receiver and press **SELECT** to change the receiver frequency or status (enabled / disabled).

The following is an example of selecting **R1**:

R1	179.450
Status	Enabled
BACK	
BACK	

- To change the frequency, press **SELECT** and the first frequency digit will be boxed (see below).
- Use the encoder to change the value of the boxed digit (up / down).
- Press **SELECT** to move on to the next digit.
- Once the frequency has been changed as desired, press **SAVE** to save the change or **BACK** to cancel.

SAVE	R1 Freq : 179.450	Up →
BACK	Status: Enabled	← Down
BACK		

- To change the status, scroll down to **STATUS** and press **SELECT**.
- Use the encoder to change the selection and press **SAVE** to save the change.

R1 Freq : 179.450	R1 Freq : 179.450	Up →
Status: Enabled	Status: Enabled	← Down
BACK	BACK	

Select →

## Transmitter Settings

The transmitter settings allow the user to change the transmitter frequencies and power levels as well as enabling/disabling them.

- To get to the transmitter settings from the home screen, press **MENU**, scroll down to "Tx Settings," and press **SELECT**.

The screen will appear as follows:

T2: 50mW		T1: 50mW	470.000
T2: 50mW		T2: 50mW	471.040
BACK			

This screen lists the frequency (in MHz) of both transmitters, the power level, and the status (enabled/disabled). For example if transmitter one is disabled, **T1: DISABLED** will be displayed. If it is enabled, then it will be displayed as it is shown above.

- To change any of these settings, scroll to the transmitter you desire to change, press **SELECT** and the screen will appear as follows:

T1	50mW	Power: 50mW
BACK	Freq: T1 470.000	Freq : 470.000
BACK		

- To change the transmitter power, press **SELECT**.
- Use the encoder to change the value.
- Press **SAVE** to save or **BACK** to cancel the change.

SAVE	T1	Power: 50mW
BACK	Freq: T1 470.000	Freq : 470.000
BACK		

Up →

← Down

- To change the frequency, select **FREQ** and the first frequency digit will be boxed (see below).
- Use the encoder to change the boxed digit and press **SELECT** to change which digit is boxed.
- Press **SAVE** to save the change or **BACK** to cancel.

T1	Power: 50mW	Power: 50mW
BACK	T1 470.000	Freq T1 70.000
BACK		

Select →

SAVE	T1	Power: 50mW
BACK	Freq T1 70.000	Freq : 470.000
BACK		

Up →

← Down

Note: For operation under Part 15 of FCC Rules, the maximum transmitter power is 50mW. Higher power requires a license under Part 74 of the FCC Rules.

## Local Headset Options

There are two local headset options: **Status** or **Earphones**.

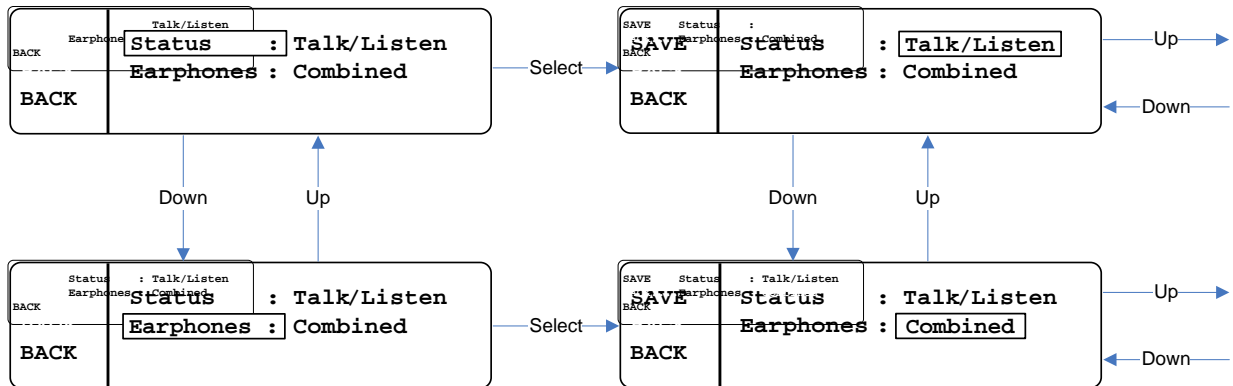
The **Status** setting allows the local headset to be disabled, set up as listen only, or as a fully functioning headset (talk and listen).

The **Earphone's** setting controls where the receiver audio gets routed, to the left and/or right earphones.

If **Separate** is selected, audio from Receiver 1 will be routed to the right earphone and audio from Receiver 2 will be routed to the left earphone.

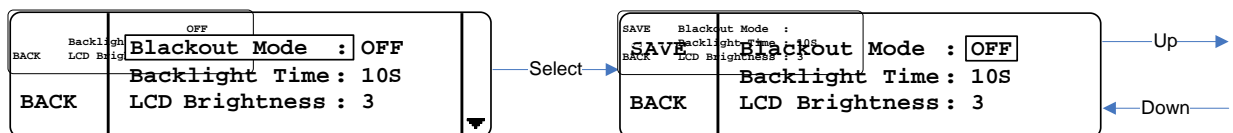
If **Combined** is chosen, audio from both receivers will be routed to both earphones.

Note: If only one receiver is enabled, then the audio from that receiver will be routed to both earphones no matter what option is chosen. These options are located in the menu under "Local Headset."



## Display Settings

### Blackout Mode



Blackout Mode allows the user to disable all the LEDs on the base station.

- To get to blackout mode screen, from the home screen, press **MENU**, scroll down to **Display Settings** and press **SELECT**.

Blackout mode is the first display setting. There are four options: **OFF**, **LEDs**, **BKLGHT** (backlight), and **ON**.

**ON** means that both the backlight and LEDs will be disabled.

**OFF** means that both the backlight and LEDs operate normally.

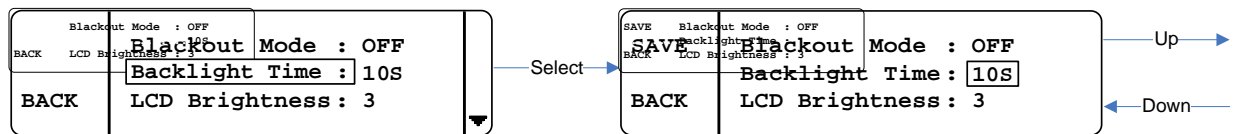
**LEDs** means that just the LEDs will be disabled or blacked out.

**BKLGHT** means that just the backlight will be disabled or blacked out.

- To change the blackout mode, press **SELECT** and then turn the encoder as shown above.
- Press the **SAVE** button to save the change or press **BACK** to ignore it.

## Backlight Time

---



The Backlight Time setting changes the amount of time the backlight stays on for.

- To get to the backlight time screen, from the home screen, press **MENU**, scroll down to **DISPLAY SETTINGS** and press **SELECT**.

Backlight time is the second display setting. Each time any button is pressed or the encoder is turned the backlight timer gets reset.

The choices are:

**5S** for 5 seconds

**10S** for 10 seconds

**20S** for 20 seconds

**30S** for 30 seconds

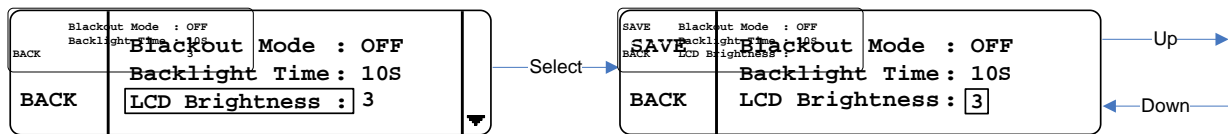
**60S** for 60 seconds

**ON** meaning it will never turn off.

- To change the backlight time, press **SELECT**.
- Turn the encoder as shown above.
- Press **SAVE** to save the change or **BACK** to ignore it.

## LCD Brightness

---



The LCD brightness setting changes the brightness of the LCD's backlight.

- To get to the LCD brightness screen, from the home screen, press **MENU**, scroll down to **Display Settings** and press **SELECT**.

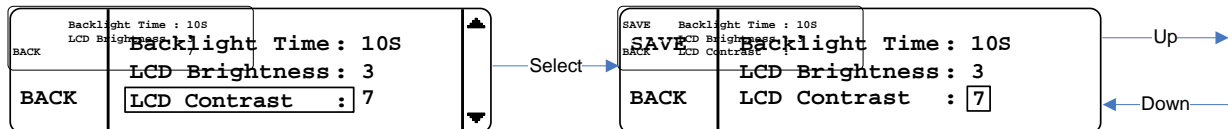
LCD Brightness is the third display setting. The choices are 1 – 5, with 1 being dim and 5 being the brightest.

- To change the brightness, press **SELECT**.
- Turn the encoder as shown above.
- Press **SAVE** to save the change or press **BACK** to ignore it.

Note: the brightness updates in real time as it is modified.

## LCD Contrast

---



The LCD contrast setting changes the display's contrast.

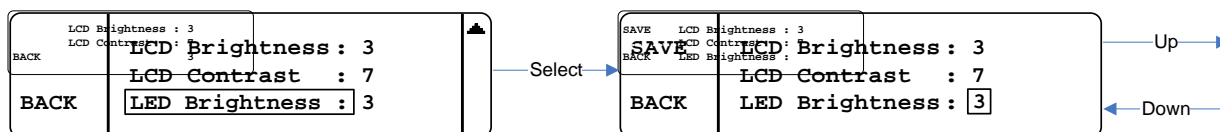
- To get to the LCD contrast screen, from the home screen, press **MENU**, scroll down to **DISPLAY SETTINGS** and press **SELECT**.

LCD contrast is the fourth display setting. The choices are 1 – 11, with 1 being the dimmest and 11 being the brightest.

- To change the contrast, press **SELECT**.
- Turn the encoder as shown above.
- Press **SAVE** to save the change or press **BACK** to ignore it.

Note: the contrast updates in real time as it is modified.

## LED Brightness



The LED brightness setting changes the talk buttons LED's brightness.

- To get to the LED brightness screen, from the home screen, press **MENU**, scroll down to **Display Settings** and press **SELECT**.

LED brightness is the last display setting. The choices are 1 – 5, with 1 being the dimmest and 5 being the brightest.

- To change the brightness, press **SELECT**.
- Turn the encoder as shown above.
- Press **SAVE** to save the change or press **BACK** to ignore it.

Note: the brightness updates in real time as it is modified.

## Base Station Link Modes

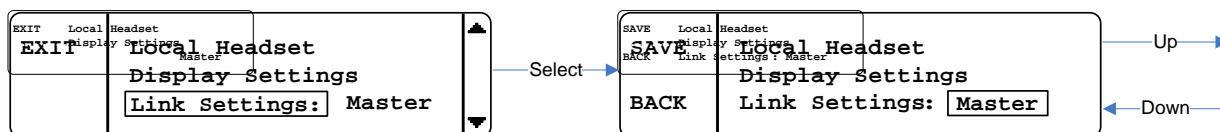
Two base stations can be “linked” together to expand the number of belt packs that the system can handle.

The two options are **Master** and **Slave**. When two base stations are “linked” together, one must be set up as a master and the other as a slave.

The master base station works just like a normal base station except it will receive audio from the slave base station that it will route.

The slave base station receives up to six belt packs’ audio and gives it to the master to route. The slave’s transmitters and all the ports on the back of the base station will be disabled.

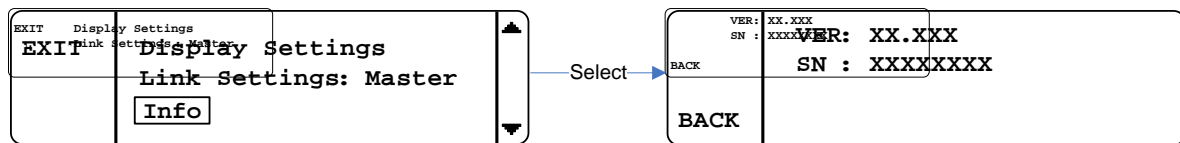
- To change the base station link mode, go to **LINK SETTINGS** in the menu, and press **SELECT**.
- Turn the encoder to the desired setting and
- press **SAVE**.



## Info Screen

---

The Info screen displays a version number and serial number of the base station. The version number is a composite firmware version number of all the firmware running in the base station.

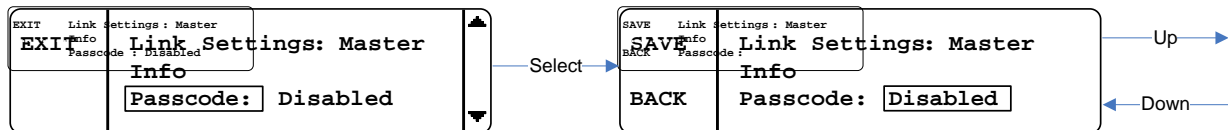


The Info screen is located in the menu right below **LINK SETTINGS**. To view the screen, press **SELECT** as shown above.

## Enabling/Disabling the Passcode

---

The Menu can be passcode protected. The passcode is a four digit 0 – 9 number.



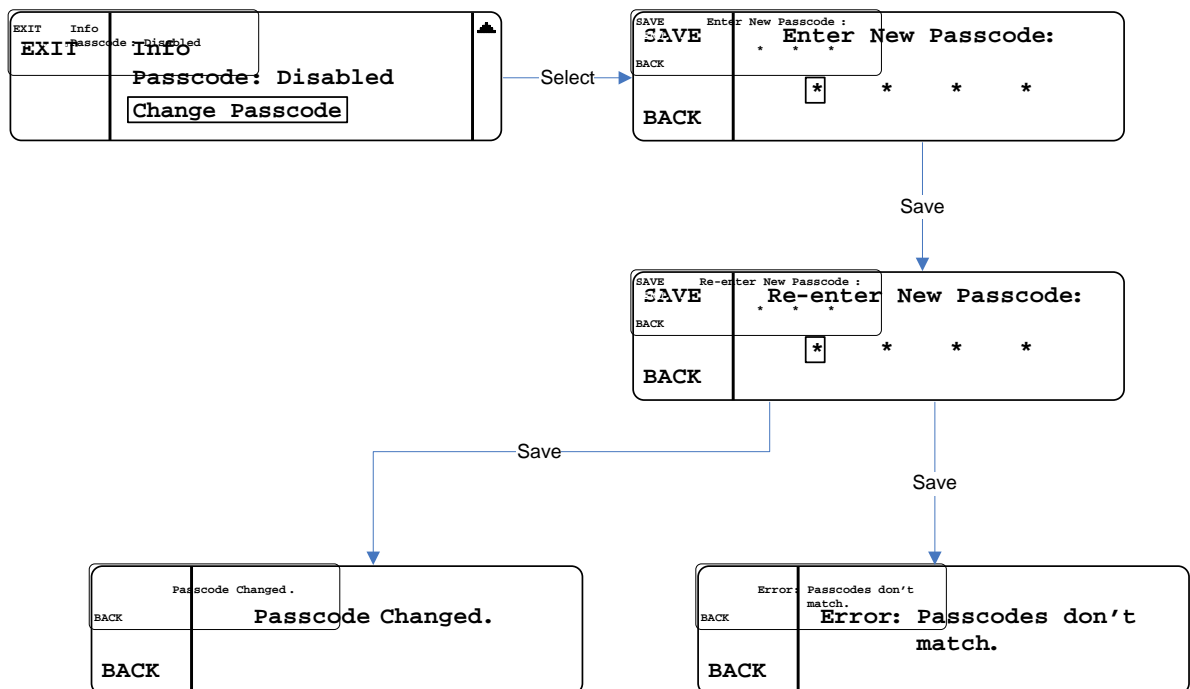
The passcode can be enabled or disabled from the **PASSCODE** screen. It is located below the **Info** screen in the Menu as shown above.

- To change the setting, press **SELECT**.
- Turn the encoder until the desired option appears
- Press **SAVE**.

The Passcode can be changed by selecting **Change Passcode** in the Menu.

- Select **Change Passcode**
- Enter the desired new passcode (pressing **SELECT** to advance to the next digit)
- Press **SAVE**
- Re-enter the desired new passcode
- Pressing **SAVE** once finished.

If the two passcodes that were just entered match, then the passcode will be changed to that value. If they don't match, then the passcode will remain unchanged.



## Gain Adjustments

---

Gain adjustments can be made to the following:

Intercom 1 inputs and outputs (2W and 4W)

Auxiliary inputs and outputs, and

Stage Announce (and the local headset microphone which is described in the Local Headset section)

All gains have eleven (11) settings.

- To change one of the gain settings, press the appropriate gain button and then use the encoder to adjust it.

The gain screen will go away after 30 seconds if no button press or encoder knob turn is made.

When changing one of the gains a bar graphic along with a number will be displayed on the screen to show the current setting.

A label telling what gain it is and a status (when applicable) is also shown.

- Turn the encoder knob clockwise to increase the gain and counter clockwise to decrease the gain. The change will take place immediately.
- When finished, press **SAVE** to save the change, otherwise press **BACK**, or wait for the timeout to cancel any changes (the value will revert back).

Note: Stage Announces' gain can be changed at anytime, however Intercom 1 and 2 and Auxiliary need to be enabled to be able to change their gains.

## Intercom 1 & 2

---

SAVE	COM 1 4W Input Gain
SAVE	COM 1 4W Input Gain
BACK	Status: <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 7
BACK	Status: Enabled

The figure above shows an example of what an Intercom gain screen looks like. Note: the Intercom must be enabled to change the gain.

## Auxiliary

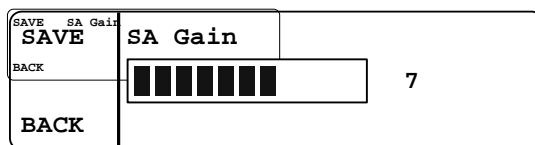
---

SAVE	Aux Input Gain
SAVE	Aux Input Gain
BACK	Status: <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 7
BACK	Status: Enabled

The figure above shows an example of what an Auxiliary gain screen looks like. Note: Auxiliary must be enabled to change the gain.

## Stage Announce

---



The figure above shows what the Stage Announce gain screen looks like.

## Local Headset

---

### Microphone Gain

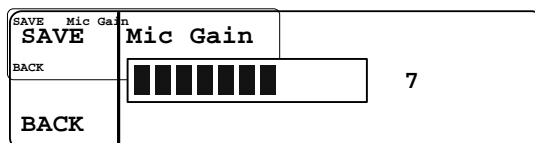
---

- Change the local headset microphone gain by pressing the **Mic Level** button (below the **Talk** button).

The display will change as shown below.

- Use the encoder to change the gain, and press **SAVE** to save the change or **BACK** to ignore it.

Note: the microphone gain updates in real time as it is modified.



## Volume

---

The local headset volume is control by a knob, located to the right of the **TALK** and **MIC** level buttons.

## Intercom CH1 and CH2 Buttons and LEDs

---

These two buttons allows the base station user to transmit on Intercom Channel 1, Intercom Channel 2 or both.

When enabled the audio will be routed through that intercom channel (and not routed when it is disabled).

There are two LEDs above each of these buttons:

- The one on the left is a green LED that is on when that channel is enabled and off when disabled.
- The LED on the right is a red and green LED combo. It is green when that intercom channel's audio is being routed and the talk button is pressed and red when this is true plus the user's microphone is over modulating.

## Talk Button

---

The Talk button allows the base station user to transmit. The button can be pressed and held or “tapped” on and off.

## Belt Pack Operation

---

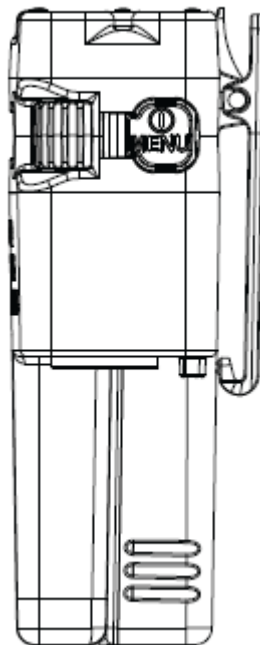


Figure 8 Belt Pack Power Button

## Battery

---

Before the belt pack is turned on, be sure to attach a fresh battery pack. During operation, the battery meter will display the battery's status.

## Powering Up

---

To turn the belt pack on, press the power button as shown in Figure 8 above. While the belt pack is powering on, a splash screen will be displayed.



Once the belt pack is ready to go, the home screen will be displayed.

## Powering Down

---

To turn the belt pack off, press and hold (approximately 3 seconds) the power button until the LCD screen goes blank.

## Home Screen

---

### *Talk Buttons and LEDs*

---

The belt pack has four talk buttons with a corresponding set of green and red LEDs. The top two talk buttons, Intercom Channel 1 and Intercom Channel 2, are fixed in functionality although the label names are programmable.

The bottom two talk buttons are programmable with the following choices:

- Intercom Channels (CH) 1 & 2
- Wireless-Talk-Around (WTA) 1
- Wireless-Talk-Around (WTA) 2
- Wireless-Talk-Around (WTA) 1 & 2
- Stage Announce (SA).

The home screen displays this information in the four boxes in the corners of the screen.

Each talk button has a green and red LED set.

The green LED turns on to show that the transmitter is active for that channel.

The red LED turns on when microphone over modulation occurs while transmitting.

### *Intercom and Programmable Button Labels*

---

The home screen displays a boxed “T” next to each talk button label box to show the transmitter’s status for each button.

The “T” means that the transmitter is on, and a box around the “T” means that the mic is unmuted.

Note: it is possible to turn on the transmitter with the microphone muted (no audio is transmitted).

### *Signal and Battery Meters*

---

The signal and battery meters are there to assist the user.

The signal meter is an average of both receiver’s signal strength if both are enabled, or if just one receiver is enabled it is that receiver’s signal strength.

The battery meter displays the battery’s status.

### *Local Headset Volume*

---

The headset volume is changeable via the two knobs:

- Left changes Channel One
- Right changes Channel Two

If the local headset volume option is set to **COMBINED**, both knobs change volume of both receivers proportionally.

## Power / Menu Button

---

This button is used to turn on and off the belt pack, as well as to get into and out of the menu.

- When the belt pack is off, press the button to turn it on.
- When on, press and hold (approximately 3 seconds) to turn it off.
- To get into or out of the menu, when the belt pack is on, press (without holding) the button.

## Menu Structure

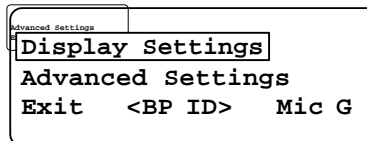
---

### Display Settings

---

- To get to the display settings from the home screen, press the **MENU** button.

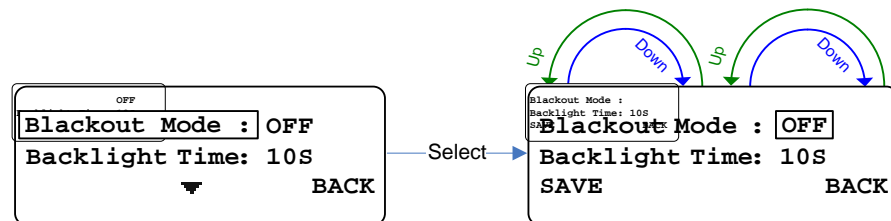
The screen will appear as follows:



- Press **SELECT**.

### Blackout Mode

---



Blackout mode is the first display setting. It allows the LCD backlight and/or the talk LEDs to be disabled or “blacked out”.

There are four options: **OFF**, **LEDs**, **BKLGHT** (backlight), and **ON**.

**ON** means that both the backlight and LEDs will be disabled, and

**OFF** means that both the backlight and LEDs operate normally.

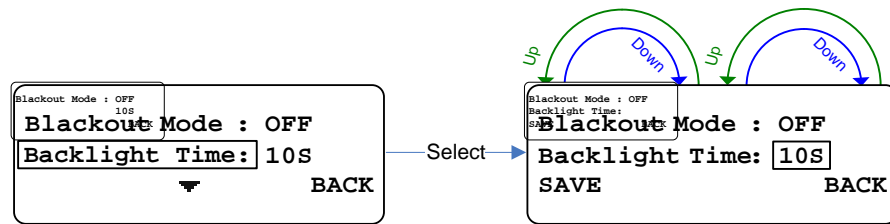
**LEDs** means the LEDs will be disabled or blacked out, and likewise

**BKLGHT** means the backlight will be disabled or blacked out.

- To change the blackout mode, press **SELECT**
- turn either encoder as shown above.
- Press **SAVE** to save the change or **BACK** to ignore it.

## Backlight Time

---



The backlight time setting changes the amount of time the backlight stays on for. Each time any button is pressed or encoder is turned the backlight timer gets reset.

The choices are:

**5S** for 5 seconds

**10S** for 10 seconds

**20S** for 20 seconds

**30S** for 30 seconds

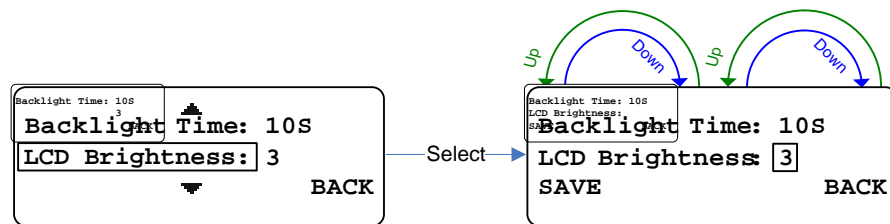
**60S** for 60 seconds

**ON** meaning it will never turn off.

- To change the backlight time, press **SELECT**
- turn either encoder as shown above.
- Press **SAVE** to save the change or **BACK** to ignore it.

## LCD Brightness

---



The LCD brightness setting changes the brightness of the LCD's backlight.

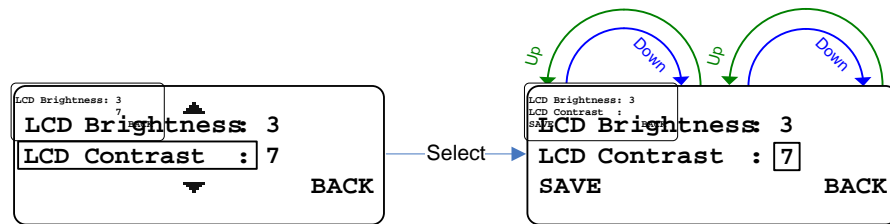
The choices are 1 – 5, with 1 being the dimmest and 5 being the brightest.

- To change the brightness, press **SELECT**
- Turn either encoder as shown above.
- Press **SAVE** to save the change or **BACK** to ignore it.

Note: the brightness updates in real time as it is modified.

## LCD Contrast

---



The LCD contrast setting changes the display's contrast.

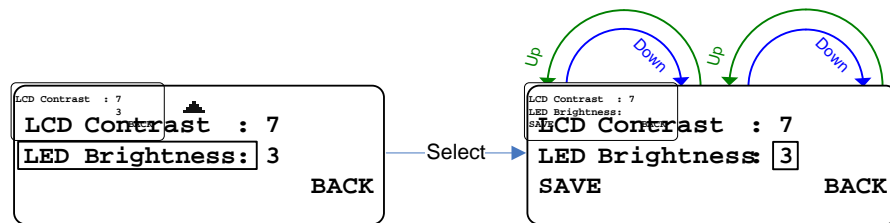
The choices are 1 – 11, with 1 being the dimmest and 11 being the brightest.

- To change the contrast, press **SELECT**
- Turn either encoder as shown above.
- Press **SAVE** to save the change or **BACK** to ignore it.

Note: the contrast updates in real time as it is modified.

## LED Brightness

---



The LED brightness setting changes the talk buttons LED's brightness.

The choices are 1 – 5, with 1 being the dimmest and 5 being the brightest.

- To change the brightness, press **SELECT**
- Turn either encoder as shown above.
- Press **SAVE** to save the change or **BACK** to ignore it.

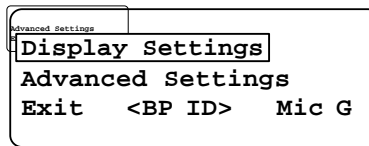
Note: the brightness updates in real time as it is modified.

## Advanced Settings

---

- To get to the advanced settings, from the home screen, press the **MENU** button.

The screen will look like this:



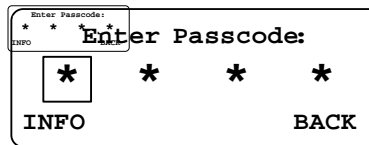
- Use either encoder to scroll down to **Advanced Settings**.
- Once it is boxed, press **SELECT**.

## Passcode Protection

---

The advanced menu can be passcode protected if desired.

When the passcode is enabled, once the user presses select on **ADVANCED SETTINGS**, the screen will appear as follows:



The passcode is four digits where each digit can be any 0 – 9 number.

- Use either encoder to change the selected digit.
- Press **SELECT** to change the selected (boxed) digit.
- Once the last digit is entered press **SELECT**.

If the entered passcode is correct the belt pack will go to the advanced settings.

If it is incorrect **Invalid Passcode** will be display for three seconds before returning to the main menu.

See **ENABLING/DISABLING THE PASSCODE** and/or **CHANGING THE PASSCODE** at the end of this section for more information.

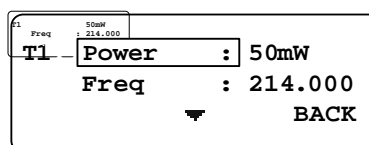
## Transmitter Settings

---

The transmitter settings allow the user to change the transmitter power level, frequency, status, and Intercom transmit settings.

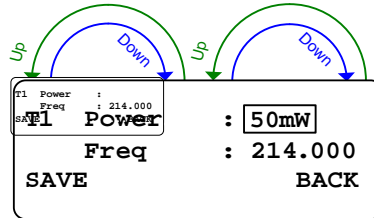
The transmitter settings are located in the **ADVANCED SETTINGS** sub-menu.

Once selected, the screen will appear as follows:



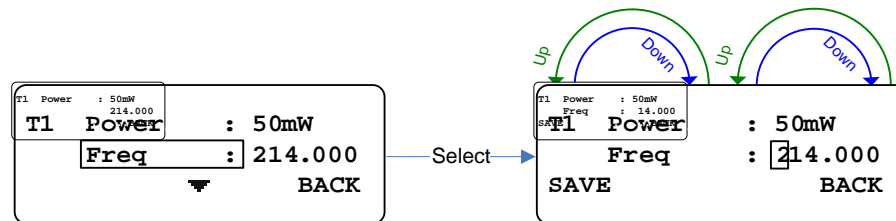
- To change the transmitter power level, press **SELECT**.
- Use either encoder to change the value and press **SAVE** to save or **BACK** to ignore the change.

The choices are 10mW and 50mW.



- To change the frequency, scroll down to box **FREQ**: press **SELECT** and the first frequency digit will be boxed (see below).
- Use either encoder to change the boxed digit
- Press **SELECT** to change which digit is boxed.
- Press **SAVE** to save the change or **BACK** to ignore it.

The belt pack transmitter frequency range is 174 MHz – 216 MHz (VHF), and the step size is 5 kHz.

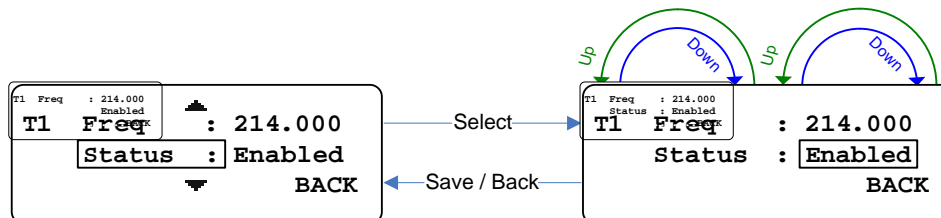


The status is the “master” control for the transmitter.

If it is set to disabled then the transmitter will be powered down, and all transmit functionality of the belt pack will be disabled.

If it is set to enabled then the belt pack will function normally, transmitting when a transmit button is pressed.

- To change the status, scroll down until **STATUS**: is boxed and press **SELECT**.
- Use either encoder to change the status and press **SAVE** to save and **BACK** to ignore the change.



The last two items in the transmitter settings are called **ICOM1 Tx** and **ICOM2 Tx**.

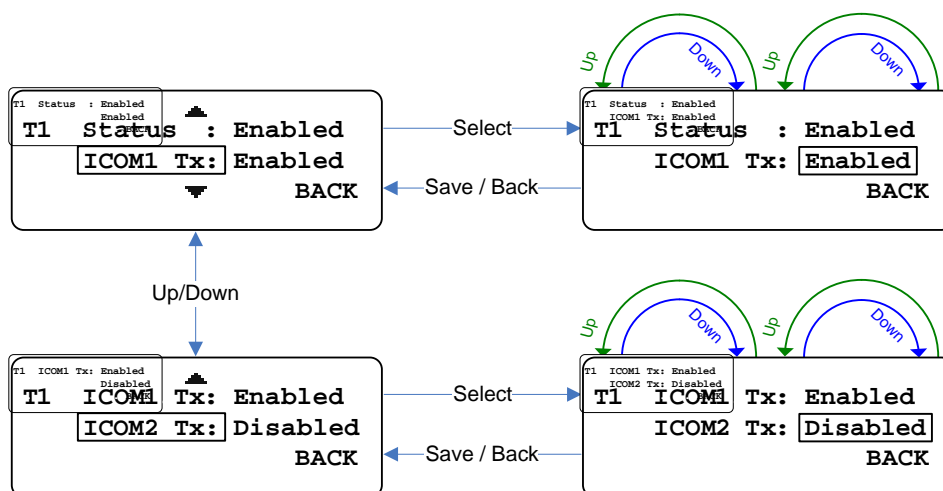
These control whether the belt pack user is allowed to transmit on Intercom CH 1 and Intercom CH 2.

**ENABLED** = allowed

**DISABLED** = not allowed

Please note that these don't affect Wireless-Talk-Around 1 or 2 (they are controlled separately). They only affect Intercom Channels 1 and 2.

- To change either of these values scroll down until it is boxed and press **SELECT**.
- Use either encoder to change the status and press **SAVE** to save and **BACK** to ignore the change.



## Receiver Settings

The receiver settings allow the user to change the receiver frequencies as well as enable/disable them.

The receiver settings are located in the **ADVANCED SETTINGS** sub-menu.

Once selected, the screen will appear as follows:

470.000

R1: 470.000

498.000

R2: 498.000

BACK

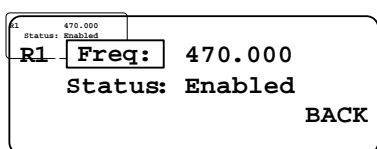
This screen lists the frequency (in MHz) of both receivers as well as the status.

For example if receiver one is disabled, **R1: Disabled** will be displayed.

If a frequency is listed instead of **Disabled**, then it is enabled and receiving at the specified frequency.

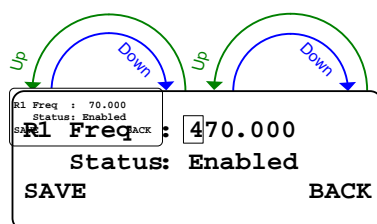
- To change a receivers' frequency or status, scroll to the receiver you desire to change

- Press **SELECT** and the screen will change to the following:



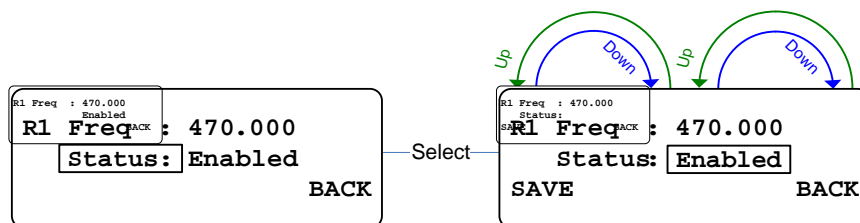
- To change the frequency, press **SELECT** and the first frequency digit will be boxed (see below).
- Use the encoder to change the boxed digit and press **SELECT** to change which digit is boxed.
- Once the frequency has been changed as desired, press **SAVE** to save the change or **BACK** to ignore it.

The belt pack receiver frequency range is 470-608MHz and— 614-698MHz (UHF), and the step size is 5kHz.



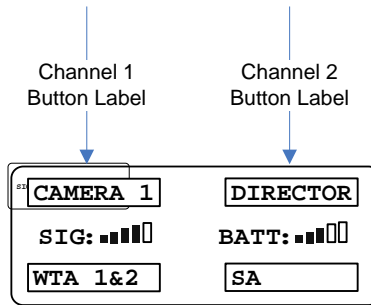
The status enables (turns on) / disabled (turns off) the receiver.  
Turn off an un-needed receiver to save battery power.

- To change the status, scroll down to box **Status** and press **SELECT**.
- Turn the encoder to change the selection
- Press **SAVE** to save the change.

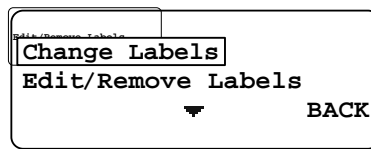


## Channel Labels

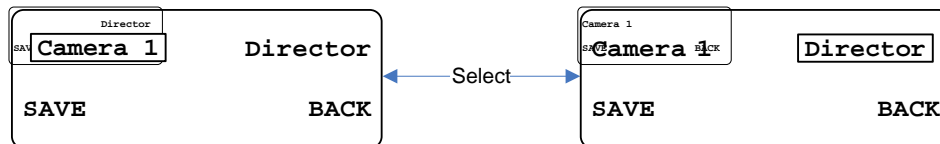
The **Channel Labels** menu option in the **Advanced Settings** sub-menu provides a way to change the (Intercom) Channel talk button labels.



This sub-menu allows the user to change, edit, remove, and add new labels. Once the **Channel Labels** menu is entered, the screen will appear as follows:

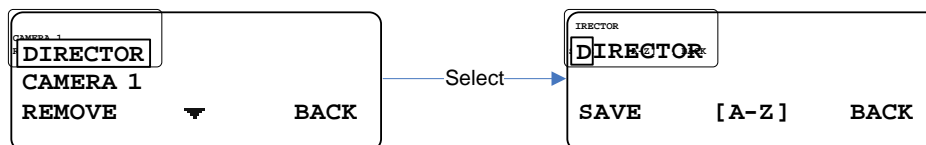


- Press **SELECT** to change what label is assigned to each Intercom.  
Intercom CH 1 is on the left.  
Intercom CH 2 is on the right.
- Press **SELECT** to change which one gets changed.
- Use either encoder to scroll through the list of labels.
- Press **SAVE** to save your changes or **BACK** to ignore them.



- To view the label list, or edit or remove a label, select the **Edit/Remove Labels** option in the **Channel Labels** sub-menu.

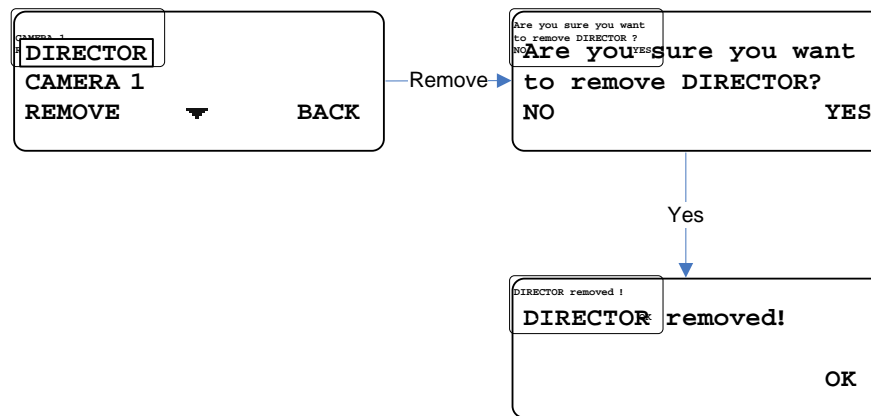
The screen will appear as follows:



- Use either encoder to scroll through the list.
- Press **SELECT** to edit the currently selected label.  
The left (CH 1) encoder changes the currently selected character.  
The right (CH 2) encoder changes the group.

There are three groups: capital letters (A-Z), numbers (0-9), and symbols (SYM).

- Press **SELECT** to change the selected character.
- Press the left soft key labeled **REMOVE** to remove the currently selected label as shown below.



- To add a label to the list, select the **Add New Label** option in the **Channel Labels** sub-menu.

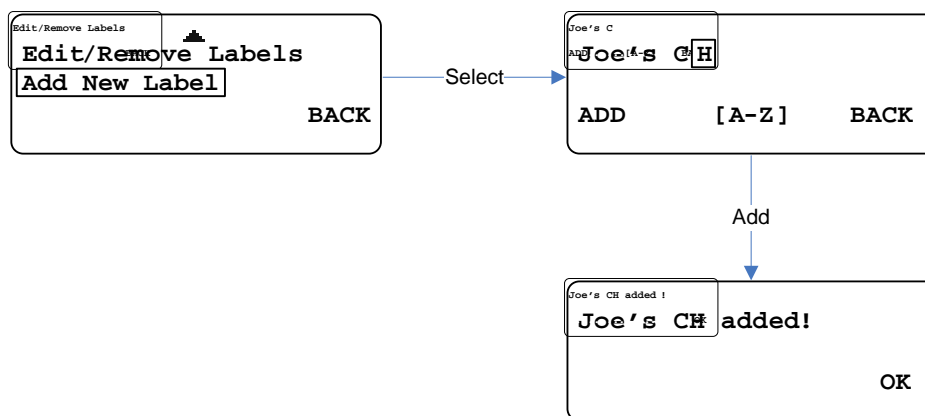
Labels are allowed to be a maximum of eight characters, and the controls are the same as editing.

The left (CH 1) encoder changes the currently selected character.

The right (CH 2) encoder changes the group.

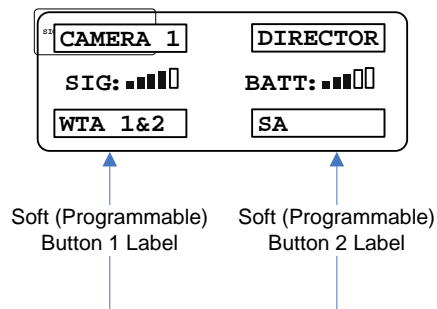
There are three groups: capital letters (A-Z), numbers (0-9), and symbols (SYM).

- Press **SELECT** to change the selected character.



## Soft Button Labels

The **Soft Button Labels** menu option in the **Advanced Settings** sub-menu provides a way to change the soft (programmable) talk buttons.

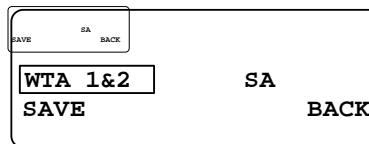


There are five options:

- Intercom Channels (CH) 1 & 2
- Wireless-Talk-Around (WTA) 1
- Wireless-Talk-Around (WTA) 2
- Wireless-Talk-Around (WTA) 1 & 2
- Stage Announce (SA)

- To change one of the buttons, press **SELECT** on the **Soft Button Labels** menu option.

The screen will appear as follows:



- Use either encoder to scroll and find the desired option.
- To change the right soft button, press **SELECT** and the right button label will be boxed.
- Use either encoder to change the label.
- When done, press **SAVE** to save the changes or **BACK** to ignore them.

## Rx Volume Options

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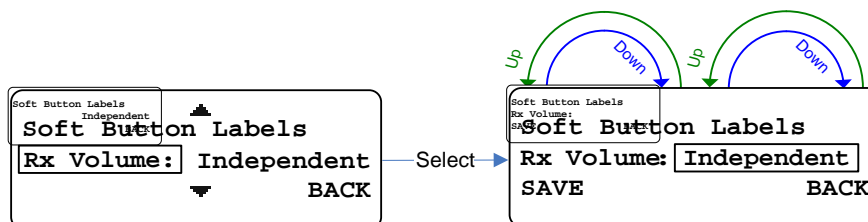
There are two options for the way the receiver volumes are controlled: **Independent** and **Master**.

If **Independent** is selected, then the two receiver's volumes are controlled independently. At the home screen, the left encoder would control receiver 1 and the right would control receiver 2.

If **Master** is selected, then both encoders control the receiver's volumes. With Master selected, one receiver will be a ratio of the other ("x" amount of dB higher or lower than the

other), and turning either encoder will change the volumes appropriately to keep the ratio the same.

See the PC Application section for more information on the different ratios available.



Rx Volume is located under the **Advanced Settings** sub-menu below **Soft Button Labels** as shown above.

- To change the setting, press **SELECT**
- Turn the encoder until the desired option appears
- Press **SAVE**.

## Headset Options

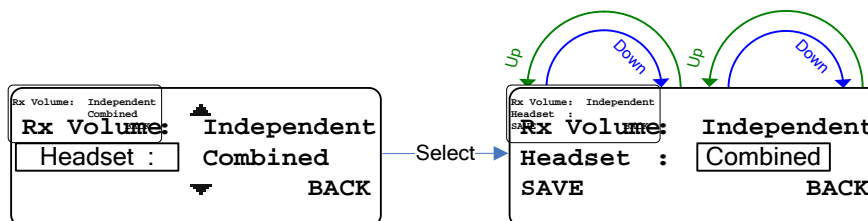
There are two local headset options: **Combined** or **Separate**.

This setting controls where the receiver audio gets routed, to the left and/or right earphone.

If **Separate** is selected, audio for receiver 1 will be routed to the right earphone and audio for receiver 2 will be routed to the left earphone.

If **Combined** is chosen, audio for both receivers will be routed to both earphones.

Note: if only one receiver is enabled then audio to that receiver will be routed to both earphones no matter what headset option is chosen.



The headset setting is located under the **Advanced Settings** sub-menu right below **Rx Volume** as shown above.

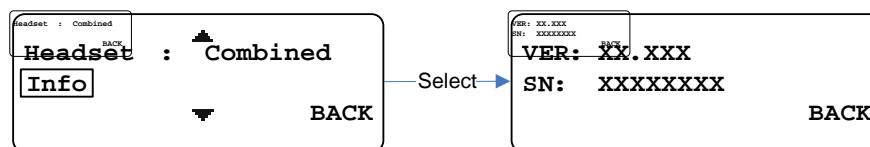
- To change the setting, press **SELECT**
- Turn the encoder until the desired option appears
- Press **SAVE**.

## Info Screen

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The Info screen displays a version number and serial number of the belt pack.

The version number is a composite firmware version number of all the firmware running in the belt pack.



The Info screen is located under the **Advanced Settings** sub-menu right below **Headset**.

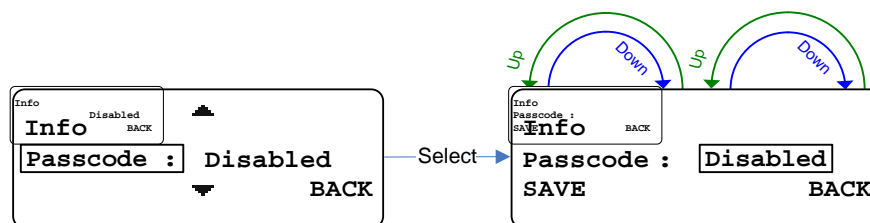
- To view the screen, press **SELECT** as shown above.

## Enabling/Disabling the Passcode

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The **Advanced Settings** sub-menu can be passcode protected.

The passcode is a four digit decimal number (0 – 9).



The passcode can be enabled or disabled from the **Passcode** screen.

It is located right below the **Info** screen in the **Advanced Settings** sub-menu as shown above.

- To change the setting, press **SELECT**,
- Turn the encoder until the desired option appears
- Press **SAVE**.

## Changing the Passcode

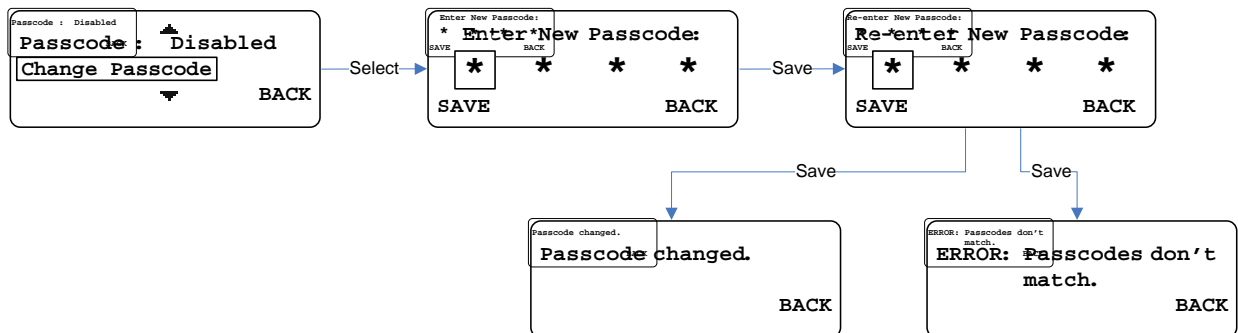
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The passcode can be changed by selecting **Change Passcode** in the **Advanced Settings** sub-menu.

- Select **Change Passcode**
- enter the desired new passcode (pressing **SELECT** to advance to the next digit),
- press **SAVE**
- re-enter the desired new passcode
- press **SAVE** once finished.

If the two passcodes that were just entered match, then the passcode will be changed to that value.

If they don't match, then the passcode will remain unchanged.



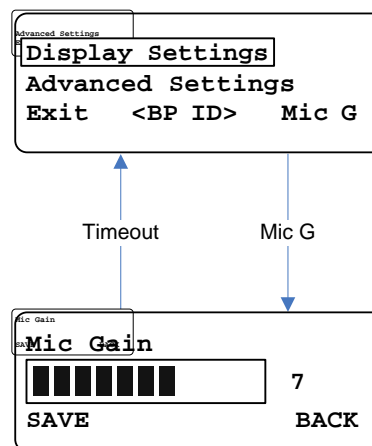
## Microphone Gain

The local headset microphone gain can be changed in the menu.

- From the home screen press the menu button to get to the menu.

The right soft key will show "Mic G."

- Press it to change the microphone gain.



- Use either encoder to change the value.

The bar graphic as well as a number (1 – 11) will show the current value of the microphone gain. The gain will change as the user changes it (it is 'live').

- Press **SAVE** to save the change, and **BACK** to ignore any changes and return to the menu.