RS-603/623
BELTPACKS

INSTRUCTION MANUAL

RS-603/623 Instruction Manual
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INTRODUCTION

Thank you for choosing this product. Clear-Com designed the 600 series of beltpacks to meet the needs of all beltpack users, from beginners to experienced professionals. For advanced users, the 600 series provides the most advanced level of functioning available.

You can choose from among seven different versions of beltpacks, including single and dual-channel units, featuring both Clear-Com and TW (two wire) compatibility.

RS-600 SERIES BELTPACKS

All RS-600 series beltpacks offer the following features:

- Rugged, compact design
- Full compatibility with existing Clear-Com party-line systems
- Four setup configurations that you can activate directly from the beltpack
- Extra 2.5 mm cell-phone type headset jack
- Advanced setup options with V-Pack software

THE RS-603 SERIES

The RS-603 series features four models of beltpacks that are compatible with two-wire ("TW") intercom systems.

MODEL	DESCRIPTION
RS-603	For use with Clear-Com TW products and a monaural headset.
RS-623	For use with Clear-Com TW products and a binaural headset.
RS-603R	For use with RTS™-TW products and a monaural headset
RS-623R	For use with RTS™-TW products and a binaural headset

These models include the following features:

- Two intercom channels
- Local input for program audio
- Program audio volume control
- 3-pin male XLR intercom connectors
- Choice of headset jacks for use with Clear-Com-TW or RTS-TW systems, monaural or binaural audio

QUICK START

To start using your beltpack immediately:

1. Connect the appropriate 3-pin XLR line cables from an active TW intercom line to the beltpack.
2. Turn down the beltpack's incoming volume on each intercom channel with the channel A and channel B volume-control knobs.
3. Plug in a headset to the beltpack's connector labeled "headset."
4. To talk on an intercom channel, press and hold the talk button for the desired channel. Speak into the microphone in your headset.

   ***Note**: If you tap the talk button twice in quick succession, the talk button locks to the "on" setting ("latches") for hands-free use. Press the talk button again to unlatch it. RS-603R and RS-623R models initially power up in RTS-mode, in which a talk button latches with a single tap. You can change this setting with onboard controls or with the V-Pack software. See the chapter "Customizing Your Beltpack" later in this manual for information on programming a beltpack.*

5. Adjust the sidetone and incoming volume levels for both channels as you and others on the channels speak at the anticipated levels for the application.
6. To send a call signal, press the button labeled “call” for the appropriate channel.

OPERATING YOUR BELTPACK

COMPATIBILITY WITH TWO-WIRE ("TW") INTERCOM SYSTEMS

Clear-Com designed the RS-603, RS-623, RS-603R, and RS-623R series of beltpacks to operate with "TW" (two wire) systems. These beltpacks have the appropriate audio levels and frequency response curves for operating on a TW intercom line, as well as having such TW features as AC call signaling and remote microphone shutoff.

The RS-603 and RS-623 models are shipped ready to operate on *Clear-Com* TW intercom lines, while the RS-603R and RS-623R models are shipped ready to operate on *RTS-TW* intercom lines.

However, using a beltpack's onboard controls, you can easily reprogram any of these models to work on the opposite system. For example, you can program a Clear-Com TW-compatible beltpack to operate on an RTS intercom line, and program an RTS-compatible beltpack to operate on a Clear-Com TW intercom line.

For more information about programming a beltpack, see the chapter "Customizing Your Beltpack."

RS-603 AND RS-623 MODELS

All previous versions of Clear-Com TW beltpacks and stations work compatibly with the RS-603 and RS-623 beltpacks. The RS-603 beltpack operates with a monaural headset, while the RS-623 beltpack operates with a binaural headset.

RS-601 beltpack models are compatible with Clear-Com TW products and can be mixed on an intercom channel with RS-603 series units that are operating in Clear-Com mode.

RS-603R AND RS-623R MODELS

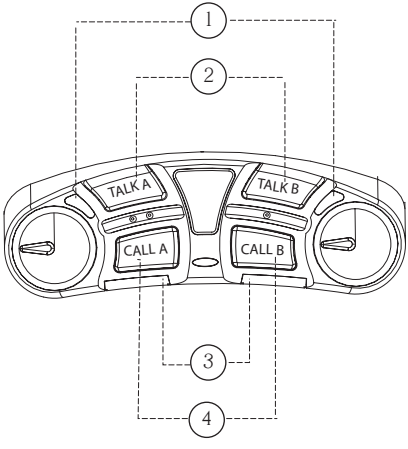
The RS-603R and RS-623R beltpacks feature female rather than male headset jacks. The RS-603 beltpack operates with a monaural headset, while the RS-623R beltpack operates with a binaural headset.

The RS-623R beltpack features a 5-pin female headset jack. Although this model's headset jack is programmed for monaural operation, it is capable of split-ear operation with a compatible headset. You can program the beltpack to operate with a monaural headset using the beltpack's onboard controls or the V-Pack software.See the chapter "Customizing Your Beltpack" for more information.

CONTROLS AND ADJUSTMENTS

Figures 1 and 2 illustrate the beltpack's onboard controls and adjustments.

1 Talk lights, channels A and B
2 Talk buttons, channels A and B



3 Call lights, channels A and B
4 Call buttons, channels A and B

Figure 1: RS-603 Series Control Panel

① Talk Lights, Channels A and B

A channel's green talk light illuminates when you press or latch that channel's talk button.

Some onboard programming options can change the function of this light. For more information about onboard programming, refer to "Customizing Your Beltpack" later in this manual

② Talk Buttons, Channels A and B

To talk on an intercom channel, press and hold that channel's talk button while speaking into the microphone in your headset. While you hold the button, your voice transmits to the intercom channel. When you release the button, your voice no longer transmits to the intercom channel.

To "latch" a talk button "on" for hands-free use, quickly tap the button twice. To unlatch the talk button, press the button again.

With the V-Pack programming software, you can program a talk button to latch with a single or double tap, or not to latch at all. See "Customizing Your Beltpack" for more information.

③ Call Lights, Channels A and B

A channel's call light illuminates when you send or receive a call signal on that channel.

Some onboard and computer programming options can change the function of this light. See “Customizing Your Beltpack” for more information.

④ Call Buttons, Channels A and B

When you press a channel’s call button, a call signal is sent to all other stations on that channel. Pressing the Call A button sends a call signal on channel A. Pressing the Call B button sends a call signal on channel B.

A channel’s call light glows red to indicate both outgoing and incoming call signals on the channel.

Note: *Depending on the type and length of cables attached to the beltpack, crosstalk between cables may cause both channels to indicate a 20 kHz AC call signal that is sent on only one channel.*

⑤ Volume-Control Knob, Channel A

The volume-control knob for channel A adjusts the incoming volume level (“listen level”) for that channel.

There is a limiter built into the beltpack circuitry to prevent incoming volume from exceeding a safe level. You can suspend this limit with the V-Pack software.

The volume A control knob also adjusts mic gain (either main or auxiliary). Refer to “Customizing Your Beltpack” for more information on adjusting outgoing volume.

⑥ Volume-Control Knob, Channel B

The volume-control knob for channel B adjusts the incoming volume level ("listen level") for that channel

There is a limiter built into the beltpack circuitry to prevent incoming volume from exceeding a safe level. You can suspend this limit with the V-Pack software.

⑦ Power Status Light

An illuminated power status light indicates that the beltpack is connected to a powered intercom line.

Note: The light may illuminate even if the beltpack is receiving less than the minimum 12 VDC required for beltpack operation.

5 Volume-control knob, channel A
6 Volume-control knob, channel B
7 Power-status light
8 Setup information window

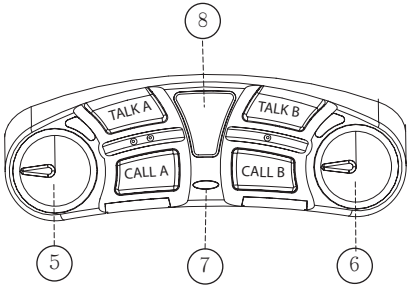


Figure 2: RS-603 Series Control Panel

⑧ Setup Information Window

When you press and hold the setup button for more than three seconds, the setup information window lights up and displays current beltpack programming information.

If you do not select or program a feature within five seconds, setup is cancelled, and the setup information window dims to indicate that

the setup mode is no longer available. This feature prevents changes if the setup button is pressed accidentally.

For more information on programming features from your beltpack, see "Customizing Your Beltpack."

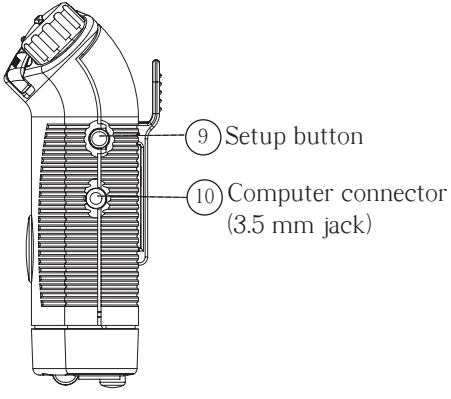


Figure 3: Side panel of RS-602/622 Beltpack

⑨ Setup Button

When you press and hold the blue setup button for approximately three seconds, the beltpack enters "setup mode" during which you can select certain operating features for the beltpack.

Once setup mode is active, if you do not select or program a feature within five seconds, the setup mode deactivates, and the beltpack goes back to its normal state.

See "Customizing Your Beltpack" on page 25 for information on programming your beltpack with this feature.

⑩ Computer Connector

You can program your beltpack from a computer using the V-Pack™ programming software. To use this software you must first physically connect the beltpack to a computer with Clear-Com's VPC-1 cable or its equivalent.

The VPC-1 cable has a tip-ring-sleeve 3.5 mm plug at one end for connecting to the beltpack, and a DB-9F plug at the other end for connecting to a computer's serial port.

To connect the VPC-1 cable from your beltpack to a computer:

1. Plug the 3.5 mm plug at one end of the cable into the beltpack's 3.5 mm jack located just under the setup button.
2. Plug the DB-9F plug on the other end of the cable into the DB-9M serial port socket on a computer.

If your computer has only USB ports rather than a serial port, you must purchase a USB-to-serial port adaptor.

Contact your dealer or the Clear-Com factory for information about obtaining the beltpack programming kit, which contains the V-Pack software, VPC-1 cable, and V-Pack manual. You can also find a PDF of the V-Pack manual at www.clearcom.com.

PIN	FUNCTION
Tip	SDO to computer
Ring	SDI from computer
Sleeve	Ground

Table 1: Pinouts for computer connector

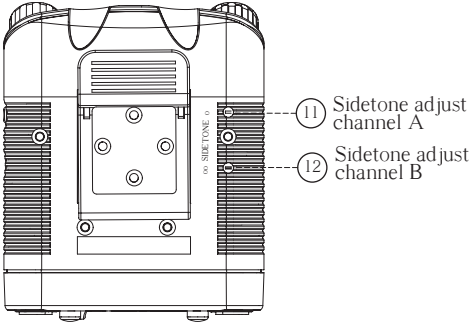


Figure 4: Sidetone controls for channels A and B

(11) Sidetone Control, Channel A

(12) Sidetone Control, Channel B

To adjust the beltpack's "sidetone," or the level of one's own voice in the headset, insert a small flat-headed screwdriver into one of the two holes labeled "sidetone" on the back of the beltpack, as shown in Figure 4.

The upper control adjusts the sidetone for channel A. The lower control adjusts the sidetone for channel B.

Turn the screwdriver until you can no longer hear any sidetone in the headset. This is called the "null" setting.

When you turn the screwdriver again, either clockwise or counterclockwise, the sidetone increases. Adjust the sidetone so that it is somewhere in the mid-range of possible settings, at a level that feels comfortable to you.

The need for an extreme sidetone setting to either limit could indicate a problem with the overall intercom system, such as lack of terminations or multiple terminations. A malfunctioning headset could also be the cause. Do not force the sidetone adjustment control past its stop points as this will damage it.

Note: *The small raised dots next to the sidetone controls help you to identify the correct control in darkened environments. The channel A control has one raised dot adjacent to it. The channel B control has two raised dots adjacent to it.*

CONNECTING THE BELTPACK

A beltpack connects to the intercom line by connecting to a main station, power supply, or another beltpack. You must also connect a headset to the beltpack and, optionally, a computer for programming beltpack options with the V-Pack software.

The following table lists the connectors for the RS-603 series of beltpacks. Figure 5 illustrates the connectors for an RS-603 beltpack

CONNECTOR	RS-603	RS-623	RS-603R	RS-623R
Intercom	3-pin F	3-pin F	3-pin M	3-pin M
Loop-through	3-pin M	3-pin M	3-pin F	3-pin F
Aux headset	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Headset	4-pin M	6-pin M	4-pin F	5-pin F

Table 1: Connectors for RS-603 Series of Beltpacks

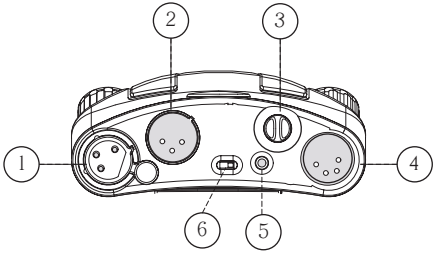
① Intercom Connector / Loop-Through Connector

Figure 1 illustrates the “intercom” and “loop-through” connectors on an RS-603 beltpack. The beltpack connects to a main station, power supply, or to other beltpacks with the connector labeled “intercom.”

The “loop-through” connector connects the beltpack to the intercom line or to another beltpack (“looping through”).

The loop-though connector becomes a program-audio input connector when you select that option with the slide switch located directly next to the connector. See the section "Program-Input Select Switch" below for more information.

***Note**: On the RS-603R and RS-623R models, the intercom and loop-through connectors swap places, in the RTS style.*



1 Intercom Connector
2 Loop-Through Connector
3 Program-Audio Volume Control
4 Auxiliary Headphone Connector
5 Headset Connector (varies with each model)
6 Program-Audio Input Select Switch

Figure 1: RS-603 Connector Panel

③ Program-Audio Volume Control

You can adjust the volume level of the program audio by rotating the program audio volume control. If necessary, you can mute the program audio by turning the knob all the way down.

The program audio is transformer isolated and accepts line level signals in the –20 to +10 dBv range.

④ Auxiliary ("AUX") Headphone

Clear-Com designed the auxiliary headset connector, labeled "AUX," for use with the CC-25 Ultra-Light headset. The beltpack's circuitry is designed to work with the CC-25 headset to produce excellent quality sound.

While certain types of mobile-phone style headsets will fit the 2.5 mm AUX jack, using these headsets degrades system performance due to reduced audio bandwidth and reduced noise rejection at the microphone. You can use such mobile-phone style headsets more reliably with listen-only applications.

The AUX connector provides bias voltage for electret microphones. With V-Pack, you can also program this connector for use with dynamic microphones.

***Note**: Using multiple mobile-phone style headsets in a system could adversely affect nulling, crosstalk, and overall system performance.*

⑤ Headset Connector

You connect a headset to the beltpack at the connector labeled "headset." The RS-603 series beltpacks have varying types of headset connectors. See Table 1 for a list by model number.

The headset connector is always active and has priority if a second headset is connected to the auxiliary ("AUX") connector. Generally you should connect only one headset at a time to a beltpack.

All RS-603 series models provide power to an electret microphone. The microphone's gain automatically adjusts to an electret microphone. See "Specifications" for impedance requirements.

⑥ Program-Audio Input Select Switch

To transform the "loop-through" connector to a program-audio input connector, move the slide switch toward the headset connector, in the direction labeled on the beltpack as "PGM."

***Note**: Placing the switch in the "program" (PGM) position while the jack is still connected to the intercom channel causes the beltpack to lose power and the channel to short out.*

When you do so, the loop-through connector becomes a program audio input connector, disabling the loop-through function of the connector.

The program input is transformer isolated and accepts line level signals in the –20 to +10 dBV range.

To adjust the program audio volume, rotate the knob located on the bottom panel of the beltpack.

To restore the connector to its "loop-through" function, slide the switch back towards the "loop-through" connector, in the direction labeled on the beltpack as "intercom."

***Note**: In some instances, connecting a source of program audio may cause a hum in the system. To remedy this, remove the internal jumper from pins 1 and 2 of P2 and connect the jumper to pin 2 only. This removes the ground and leaves only a balanced, transformer-isolated connection. To gain access to the jumper, remove the beltpack's back cover by removing the four screws.*

CONNECTOR PINOUTS

Intercom Connector Pinouts

PIN	FUNCTION			
	603	623	603R	623R
1	ground	ground	ground	ground
2	+30 VDC/ CH. A *	+30 VDC / CH. A *	+ 30 VDC / CH. A *	+30 VDC / CH. A *
3	CH. B	CH. B	CH. B	CH. B

Loop-Through Connector Pinouts

PIN	FUNCTION			
	603	623	603R	623R
1	ground	ground	ground	ground
2	+30 VDC / CH. A / program in (+)	+30 VDC / CH. A / program in (+)	+ 30 VDC / CH. A / program in (+)	+30 VDC / CH. A / program in (+)
3	CH. B / program in (-)	CH. B / program in (-)	CH. B / program in (-)	CH. B / program in (-)

** The beltpack draws power from pin 2 of the XLR. Alternatively, the beltpack can draw power from pin 3 of the XLR. To accomplish this, unplug the internal jumper from pins 2 and 3 of P1 and connect it to pins 1 and 2 instead. To gain access to the jumper, remove the beltpack's pack cover by removing the four screws.*

Note; On the RS-603R and RS-623R models, the intercom and loop-through connectors swap positions to conform to RTS requirements.

Auxiliary Headset Connector Pinouts

PIN	FUNCTION			
	603	623	603R	623R
Tip	microphone	microphone	microphone	microphone
Ring	earphone	earphone	earphone	earphone
Sleeve	common	common	common	common

Computer Connector Pinouts

PIN	FUNCTION			
	603	623	603R	623R
Tip	SDO to computer	SDO to computer	SDO to computer	SDO to computer
Ring	SDI from computer	SDI from computer	SDI from computer	SDI from computer
Sleeve	ground	ground	ground	ground

Headset Connector Pinouts

PIN	FUNCTION			
	603	623	603R	623R
1	Mic (L)	Mic (L)	Mic (L)	Mic (L)
2	Mic (H)	Mic (H)	Mic (H)	Mic (H)
3	Headphone (L)	Headphone common	Headphone (L)	Headphone common
4	Headphone (H)	Ch. B headphone (H)	Headphone (H)	Ch. B headphone (H)
5		Ch. A headphone (H)		Ch. A headphone (H)
6		Headphone common		

CUSTOMIZING YOUR BELTPACK

You can customize an RS-600 series beltpack for quick adaptation to the needs of any working environment. There are two methods for customizing your beltpack's settings:

- Using a beltpack's onboard controls
- Using the V-Pack programming software

This manual describes programming a beltpack with the onboard controls, and only briefly describes V-Pack. The V-Pack programming software has its own manual, which you can view and download at www.clearcom.com.

***Note**: You may also refer to the printed guide on the back of the beltpack for quick instructions on setting up the beltpack with the onboard controls.*

V-PACK SOFTWARE

The V-Pack programmming software gives you access to the full range of options for customizing your beltpack. For example, you can program a call signal to appear as a steady or flashing light, a bright or dim light, or a tone. You can activate and adjust a noise gate. You can set a minimum headset level.

A unique V-Pack feature is to create one custom setup and quickly transfer it to several beltpacks with the "beltpack cloning" feature. This

feature is useful for programming many beltpacks with the same settings. And V-Pack includes many more features you can program for your beltpack.

To operate the V-Pack software, you must first install it on a computer, then connect the VPC-1 cable to both a beltpack and to your computer.

For more detailed instructions on using the software, see the V-Pack manual or on-line help files. You can access the manual from the Clear-Com Web site. A VPC-1 installation kit, which includes a factory CD containing the V-Pack software, a computer cable, and a printed V-Pack manual is available for purchase through your dealer or directly from Clear-Com.

ONBOARD PROGRAMMING

With onboard programming, you customize the operation of your beltpack using the controls on the beltpack itself.

When you receive your beltpack, it already contains the default settings that will meet the needs of most users. You do not need to program it unless you want to.

However, if you wish to change the settings to better meet your needs, you can do so with onboard programming. The beltpack remembers your new settings until you change them again.

SETTINGS YOU CAN CUSTOMIZE

Table 1 shows the beltpack functions you can customize with onboard controls. Note than each function is assigned a number, which you will refer to for programming.

FUNCTION #	NAME	STATUS	CHANNELS
Function 1	Mode Select	1,2,3,4	Both A and B
Function 2	Latch disable	on or off	A or B
Function 3	Talk disable	on or off	A or B
Function 4	Call-on-talk	on or off	A or B
Function 5	Electret mic (headset)	on or off	Both A and B
Function 6	Call Tone (in earphone)	on or off	A or B
Function 7	Channel swap	on or off	Both A and B
Function 8	Channel exclusive	on or off	A or B
Function 9	Mono (binaural models only)	on or off	Both A and B
Function A	Adjust Microphone Gain	variable	Both A and B
Function L	Locks out onboard access	on or off	Both A and B

Table 1: Functions You Can Edit With Onboard Controls

Before you program the beltpack with the onboard controls, the beltpack must be connected to an intercom line and receiving power, and must not be connected to a computer.

You can program most functions to operate on channel A, channel B, or both. However, some functions affect both channels. Table 1 shows if a function affects one or both channels.

Mode Select, Function 1

A "mode" is one complete "package" of settings for a beltpack. Each beltpack's memory holds four modes. You can easily select and activate any one of the four modes directly from the beltpack.

When you receive your beltpack, each of the four modes is preprogrammed with the Clear-Com default settings. Each mode is similar to the others, with only minor variations.

With onboard setup, you can select any one of the four modes and change specific settings to your requirements. Editing a mode's settings automatically saves them in the beltpack's nonvolatile memory.

To select a mode:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Press and release the Talk A button. A winking number appears in the display. This is the currently selected mode.

***Note**: A "winking" light flashes three times per second.*

3. To select a new mode, press the Talk A button to scroll through the four possible modes, 1 through 4.
4. When the desired mode appears in the display, press the setup button to select the mode and to exit setup.

The selected mode becomes the active mode for both beltpack channels. If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Latch Disable, Function 2

A beltpack's talk button normally latches when you tap it twice. If you select to disable this function, the talk button does not latch.

This setting is recommended if you use the call-on-talk feature, which causes the beltpack to send a call signal each time you press the talk button.

To select "latch disable" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "2" appears in the display.
3. Press the appropriate channel's talk button (Talk A or Talk B) to toggle "latch disable" either on or off for that channel.
   - A channel's talk light reveals the function's status for that channel. If the talk light is on, "latch disable" is on; if the talk light is off, "latch disable" is off.
   - You can set latch disable for one or both channels.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Talk Disable, Function 3

This function turns the talk button on or off. When disabled, the talk button does not function.

Set the talk button to off when you wish to operate the beltpack as a listen-only device.

To select "talk disable" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "3" appears in the display.
3. Press the appropriate channel's talk button (Talk A or Talk B) to toggle "talk disable" either on or off for that channel.
   - A channel's talk light reveals the function's status for that channel. If the talk light is on, "talk disable" is on for that channel; if the talk light is off, "talk disable" is off for that channel.
   - You can set talk disable for one or both channels.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Call-on-Talk, Function 4

This function causes a beltpack to send a call signal each time you press or latch the talk button. You can toggle this function on or off.

When using "call-on-talk," it is recommended that you set the talk button for non-latching operation. Call-on-talk is useful when operating call-signal based components such as the Clear-Com TW-40 2-way radio interface and the Clear-Com KB-212 speaker station.

To select "call-on-talk" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "4" appears in the display.
3. Press the appropriate channel's talk button (Talk A or Talk B) to toggle "call-on-talk" either on or off for that channel.
   - A channel's talk light reveals the function's status for that channel. If the talk light is on, "call-on-talk" is on for that channel; if the talk light is off, "call-on-talk" is off for that channel.
   - You can set call-on-talk for one or both channels.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Electret Microphone, Function 5

This function allows a beltpack to operate with an electret-microphone equipped headset. It only affects a headset connected to the main headset jack. Toggling the function to off reverts the beltpack to dynamic microphone operation.

To select "electret microphone" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "5" appears in the display.
3. Press the Talk A button to toggle "electret microphone" either on or off.
   - If the talk lights are on, the "electret microphone" option is on; if the talk light is off, the "electret microphone" option is off.
   - The "electret microphone" option affects both channels.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Audible Call Signal, Function 6

When this function is on, the beltpack produces an audible call signal in the headset when a call signal is received.When this function is off, it does not.

The audible call signal's volume level is preset. (Volume may vary slightly, depending on headset.) This function is useful for unspoken cues when a visual call signal is not practical or effective.

To select an "audible call signal" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "6" appears in the display.
3. Press the appropriate channel's talk button (Talk A or Talk B) to toggle "audible call signal" either on or off for that channel.
   - A channel's talk light reveals the function's status for that channel. If the talk light is on, "audible call signal" is on for that channel; if the talk light is off, "audible call signal" is off for that channel.
   - You can select "audible call signal" for one or both channels.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Channel Swap, Function 7

When toggled to the "on" setting, this function reverses the beltpack's audio channels so that channel A appears on channel B and channel B appears on channel A. Channel A's controls operate channel B and channel B's controls operate channel A.

Audio on pins 3 and 4 of the intercom channel are reversed to pins 4 and 3.

To select "channel swap" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "7" appears in the display.
3. Press the Talk A button to toggle "channel swap" either on or off.
   - If both talk lights are on, "channel swap" is on; if both talk lights are off, "channel swap" is off.
   - The "channel swap" option affects both channels.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Channel Exclusive, Function 8

This function causes the beltpack to operate with only one active channel. You select one of the beltpack's two channels to operate as the "exclusive" channel.

When you select an exclusive channel, the beltpack's two sets of talk and call buttons operate for only the selected channel. The selected channel's volume-control knob operates, while the beltpack's second volume-control knob does not operate.

To select an "exclusive" channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "8" appears in the display.
3. Press the appropriate channel's talk button (Talk A or Talk B) to toggle "channel exclusive" either on or off for that channel.
   - A channel's talk light reveals the function's status for that channel. If the talk light is on, "channel exclusive" is on for that channel; if the talk light is off, "channel exclusive" is off for that channel.
   - You can select either channel A or channel B to operate as the exclusive channel.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Monaural Headset (RS-623, RS-623R only), Function 9

Normally, channel A audio goes to the right earphone of a headset and channel B audio goes to the left earphone.

When set to "on," this function sends audio from both channels A and B to each earphone.

Note: The RS-623 default option is "split ear." The RS-623R default option is monaural audio to headset.

To select "split-ear headset" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "9" appears in the display.
3. Press the Talk A button to toggle "split-ear headset" either on or off.
   - A beltpack's talk lights reveal the function's status. If both talk lights are on, "split-ear headset" is on; if both talk lights are off, "split-ear headset" is off for that channel.
   - The split-ear headset option affects both channels.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Adjust Microphone Gain, Function A

The microphone "gain" setting allows you to reduce the gain of the mic preamplifier by up to 12 dB. This feature affects both channels. You use the Channel A volume knob to adjust the microphone gain.

To adjust microphone gain:

1. Connect the main or auxiliary headset to the beltpack, depending upon which mic gain you would like to adjust.
2. Press and hold the setup button until the setup information window displays a "P" and then release the button.
3. Repeatedly press the Call A button until "A" appears in the display.

   The talk light for channel A blinks to indicate that you use the channel A volume knob to adjust the gain.
4. Turn the channel A volume knob clockwise to increase the gain and counterclockwise to decrease it.

   As you turn the knob, the setup information window displays a circular progress indicator. When the gain is set to its highest setting, the indicator lights up at the most clockwise position on the display. As you adjust the gain downwards, the progress indicator correspondingly moves counterclockwise on the display, until it is at its lowest setting. Turning the volume knob after the light has reached its highest or lowest setting will not further affect the gain.
5. Press the setup button to save the changes and exit the setup program or press the Call A button to select other functions to program.

The gain adjustment affects only the microphone of the currently connected headset. If you unplug this headset and connect the secondary headset (either main or auxiliary) the settings for that headset remain the same as previously programmed.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

Lockout, Function L

"Lockout" allows you to prevent all editing of beltpack functions with onboard controls.

When you select "lockout," you can access the on-off status of functions with the onboard controls, but you cannot edit them. You cannot access information which mode is active.

To regain access to editing, you can either restore the factory default settings from the beltpack itself, or use the V-Pack software.

To select "lockout" for a channel:

1. Press and hold the setup button until the setup information window displays a "P" and then release the button.
2. Repeatedly press the Call A button until "L" appears in the display.
3. Press the Talk A button to toggle "lockout" either on or off.
   - The beltpack's talk lights reveal the function's status. If both talk lights are on, "lockout" is on; if both talk lights are off, "lockout" is off.
   - The lockout option affects both channels and all modes.
4. When you have made your selections, press the setup button to save them and to exit setup, or press the Call A button to select other functions to program.

If you do not press a button within five seconds, the beltpack exits the setup program without making any changes.

RESTORING THE FACTORY DEFAULT SETTINGS

To restore the factory default settings for all four modes:

1. Press and hold the setup button until the setup information window displays a “P” and then release the button.
2. Press and hold the Call A button. The display changes from “1” to “2.”
3. While still holding the call button down, press the setup button. The display momentarily shows an “F” to indicate that the beltpack is now programmed with the factory default settings.
4. Release the setup button and the call button.

   The beltpack resumes operation with the factory default settings.

SPECIFICATIONS

0 dBv is referenced to 0.775 V RMS

General

Amplifier Design:	I.C. amplifiers, including solid-state digital switching and signaling circuits. Current-limited and short-circuit protected.
Signal to Noise:	>75 dB
Bridging Impedance:	>15k
Line Level:	-14 dB, +5 dB max.
Sidetone Adjust:	>35 dB
EMI and RFI rejection:	>60 dB

Microphone Pre-Amplifier

Headset Mic Impedance:	200 ohms
Gain, mic to line:	41 dB (dynamic)
Limiter Range:	26 dB
Frequency Response:	200 Hz – 12 kHz contoured for intelligibility

Program Input

Program input	Balanced, transformer isolated
Input sensitivity:	–20 dBv to +10 dBv
Frequency response	50 Hz – 18 Hz, ± 2 dB

Headphone Amplifier

Load Impedance:	50 - 2,000 ohms
Output Level:	+17 dBv before clipping
Distortion:	<0.1% THD @ 1 kHz
Gain, line to output:	+34 dB
Frequency Response:	100 Hz - 18 kHz, ±2dB

Connectors

Intercom Line:	(2) 3-pin XLR–M–F
Headset:	RS-603/623: 4-pin XLR–M RS-603R: 4-pin XLR–F RS-623R: 5-pin XLR-F

Power Requirements

RS-602/622	55mA quiescent 62mA average talk, both channels simultaneously

Power Requirements (continued)

50mA talk with signaling, both channels simultaneously

DC Voltage Range: 12-32 volts

Environmental

Operating Temp. Range: 0°C - 70°C (32°F - 158° F)

Humidity: 0 - 90% relative humidity

Dimensions

4.58"H x 3.73"W x 1.34"D (116 x 95 x 34 mm)

Weight

7.8 oz. (0.22 kg)

Specifications subject to change without notice.

MAINTENANCE

GENERAL USAGE NOTES

Cabling choices can greatly impact the performance of an intercom system. Length, gauge, and shield quality, as well as routing, must all be considered. For two-pair cable, crosstalk performance is affected both by length and DC resistance of the shield (the lower the better). The quality of the headset cable can affect crosstalk, particularly in large systems.

Note: For more information on installing a party-line system, see the *Party-Line Installation Manual*.

A beltpack's headphone amplifier accommodates impedances from 50 to 2000 ohms. The mic preamplifier accommodates impedances from 50 to 1000 ohms. Output level is more critical to optimal performance than the impedance. Higher impedances may require more microphone gain, thereby raising the noise floor.

***Note**: If you install an RS-603 series betlpack with standard (non-TW) Clear-Com equipment on a non-TW line, channel B functions, but channel A does not.*

To avoid oscillation from the unterminated A channel, you can use the beltpack's onboard controls to select one-channel operation ("channel exclusive," function 7).

MAINTENANCE

BELTCLIP

In some applications, you may want to wear the beltpack "upside down" or "sideways."

To rotate the beltclip to a new position:

1. Remove the setup help label and the two retaining screws.
2. Rotate the beltclip 90º or 180º as desired.
3. Replace the screws.
   The label on the beltclip is not reusable and must be replaced. You can order a replacement label from your distributor or from the factory.

Use the same procedure for replacing a broken or damaged beltclip.

CLEANING

To clean the surface of your beltpack, use a damp cloth and mild soap. Remove all soap residue and excess moisture before returning to service.

PROBLEM	Low audio level.
CAUSE	Multiple terminations on the line. Excessive capacitance and/or resistance due to cable length and/or gauge.
SOLUTION	If connected to more than one main station or power supply, check that there is only one termination per channel.

PROBLEM	Call light stays on.
CAUSE	DC voltage present on audio line pin 3.
SOLUTION	Check cables for shorts and cross-wiring. Make sure there is a termination on the channel.

PROBLEM	Mic level too low or too high.
CAUSE	Mic distance from mouth too far or too close; mic gain set incorrectly; sidetone set incorrectly; no terminations or more than one termination.
SOLUTION	Reposition mic and/or change headset mic gain.

PROBLEM	Headset level too low or too high.
CAUSE	Unterminated channel; improper impedance; shorted line.
SOLUTION	Adjust sidetone and volume controls; check wiring; use compatible headset.

PROBLEM	Can't change configuration on beltpack.
CAUSE	Disabled access to functions.
SOLUTION	Restore access by resetting to factory default settings or with V-Pack.

WARRANTY

Vitec Group Communications (VGC) guarantees this product to be free of manufacturing defects in material and workmanship under normal use for a period of two years from the date of purchase.

TECHNICAL SUPPORT

To ensure complete and timely support to its customers, VGC maintains Technical Service Centers (TSC) staffed by qualified technical personnel. A Technical Service Center is staffed to respond to all technical inquiries and to troubleshoot technical problems regarding all products supplied by VGC. A TSC is fully available to VGC's customers *during the full course of their warranty period*.

Instructions for reaching our Technical Service Centers are given below.

For technical support from Europe, the Middle East, and Africa

Call: +49 40 66 88 40 40 Monday through Friday 09:00 – 17:00 (GMT)

+49 40 66 88 40 41 24hrs, any day (But you must have your PIN number ready.)

Web site: www.clearcom.com (Click the 24 X 7 User Support symbol on the Web site.)

For technical support from the Americas and Asia

Call: +1 510 496 6666 or 800 VITEC USA

Web site: www.clearcom.com (Click the 24 X 7 User Support symbol on the Web site.)

Email: support@clearcom.com

FAX: +1 510 496 6610

EXCEPTIONS

This warranty does not include damage to a product resulting from cause other than part defect and malfunction. The VGC warranty does not cover any defect, malfunction, or failure caused beyond the control of VGC, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the manual, defective or improperly associated equipment, attempts at modification and repair not approved by VGC, and shipping damage. Products with their serial numbers removed or defaced are not covered by this warranty.

WARRANTY REPAIRS

While VGC will ensure complete system integrity by providing whatever support is necessary to resolve any failure covered under the

terms of the warranty, the normal procedure will be to repair or replace any defective Line Replaceable Unit (LRU) that is returned to VGC during the warranty period.

A Line Replaceable Unit (LRU) is defined as: an assembly that can be safely removed from the system and readily replaced by plugging in a new unit. In the case of ancillary items such as power supplies, the entire power supply would be returned. Whereas, in the case of circuit cards, control panels, etc., only these assemblies would be returned for repair. All equipment provided by VGC is covered under the warranty.

This warranty does not include defects arising from installation (when not performed by VGC), lightning, power outages and fluctuations, air conditioning failure, improper integration with non-approved components, defects or failures of customer furnished components resulting in damage to VGC provided product.

NON-WARRANTY REPAIRS

Equipment that is not under warranty must be sent prepaid to VGC. If requested, an estimate of repair costs will be issued prior to service. Once repair is approved and completed, the equipment will be shipped freight collect from the TSC.

REPLACEMENT UNITS

Should VGC determine, in its reasonable discretion, that any part of a product is defective due to faulty materials or workmanship, VGC shall at its expense, repair or replace such part and return the repaired/replacement part to the customer. The provisions of this warranty shall apply to the repaired/replacement part for the unexpired portion, if any, of the warranty period.

EMERGENCY ON-SITE ASSISTANCE

VGC can provide emergency on-site technical assistance in support of warranty activities. The level of support effort required will be decided on a case-by-case basis. VGC has the qualified technical staff to support any and all emergency site activities should they occur.

LIABILITY

The foregoing warranty is VGC's sole and exclusive warranty. There are no other warranties (including without limitation warranties for consumables and other supplies), or guarantees, expressed or implied (including, without limitation, any warranties of merchantability or fitness for a particular purpose), of any nature whatsoever, whether arising in contract, tort, negligence of any degree, strict liability or otherwise, with respect to the products or any part thereof delivered hereunder and/or with respect to any non-conformance or defect in any such product and/or part thereof delivered hereunder and/or with

respect to any non-conformance or defect in any such product and/or part thereof delivered hereunder, or any other warranties or guarantees, including but not limited to any liability of VGC for any consequential and/or incidental damages and/or losses (including loss of use, revenue, and/or profits). In any event, the maximum extent of VGC's liability to customer hereunder shall not under any circumstances exceed the cost of repairing or replacing any part(s) fount to be defective within the warranty period as aforesaid.

RETURNING EQUIPMENT FOR REPAIR

All equipment returned for repair must be accompanied by:

- Documentation stating the return address, telephone number, date of purchase, and a description of the problem.
- A repair reference number.

To obtain a repair reference number, contact the appropriate Technical Service Center at the phone numbers or Web sites listed below. Our representatives will give you instructions and addresses for returning your equipment. By talking with our representatives, many problems can be resolved on the phone.

For returns from Europe, the Middle East, and Africa

Call: +49 40 66 88 40 40 Monday through Friday 09:00 – 17:00 (GMT)

+49 40 66 88 40 41 anytime, any day

(But you must have your PIN number ready)

Web site: www.clearcom.com (Click the 24 X 7 User Support symbol on the Web site.)

For returns from the Americas and Asia

Call: +1 510 496 6666 or 800 VITEC USA

Web site: www.clearcom.com (Click the 24 X 7 User Support symbol on the Web site.)

Email: support@clearcom.com

FAX: +1 510 496 6610