



GAI-TRONICS® CORPORATION
A HUBBELL COMPANY

CommandPLUS Series Desktop Console Operator's Manual



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User Instructions (USA)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This equipment complies with Part 68 of the FCC rules. Located on the equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN). If requested, this information must be provided to the telephone company. The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's contact the telephone company to determine the maximum REN for the calling area. This equipment cannot be used on the telephone company-provided coin service. Connection to Party Line Service is subject to State Tariffs. If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact:

GAI-Tronics

P.O. Box 1060

Reading, PA 19607-1060 USA

800-492-1212 or 610-777-1374

If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved. This equipment uses the following USOC jacks: RJ11C. It is recommended that the customer install an ac surge arrester in the ac outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightening strikes and other electrical surges. This equipment is Hearing-Aid Compatible (HAC). The telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone number provided may not be a 900 number or any other number for which charges exceed local or long-distance transmission charges.)

User Instructions (Canada) CP-01, Issue 8, Part I: Section 14.1

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.



Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

CP-01, Issue 8, Part I: Section 14.2

NOTICE: The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Scope of Manual

This manual is intended for use by the operator of any of the models of the CommandPLUS Series Desktop Console. It contains all operating instructions for the equipment described and is current as of the printing date. For installation and service information, please refer to the CommandPLUS Series Desktop Console User and Installation Manual, 43004-013.

Certain console functions require initial configuration programming, and therefore, references are made in the manual to GAI-Tronics' CARD Suite Software application. The programming for your console must be completed before operation. Please refer to the Help documentation of the CARD Suite Software and the CommandPLUS Series Desktop Console User and Installation manual, which is packaged with the console, for further information.

How This Manual is Organized: The Guided Tour provides an overview of the of the CommandPLUS Series console and some general information the operator should be familiar with before proceeding to the Standard Operation section.

The Standard Operation section describes and instructs the operator on the proper use of the standard features of the console. The Options section provides user information on DC Control, E&M Control, Enhanced Phone Interface with Radio Patch, and Supervisory Control. A section on Console Diagnostics covers user-adjustable settings available to the operator.

Ordering Replacement Parts

When ordering replacement parts or requesting equipment information, please include the complete identification number. This applies to all components, kits, and chassis. If the component part number is not known, the order should include the number of the chassis or kit of which it is a part and sufficient description of the desired component to identify it. Order parts from:

Customer Service

GAI-Tronics

400 E. Wyomissing Ave.

Mohnton, PA 19540

US: 800-492-1212

Outside US: 610-777-1374

Service and Repair

Inoperative or malfunctioning equipment should be returned to the factory for repair. Please call **1-800-492-1212** to obtain a Return Authorization number, published repair prices, and shipping instructions. A Return Authorization number can also be obtained by visiting our website at www.gai-tronics.com.

NOTE: A purchase order or credit card number is required prior to processing non-warranty repairs.

Features of the CommandPLUS Series Desktop Console

- Enhanced multi-tasking operation
- Available in 4, 8, and 12-channel control. 4 and 8-channel consoles are field expandable.
- Accommodates a minimum of 10 consoles per system
- Supports Tone, DC, and E&M control types
- Includes Paging Encoder for individual, sequential multi-channel group, stack paging, and one-touch paging
- DTMF Decode for Automatic Number Identification
- 16-Frequency control per channel
- Optional MDC1200 STAT-ALERT Signaling capability
- 24 programmable buttons allocated as two per channel to support channel functions such as alert tone, frequency change, infinite or timed mute, monitor and supervisor as well as one-touch paging using preprogrammed aliases
- Optional full-duplex telephone interface capability
- Supports headset, desktop microphone, and footswitch
- Allows standard PC applications to capture printer port output for logging
- Individual master volume controls for select and unselect speakers
- Individual select and unselect volumes per channel
- Easy-to-use Windows[®]-based programming application
- VU-meter for receive and transmit audio
- Logging recorder output
- Custom paging and multiple alert tones (4)
- 12/24-hour clock

Model Chart

The model number, located on the nameplate on the bottom, specifically identifies GAI-Tronics equipment. If additional options are ordered, the option is identified on the circuit board. The following is a list of the CommandPLUS Series Desktop Console models:

Models	Description
ICP9004A	CommandPLUS Series 4-Channel Desktop Console (expandable)
ICP9008A	CommandPLUS Series 8-Channel Desktop Console (expandable)
ICP9012A	CommandPLUS Series 12-Channel Desktop Console

The following options may be ordered pre-installed in your CommandPLUS Series Desktop Console:

Options	Description
CP0010	DC Control (Order one for each dc channel)
CP0040	E&M Signaling (One option for every four channels – requires CP0050)
CP0050	Supervisory Control
CP0060	External Enhanced Full Duplex Phone Interface
CP0650	MDC1200 STAT-ALERT Signaling
CP0070	Direct Enhanced Full Duplex Phone Interface

The following options are included in the standard console and are available to you through either programming selection or direct access:

- DTMF Decode
- Positive Mode Control
- Paging Encode
- Multi-Select Option
- Logging Recorder Output
- 16-Frequency Operation

The following field installation kits and accessories are available for installation in the CommandPLUS Series Desktop Console:

Kit	Description
TDN9413A	MDC1200 STAT-ALERT Kit
XCP0010A	DC Control Kit
XCP0020A	16-Frequency Capable Kit (included with new console purchase)
XCP0030A	25-Pair Telco Interface Kit
XCP0040A	4-Channel E&M Signaling Kit (requires CP0050 or XCP0050A)
XCP0050A	Supervisory Control Kit
XCP0060A	External Enhanced Phone Interface Kit
XCP0070A	Direct Enhanced Phone Interface Kit
XCP0080A	Battery Revert Power Supply Kit
XCP0100A	4 Channel Expansion Kit
XCP0110A	Replacement Button/Elastomer Kit
XCP0130A	Logging Recorder Output Module (included with standard console)
XCP0140A	Headset Box
XCP0150A	25-foot cable, 25-pair with connector
XCP0160A	50-foot cable, 25-pair with connector
XCP0500A	Desktop Handset with Base
XGM003A	Gooseneck Mic
XHS003B	Amplified Headset (requires XCC003B)
XCC003B	Coiled Cord with PTT (requires XCP0140A)
XFS002A	Dual Footswitch

The following programming software cable is required for programming the CommandPLUS Series Desk Console:

Model	Description
XAC1000A	CARD Suite Software application (included with console purchase)
XCP0170A	Programming Cable

CommandPLUS Series Desktop Console Front Panel

NOTE: Many of the CommandPLUS Series Desktop Console functions must be initially set-up and configured using the GAI-Tronics CARD Suite Software application. It is assumed that the console has been programmed for your application and installed by qualified personnel.

The CommandPLUS Series Desktop Console front panel is shown below. Please refer to it for locations of buttons, LED indicators, and the console display screen.

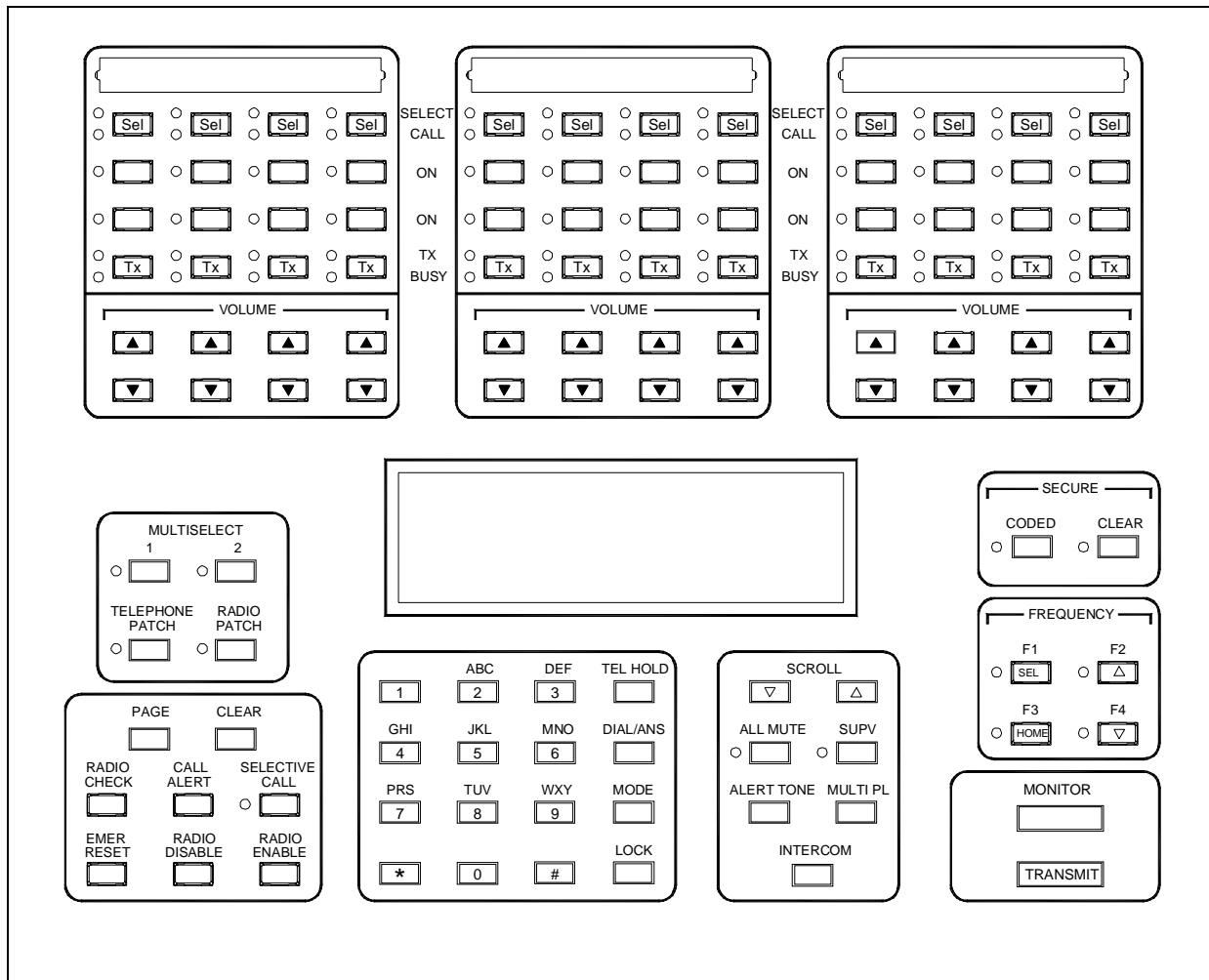


Figure 1. CommandPLUS Series Desktop Console Front Panel

LED Indicators

There are LED indicators located in specific places on the front panel that are either associated with a button, associated with a function, or associated with a status. The placement of each LED intuitively associates the indicator with the proper function or status. The function of each LED is discussed in the Standard Operations section of this manual. It is important that the operator be familiar with each indicator, its function, and its effect on the operation of the console in both the active and inactive state.

Audible Indicators

There is an audible indicator that indicates the operator has attempted to perform a function or has pressed a button that is prohibited in the current mode of operation, or is not available. To hear this error beep while in normal operation, press the MODE button on the right of the numeric keypad. A short beep is generated when the button is pressed. Whenever this beep sounds, it indicates that the operator attempted to perform some function that the console would not allow. The operator should examine the console and determine why the beep was generated and become familiar with the proper operation of each button for future use.

There is also a tone generated when the channel volume is changed only when the channel is not receiving audio. This volume beep is generated to allow the operator to adjust the channel volume to a relative setting and is indicative of the level of receive audio.

The operator may hear other tones known as side tone that do not indicate any particular function, but allow the operator to hear tones that are being transmitted by the console or know that digital signaling is being transmitted. These side tones are generated during paging, alert tone and digital signaling generation.

The Console Display

An important feature of the CommandPLUS is the console display located in the central area of the key panel. At the top of the console display is the status line, which displays information for the selected channel. Below the status line is information that is relevant to the functions that are taking place at the time. Located below the console display to the right are SCROLL buttons with up and down arrows that are used to move through lists. The LOCK + CLEAR button combination can be used to clear selections and remove decoded DTMF and signaling data from the window.

VU Meter

The VU meter appears in the center of the bottom line of the console display. The VU provides an indication of the signal level for transmitted audio during a transmission or intercom, and the signal level of the selected channel receive audio during receive mode. The VU meter should not be used as a measurement device as it is not calibrated. It provides a reference for the operator to know the proper audio is being transmitted or received.

While becoming familiar with the console, the operator should watch the VU for proper and consistent deflection during voice transmissions to ensure that the field units are receiving audible and intelligible audio. If the operator sits too close to the microphone and the VU is deflected fully, the audio heard by the field units may be distorted and unintelligible. Likewise, if the operator is not close enough to the microphone and there is little deflection of the VU meter, the field units may find it difficult to hear the operator over the background noise in the dispatch area. The sensitivity of the microphone can be adjusted for different (loud versus quiet) voice types. Refer to the Diagnostics section of this manual for adjustment of the microphone sensitivity.

Clock and Calendar

The clock located at the left side of the bottom line of the console display provides the current time. The clock can be configured for AM/PM or 24-hour operation using CARD Suite. At the right side of the bottom line of the display is the calendar that provides the month, day and year. The calendar can be configured for several modes of operation including numeric or text month and as MM/DD/YY or DD/MM/YY.

Using Audio Accessories

Certain audio accessories can be connected to the console for use by the operator. These accessories include a desk microphone, a gooseneck microphone, a handset and a footswitch. It is important to understand that the transmit feature of these accessories emulates the main TRANSMIT button and the MONITOR button of these accessories emulates the main MONITOR button. The same restrictions and applications of these accessory buttons apply as described in the Standard Operations section of this manual. Whenever the main TRANSMIT button is referenced in the following sections, it is understood that the operator could use the transmit button of an attached accessory instead. This same understanding also applies to the MONITOR button.

Auto-Repeat Buttons

Certain buttons on the console are designed to auto-repeat similarly to that of a computer keyboard. When these buttons are pressed and held, after about a 1-second delay, the button begins to auto-repeat at about two presses per second. When the key is released, the auto-repeat ceases. The auto-repeat keys include the channel VOLUME Up/Down and the SCROLL Up/Down.

Using the Lock Button

The LOCK button located on the lower right side of the numeric keypad functions like the Shift key on a computer keyboard. To use the LOCK key in combination with another key, press and hold the LOCK key, and then press the key to create the key combination. To enter several LOCK key combinations, the LOCK key can be held while more than one combination key is pressed in turn. Listed below are some of the LOCK button functions.

Lock Button Combination	Description
Lock + VOLUME Up	Activates the select speaker when the optional headset is used.
Lock + VOLME Down	Deactivates the select speaker when the optional headset is used.
Lock + All Mute	Indefinitely mutes the unselect speaker.
Lock + Mode	Accesses the main Console Diagnostic Function menu.
Lock + *	Toggles the console screen between black text on white background and white text on black background.
Lock + Page	Send a form feed command to the printer.
Lock + Multi-Select #	Saves a Multi-Select selection.
Lock + 1, 2, 3, 4	Allows the entry of 'A', 'B', 'C', 'D' respectively for signaling and paging entries
Lock + Transmit	Stack a page for stack paging

Selected and Unselected Channels

At any given time, a single channel is designated as the selected channel. Many of the console's features such as paging, signaling, monitor, alert tone, intercom and the main TRANSMIT button operate on the selected channel. Refer to the status line or top line of the console display located in the center of the desktop for information concerning the selected channel. This information includes the channel's alias as defined by CARD Suite, channel state, transmit, receive, monitor, intercom, supervisor, and other optional information configured using CARD Suite such as PL setting and secure state of the channel.

Refer to the Definitions and Acronyms section on page 51 for definitions. If a channel is not selected, it is considered unselected. The selected channel's audio is directed to the select speaker (left) and summed audio from all other unselected channels is directed to the unselect speaker (right).

In some modes of operation, the SELECT indicator flashes on the selected channel while the SELECT indicator of another channel or other channels is lit steadily. Whenever a SELECT indicator is flashing, it indicates that the console is in a mode of operation where the selected channel is not included. In some of these cases, the selected channel audio is routed to the unselect speaker while the audio of the channel(s) included in the current mode of operations is/are routed to the select speaker. While becoming familiar with the different modes of operations, the operator should note when the SELECT indicator is flashing and take time to understand the behavior of the console when this occurs.

Setting the Speaker Level

On the top of the console are two volume adjustment knobs that adjust the select and unselect speaker volumes. The left knob controls the master volume of the select speaker. The right knob controls the master volume of the unselect speaker. The operator should adjust the level of each speaker so that select and unselected audio can be discerned from each other.

Using the All Mute Button

Since the console uses only two speakers for up to 12 channels, it may sometimes be difficult to hear a particular field unit in busy or noisy environments. To allow a particular channel to be isolated from all other channels, the all-mute feature of the console allows all except the selected channel to be muted.

The ALL MUTE button, located to the right of the numeric keypad, activates the all-mute feature (by factory default) for 10 seconds. The ALL MUTE indicator lights steadily and the unselect speaker volume is attenuated approximately 30 dB. Though greatly attenuated, the unselected audio is still audible if a field unit on an unselected channel requires immediate assistance. Pressing LOCK + ALL MUTE activates the unselect mute indefinitely and is indicated by a flashing ALL MUTE indicator. Pressing the ALL MUTE button a second time deactivates the all-mute feature.

Select Speaker Off-Hook Override

When a headset is connected or the handset is taken off-hook, the selected channel audio is automatically routed to the handset or headset and the select speaker audio is muted. In this situation, only the operator can hear the selected channel audio. In some situations, a supervisor may want to listen in on a conversation. The console employs a select mute override feature that can be used to unmute the select speaker to allow a supervisor to listen to the current conversation without interfering with the operator's current set-up.

The select mute feature is activated by pressing **LOCK + VOLUME Up** on the selected channel when a handset or headset is used. The operator and supervisor can now hear the selected channel audio. To reactivate the select mute, press **LOCK + VOLUME Down** on the selected channel, disconnect and reconnect the headset or place the handset on and back off-hook.

Setting the Channel Volume

The volume knobs on the top of the console adjust the master volume of the select and unselect speakers. Each channel has three volume settings available to adjust the relative level of each channel. Adjusting the relative speaker volume allows the audio level of individual channels to be adjusted for the desired operating environment. These settings will remain even if the console is reset or loses power.

When the channel is selected and a headset or handset is in use, pressing the **VOLUME Up/Down** adjusts the relative headset or handset volume for the selected channel. If a headset or handset is not in use, pressing the **VOLUME Up/Down** on the selected channel adjusts the relative select-channel speaker volume. When a channel is unselected, pressing the **VOLUME Up/Down** adjusts the relative unselect-channel speaker volume. When the channel volume is changed, a beep indicative of a new channel volume is heard through the appropriate select or unselect speaker if no receive audio is detected on the channel being adjusted.

Selecting a Channel

As described earlier, at any given time during normal operation, one channel is designated as the selected channel. All of the non-channel specific buttons that affect a channel operate on the selected channel. These include the **ALL MUTE**, **SUPERVISOR**, **ALERT**, **MULTI-PL**, **INTERCOM**, **SECURE**, **FREQUENCY**, **MONITOR** and **TRANSMIT** buttons.

To select a channel, press the **SEL** button on the desired channel. When the channel is selected, the **SELECT** indicator lights. When another channel is selected, the currently selected channel is unselected and the new channel is selected. Depending on the **CARD Suite** configuration, channels can be disabled or may not be available. An error beep is generated when attempting to select one of these channels.

Using the CALL Indicator

A red CALL indicator is provided on each channel to indicate reception of audio on the channel. When active, the CALL indicator flashes. This indicator allows the operator to quickly glance at the console to determine which channel is currently receiving audio.

After audio is no longer detected on the channel, the CALL indicator remains active for two seconds (factory default). CARD Suite can be used to configure the CALL indicator to flash for a specified time period, or to flash until a transmission is made on the channel. The operator should inquire with the system supervisor about the configured behavior of the call indicator.

Using the Programmable Buttons

There are two programmable buttons located below the SEL button on each channel. These buttons may be programmed to perform various operations specific to the channel or for one-touch paging using preprogrammed aliases.

Channel Mute

The channel mute feature allows a channel to be muted at any time during all modes of operation. This may be useful if the reception on a particular channel is interfering with a transmission, or if the operator is attempting to identify on which channel a particular reception is being received.

Using CARD Suite, the channel mute feature can be programmed to mute the channel's audio indefinitely or for a timed duration. If the mute is indefinite, the button indicator will flash. If programmed for a timed duration, the indicator will illuminate. If the operator presses the channel mute button at any time while the channel is muted, the channel's audio will be unmuted and the indicator will be extinguished.

Channel Frequency Change

The channel frequency change feature allows the frequency of the channel to be changed on a particular channel at any time while in most modes of operation without first selecting the channel. The button indicator will light only when the channel is on the particular frequency associated with that button.

If, for example, the channel has three frequencies enabled and the two programmable buttons are programmed for F1 and F2, the F1 indicator will light when the channel is on F1. If the channel is on F2, the F2 indicator will light. If, however, the channel is on F3, neither the F1 nor the F2 indicator will light. For more information on frequency operation, see Basic Frequency Operation on page 19 in the Frequency Selection section of this manual.

It is not possible to execute a channel frequency change while selecting a radio-patch, multi-select, frequency or multi-PL.

Channel Supervisor

The channel supervisor feature allows supervisor control to be activated or deactivated on a channel at any time in all modes of operation, without first selecting the channel. While the channel has supervisor mode activated, the button indicator of the channel supervisor button will light. For more information on supervisor operation, see Supervisor Control CP0050/XCP0050 in the Options section of this manual.

Channel Alert

The channel alert feature can be programmed to generate one of the four available alert tones on a particular channel at any time during most modes of operation, without first selecting the channel. The channel alert buttons behave exactly like the ALERT button. While the channel alert is activated, the button indicator will illuminate. To extend the talk-time, press and hold the main TRANSMIT button or the channel's TX button. To end the talk-time, press and release the channel alert, main TRANSMIT or channel TX button. For more information on the alert tone feature see Activating an Alert Tone on page 16 in this manual.

It is not possible to execute a channel alert while selecting a radio-patch, multi-select, frequency or multi-PL.

Channel Monitor

The channel monitor feature allows a particular channel to be placed into monitor mode at any time during most modes of operation without first selecting the channel. While the channel is in monitor mode, the button indicator will be lit. For more information on monitor operation see Checking Channel Activity with the Monitor Button on page 16 in this manual.

It is not possible to execute a channel monitor while selecting a radio-patch, multi-select, frequency or multi-PL.

One-Touch Paging

A one-touch paging alias can be assigned to any programmable button to allow transmission of that paging alias at any time during most modes of operation, without the need to select the associated channel.

Depending on the programming of the alias through the use of CARD Suite, the page may go out on this channel or another preprogrammed channel depending on the auto-base selection in the alias. For more information see One-Touch Paging in the Paging Encode section of this manual.

It is not possible to execute a one-touch page while selecting a page, a radio-patch, multi-select, frequency or multi-PL. It is possible to do so after the selection is complete.

Wildcard

The wildcard feature can be used to send preprogrammed commands to the base station at any time during most modes of operation. These commands are configured using CARD Suite and the function of each should be explained to the operator during training. If enabled, the configuration allows for a push-on/push-off function or a momentary function. When configured for push-on/push-off, the button indicator of the programmable button lights green when the push-on function is activated. A second push of the button activates the push-off function of the button and extinguishes the green indicator. If configured for momentary operation, the button indicator lights only during the transmission of the wildcard.

When selected, the wildcard function sends a standard EIA tone to the radio. It is a function of the radio to interpret the received tone and react with an appropriate action. This feature is often used to turn repeater stations on and off.

It is not possible to execute a wildcard while selecting a radio-patch, multi-select, frequency or multi-PL.

Checking Channel Activity with the Monitor Button

In some systems it may be necessary for the operator to monitor a channel for activity prior to transmitting. If this is not done, it is possible that the transmission will “step” on another transmitting user in the system on the same frequency, possibly resulting in neither transmission reaching the intended destination. The operator should inquire with the system supervisor if it is necessary to first monitor a channel prior to transmission.

To activate monitor on a channel, press the channel monitor button, if available, or select the channel and press the MONITOR button. If the channel is the select channel, the display indicates MONITOR on the right side of the status line. The channel remains in monitor mode until any transmission is made, either by the operator of this or any parallel console. Refer to on page 31 in the Options section for use of the monitor function using dc remote control.

Parallel Activity

Depending on the system installation, more than one console or operator position may share a channel. When two or more units share a single channel, the units are considered to be in parallel. When another unit transmits on a shared channel, it is called parallel activity to all other connected consoles. The CommandPLUS is equipped with a parallel activity indicator called the BUSY indicator. The BUSY indicator located next to the channel TX button lights when parallel activity has been detected. When active, no other unit is allowed to transmit on the channel.

If the operator attempts a transmission of any kind, including intercom, on the channel while parallel activity is detected, an error beep is generated and the transmission will not be made. It is important that the operator always ensures that the proper channel is transmitting before assuming a voice transmission is active. If it is certain that no parallel unit is transmitting (or none is connected) and the BUSY indicator is activated, it is not a console malfunction but an effect of the equipment between the console and the actual transmitter. This behavior, however, is not normal and the system supervisor should contact GAI-Tronics field service to resolve the issue.

Parallel Audio

When two units are in parallel, by default, each unit will hear the other when a transmission is made on one console. This is desirable when one console is located in a different room or installation and the other console wishes to monitor activity of that console. If the consoles are in the same room, feedback may be an issue to be addressed. Feedback occurs when the microphone of the transmitting console picks up parallel audio from the speaker of the other console. When this occurs, this audio is amplified and transmitted which, again, is output from the speaker of the parallel console and picked up by the transmitting console. This continues until a rather loud high-pitched squeal or whine is heard.

To prevent parallel audio feedback, the parallel mute feature of the CommandPLUS can be employed to prevent audio feedback from occurring. When enabled via CARD Suite, the transmitted audio is removed from the speaker of the parallel console, thus, preventing feedback.

When there are three or more parallel consoles in a system, and two are located in the same room while the third is at a different location, parallel mute may not be a solution. If the two co-located parallel consoles wish to monitor the activity of the third console, but must prevent feedback between each other, parallel mute will not suffice. The operators of the two co-located consoles should use a headset in this situation. Otherwise, the operators must adjust the channel volume of any channels that could feed back to reduce the possibility of feedback.

The operators should inquire with the system supervisor if feedback is a problem in the installation and, if so, discuss the use of a headset.

Communicating with a Parallel Unit (Intercom)

If there is more than one console in the system and they are not located within audible range of each other, it is possible to communicate with the other console using the intercom feature. The intercom feature allows parallel units to communicate with each other without the need of other equipment and without the need of transmitting over the air.

To communicate with a parallel unit, select the desired channel and press and hold the INTERCOM button located to the right of the numeric keypad. If the intercom is allowed, the status line indicates INTERCOM and the operator is allowed to speak. Like transmission, if a parallel unit is transmitting (indicated by the BUSY indicator), the intercom will not be allowed and an error beep is generated upon pressing the INTERCOM button.

Transmitting on the Selected Channel

To transmit on the selected channel, press and hold the main TRANSMIT button. If the transmission is allowed, meaning no parallel unit is currently transmitting, the status line indicates TRANSMIT when the operator is allowed to speak. In addition, the channel TX indicator lights indicating the transmission is being made. If the console is equipped with the signaling option and the channel has PTT-ID enabled, a PTT-ID is generated when the TRANSMIT button is pressed. Decode of digital signaling still occurs on either a dedicated channel or the selected channel as described in CARD Suite. Consult with your system supervisor regarding information on digital signaling encode/decode.

Transmitting on Any Channel (Instant Tx)

At times, it may be desirable to transmit on one channel while keeping another selected. Further, if during some other mode of operation, the operator needs to transmit on another channel without exiting the current mode of operation, the channel TX button can be used.

If a parallel unit is not currently transmitting when the channel TX button is pressed, the status line indicates the new channel without changing the selected channel, and TRANSMIT is displayed when the operator is allowed to speak. In addition, the channel TX indicator lights indicating the transmission is being made. If the console is equipped with the digital signaling option and the channel has PTT-ID enabled, a PTT-ID is generated when the channel TX button is pressed. Decode of digital signaling still occurs on either a dedicated channel or the selected channel as described in CARD Suite.

When the channel TX button is released, the transmission is stopped and the previously selected channel is once again displayed on the status line of the console display.

Activating an Alert Tone

The console is equipped with an alert tone feature that provides the capability of generating an attention-getting tone prior to a voice transmission. This is useful in gaining the attention of field units that may not typically monitor all radio traffic. This tone alerts those field units to pay particular attention to the following voice transmission.

The CommandPLUS is capable of generating four different alert tones: a CARD Suite programmable alert tone, 1500 Hz/800 Hz high/low at 100 ms, 1500 Hz pulsed at 100 ms and 1004 Hz continuous. To select the particular alert tone that will be generated when the ALERT button is pressed, the operator must press LOCK+1, 2, 3 or 4. Upon doing so, the selected alert tone will be briefly displayed.

To activate an alert tone, press and hold the ALERT button, located to the right of the numeric keypad, for at least two seconds. If permitted, the console initiates a transmission on the selected channel, begins generation of an attention-getting alert tone, and the selected channel TX indicator lights. The status line indicates ALERT during the generation of the alert tone and the alert tone is heard from the select speaker. If the button is pressed for more than two seconds, upon releasing the ALERT button or eight seconds after pressing the button, the console flashes "TALK NOW" at the upper right of the display. It then enters a two-second voice transmission mode where the microphone is active. Press and hold the main TRANSMIT button to extend the voice transmission time, if desired.

Multi PL

Multi-PL is a feature of the console that allows the same radio channel to be used, while providing privacy, for up to four groups. The operator can control which PL is used by the transmitter and receiver using this feature. The operator should inquire with the system supervisor whether Multi-PL is a feature of the system.

If the Multi PL function has been enabled through the CARD Suite software, selecting one of up to four PL codes is possible. When the MULTI PL button is pressed, the current/first available PL appears on the status line of the display and flashes. The display prompts the operator to use the SCROLL buttons to select a PL. When the desired PL has been selected, press the MULTI PL button a second time. If a parallel console is not currently transmitting, the PL is then set on the selected channel and the display returns to normal operation with the new PL indicated on the status line of the display.

If the operator has not set the PL after a console reset, no PL will be displayed on the status line. To have the PL set and displayed, the operator must manually set it.

An error beep is generated and no PL is set if:

- the MULTI PL button is pressed when the Multi-PL feature is not available on the selected channel, or
- a parallel console is transmitting at the time of PL selection.

Frequency Selection

If the base station on the selected channel is capable of transmission on more than one frequency, and more than one frequency has been enabled through the CARD Suite software application, a different frequency other than F1 can be selected using the Frequency window or programmable buttons.

Basic Frequency Operation

If the selected channel has four or fewer frequencies enabled, the four frequency select buttons operate as F1, F2, F3 and F4 and only one of the frequency indicators is lit to indicate the current frequency setting. Depending on the number of frequencies available on a particular channel, some of the frequency buttons may be inactive.

Press the desired frequency button to select a new frequency. If a parallel console is not currently transmitting, the console transmits the new frequency selection to the base station. The indicator of the previously selected frequency is extinguished, and the indicator of the newly selected frequency lights. If the channel is programmed with channel frequency change buttons, the proper indicator will be set on them as well. The alias of the newly selected frequency is displayed on the status line of the display. All subsequent transmissions on this channel are transmitted using the newly selected frequency.

Enhanced Multi-Frequency Operation

If more than four frequencies are enabled on a particular channel, the four buttons in the frequency window operate as SEL, UP, HOME and DOWN. This mode of operation is indicated by the UP and DOWN button-indicators both being lit. In this mode of operation, the frequency must be selected from a list indicated in the display via scrolling using the UP and DOWN buttons. To enter the frequency selection mode, press either the SEL, UP or DOWN button. The SEL indicator flashes and the console enters the frequency selection mode. The channel alias on the status line of the display flashes indicating that a new alias or frequency can be selected using the UP or DOWN buttons.

To return to the previously selected frequency prior to entering frequency selection mode, press the HOME button for less than two seconds. This is useful if entry into the frequency edit mode was accidental and the operator does not wish to change the currently selected frequency. While in frequency selection mode, if no button is pressed for five seconds, the frequency selection mode is automatically exited and a new frequency is not selected.

Once the desired alias is selected, the operator can:

- a. Press the SEL button to select the new frequency, transmit the new frequency to the base station and exit frequency selection mode,
- b. Press the main TRANSMIT button to select the new frequency, transmit the new frequency to the base station, exit frequency selection mode and begin a voice transmission on the newly selected frequency,
- c. Press the MONITOR button to select the new frequency, transmit the new frequency to the base station, exit frequency selection mode and place the base station in monitor mode on the newly selected frequency, or
- d. Press and hold the HOME button for at least two seconds or until the HOME indicator lights to store the frequency as a home or revert frequency. The home frequency can now be recalled and selected quickly outside of the frequency selection mode by simply pressing the HOME button. Each channel can have a home frequency.

If the channel has channel frequency change buttons, the associated indicator will illuminate, assuming the selected frequency is the same as that of the channel frequency change button.

Paging Encode

The CommandPLUS paging option supports the following paging formats and types:

- DTMF
- 2-Tone Sequential
- Plectron
- 5/6 Tone (decimal digital)
- One-Touch Page
- Preprogrammed Alias Page
- Stack Page
- 2805/1500
- Immediate DTMF
- Custom Single/Two Tone
- Immediate DTMF
- Sequential Group Page
- Alert Page

Paging tones may be transmitted on any channel, and programming allows paging characteristics to be set as needed for each individual channel. Also, each type of manual paging may be disabled on a per channel basis.

Paging can be initiated manually by entering digits directly from the numeric keypad, by selecting a preprogrammed alias or by using one-touch paging. The alias feature allows the type of page, the paging digits (capcode), the channel on which to page and other information to be predefined and selected using a user-friendly name rather than manually entering the page information each time. Up to 250 paging aliases can be preprogrammed. The CARD Suite software application is used to program paging characteristics and alias names.

Entering the Paging Mode

Ensure the console is in normal operation and press the PAGE button located on the left side of the key panel. The console enters paging mode. If, however, the channel has no manual paging enabled and no aliases are programmed, paging is restricted on the current channel and an error beep is generated.

Upon initially entering paging mode, the console enters manual paging mode, if enabled on the channel via CARD Suite. If no manual paging is enabled and page aliases are programmed, the console enters alias paging mode. The second line of the console display, the paging line, flashes *PAGING* at the center. The console display provides the proper instructions based on the current paging mode.

Paging Channel versus Selected Channel

Upon entry into paging mode, the console returns to the last paging channel and recalls the last page selection for that channel. If the paging channel is different from the selected channel, the selected channel SEL indicator flashes indicating which channel is the selected channel. The paging channel SEL indicator is solid while in paging mode. It is important to note that upon exiting paging mode, the paging channel returns to an unselected state and the previously selected channel is again selected.

The operator should ensure that the proper channel is selected immediately following a page before making a voice transmission. To reduce the possibility of error, it is recommended for those pages that typically have a voice transmission following them to be programmed as an alias page with a talk-time added.

If manual paging is a requirement, a talk time can be programmed per channel for each type of paging to achieve a similar functionality for manual paging. However, if an alias page is used, the auto-base station select feature can be programmed to ensure that the proper paging channel is always selected.

When a talk time is used for either manual or alias paging, immediately following the generation of the paging tones, the console remains on the paging channel and flashes "TALK NOW" for five to 45 seconds, as programmed. At this point, the microphone is active and a voice transmission can be made to the paged units. The preprogrammed talk time can be extended by pressing and holding the main TRANSMIT or channel TX button.

When the talk time is over, the operator releases the appropriate transmit button or if no talk time has been programmed, the console exits paging mode, and returns to normal operation and selects the previously selected channel. As discussed earlier, the operator should exercise caution when following a page with a voice transmission to ensure that the correct channel is selected.

Manual Paging

Manual paging allows the operator to select the paging channel, the paging type, and the paging digits. To change to manual paging mode from alias paging mode, press the CLEAR or MODE button once.

When in manual paging, the status line displays the channel on which the page is sent. This channel can be changed while in manual paging mode. The console display paging line displays the type of page on the left side of the window and blanks, or the last paged digits, or capcode on the right side.

It is important when using manual paging that the desired paging channel be selected after entering paging mode and prior to selecting the paging type and entering the capcode. The last used paging type is stored for each channel. If the type of page and capcode are entered prior to selecting the paging channel, the page type and capcode will most likely be changed or erased upon selecting the new channel. If this happens, the operator must again select the paging type and reenter the capcode.

To change the type of paging, press the MODE button located on the right of the numeric keypad until the desired paging type is reached. If certain types of paging are not used, they can be disabled via CARD Suite to speed up selection of a particular type of paging. Note that disabling DTMF paging also disables Immediate DTMF paging.

The right side of the paging line displays blanks for the number of digits required from the operator or PRESET CAPCODE if none are required. This is a function of how the paging is programmed for the current paging channel. As digits are entered, the new digit is entered in the far right position and the other digits moved one place to the left. If more digits are entered than are allowed, all current digits are cleared and the new digit is entered. If a wrong digit is entered, it may be desirable to press the CLEAR button to clear all digits and reenter the capcode. It is possible to enter a DTMF A, B, C or D using the LOCK +1, +2, +3 or +4 combination.

Alias Paging

If the console has been programmed with paging aliases, an alias can be selected instead of manually entering the paging type and capcode. To change from manual paging mode to alias paging mode, use the SCROLL Up/Down buttons. The desired alias can be selected using two different methods.

- To scroll through the entire list of aliases, press the SCROLL Up or Down button. The alias list scrolls alphabetically. Use the LOCK + SCROLL Up or Down to scroll in alphabetic groups.
- A quicker method for alias selection is to use the alphanumeric keypad. If a numeric button is pressed, the group of aliases starting with the current alphabetic character located above the button is selected. The number of times the button is pressed determines which alphabetic character is used in the alias lookup. For example, if the console contains aliases beginning with the letters G, H and I, and the desired alias begins with the letter H, press the number 4 button (GHI) twice. The first press selects the first alias beginning with the letter G. The second press selects the first alias beginning with the letter H. If, however, there are no aliases beginning with the letter G, pressing the 4 button once upon entering alias paging mode selects the first alias beginning with the letter H. A second press of the number 4 selects the first alias beginning with the letter I. A third press of the number 4 button returns to the first alias beginning with the letter H. Once you are in the correct alphabetic group, use the SCROLL Up/Down buttons to scroll to the correct alias.

When an alias is selected in alias paging mode, the proper channel and frequency are selected for the alias, if so enabled with CARD Suite. The operator can override the auto-base channel, if desired. However, it is recommended that the console be programmed via CARD Suite to NOT ALLOW overriding of auto-base station selection to remove the possibility of paging an alias on an incorrect channel.

Initiating the Page

When the desired capcode is entered or alias selected, press the MONITOR button, if necessary, to ensure that the radio channel is not in use. When the channel is free, press the main TRANSMIT button. The paging tones can be heard through the select speaker as they are transmitted.

When the paging tones are complete, "TALK NOW" flashes at the upper right of the display if talk time has been programmed for the particular type of paging or alias. While "TALK NOW" is flashing, the microphone is active and voice audio is transmitted over the channel(s) to the paged units. To extend the talk time, press and hold the main TRANSMIT, page TRANSMIT or channel TRANSMIT button.

Additionally, it is possible to initiate an alert tone during the talk time. To activate an alert while "TALK NOW" is flashing, simply press the ALERT button. Upon releasing the alert tone button, the console will again flash "TALK NOW" at the upper right of the display for a minimum of two seconds. During this time, the microphone is active and voice audio is transmitted over the channel(s). To extend the talk time, press and hold the main TRANSMIT, page TRANSMIT or channel TRANSMIT button.

When the talk time is over, the operator releases the TRANSMIT button or if no talk time has been programmed, the console exits paging mode, returns to normal operation and selects the previously selected channel. As discussed earlier, the operator should exercise caution when following a page with a voice transmission to ensure that the correct channel is selected.

Sequential Channel Specific Group Paging

A special type of alias preprogrammed with a sequence of other aliases is called a group page. A group page is configured using CARD Suite and contains a list of alias pages that are sequentially transmitted on the auto-base station channel, as programmed in each alias. This allows for activation of multiple sirens or paging of several emergency services at once. As a group page progresses, each alias in the group is referenced, and the channel and frequency on which it has been preprogrammed to page are selected.

The alias is displayed on the paging line and the paging tones are heard through the select speaker as the page is transmitted. Upon completion of all pages, "TALK NOW" flashes at the upper right of the display if a talk time has been programmed for the group. During this time, the microphone is active and voice audio is transmitted over the channel(s). To extend the talk time, press and hold the main TRANSMIT or TX button on any transmitting channel.

When the talk time is over, the operator releases the appropriate transmit button or if no talk time has been programmed, the console exits paging mode, returns to normal operation, or hot standby paging, and selects the previously selected channel. As discussed earlier, the operator should exercise caution when following a page with a voice transmission to ensure that the correct channel is selected.

Stack Paging

The Stack paging feature provides the operator the capability to create a sequential group page as needed. A stack page can consist of manual pages, alias pages and even group pages. Up to ten individual or group pages can be stacked. A group page counts as one entry in the stack.

To create a stack page, as with manual mode or alias mode paging, select the desired page and paging channel, if applicable. To stack the displayed page, press the LOCK+TRANSMIT key combination. The page is stacked and the paging line now shows *STACK PAGE: 2* indicating that the second page can now be entered and stacked. To continue creating the stack page, repeat this process until the final page is displayed. DO NOT stack the last page by pressing the LOCK+TRANSMIT button.

If a page is stacked in error, press the CLEAR key until the page in question is displayed. Correct the entry as described in manual or alias mode paging and proceed with the creation of the stack page.

Once the final page is entered, but not stacked, press the main TRANSMIT button to begin the transmission of the stacked pages. As the stack page is generated, the proper paging channel is selected and the paging line displays the page being generated and *PAGING X OF Y* where X is the number of the current page being transmitted and Y is the number of pages in the stack. If a group is stacked in the page, as described previously, the individual aliases are displayed as they are transmitted. A group page, however, counts as one entry in the stack.

If any page in the stack has a talk time programmed, the longest talk time is used for the talk time. Upon completion of all pages, "TALK NOW" flashes at the upper right of the display if a talk time has been programmed for any of the transmitted aliases. During this time, the microphone is active and voice audio is transmitted over the channel(s). To extend the talk time, press and hold the main TRANSMIT or the TX button on any transmitting channel.

When the talk time is over, the operator releases the appropriate transmit button or if no talk time has been programmed, the console exits paging mode, returns to normal operation and selects the previously selected channel. As discussed earlier, the operator should exercise caution when following a page with a voice transmission to ensure that the correct channel is selected.

The pages of the stack are kept until the console is reset. Therefore, to repeat a stack page, simply reenter paging and begin stacking the pages. As they are stacked, each page that was stacked previously is displayed as long as no other pages have been transmitted. All that is required is to press the LOCK+TRANSMIT key combination to confirm the stacking of each page. No reselection or reentry of pages is required.

Alert Page

It is possible to send out an individual, group or stack page followed by an alert tone. To generate an alert page, select the page or pages to be transmitted. Press and hold the ALRERT button instead of the TRANSMIT button. The console generates the page(s) and approximately one second after the last page, begins the generation of the alert tone. The alert can be generated for up to eight seconds as long as the alert tone button is held.

Upon releasing the alert tone button or at the end of the alert tone, the console will flash "TALK NOW" at the upper right of the display for a minimum of two seconds. During this time, the microphone is active and voice audio is transmitted over the channel(s). To extend the talk time, press and hold the main TRANSMIT or the TX button on any transmitting channel.

When the operator releases the appropriate transmit button or the two seconds time out, the console exits paging mode, returns to normal operation and selects the previously selected channel. As discussed earlier, the operator should exercise caution when following a page with a voice transmission to ensure that the correct channel is selected.

Intermediate DTMF Paging

Immediate DTMF Paging is slightly different from the other paging formats in that there are no limits on the number of digits that can be transmitted and there are no preset aliases available. To select Immediate DTMF paging, ensure the console is in manual paging mode and that DTMF paging is enabled on the desired channel using CARD Suite. Press the MODE button until IMMED. DTMF is displayed on the paging line.

Pressing a digit causes the channel to begin transmission and to transmit the DTMF digit over the channel. It is possible to enter a DTMF A, B, C or D using the LOCK +1, +2, +3 or +4 combination. The digit can be heard through the select speaker as it is generated. If the console channel is not currently transmitting, there is a slight delay upon pressing the first digit to allow the base station to begin transmission. It is necessary to press and hold the first digit until it is heard from the select speaker. Upon releasing the button, the channel continues to transmit for approximately two seconds to allow additional digits to be entered. The operator can enter more digits or can begin a voice transmission by pressing and holding the TRANSMIT button. To exit immediate DTMF paging, press the PAGE button or select another type of paging using the MODE button.

Manual Paging Enable/Disable

Use the CARD Suite software application to enable or disable each type of paging (such as DTMF/Immediate DTMF, 2-Tone, 5/6 Tone, and 2805/1500) on each channel. If disabled, the paging type does not appear on the display during manual paging as described in the Manual Paging section on page 22 of this manual. Consult with the system supervisor regarding disabling manual paging.

Auto-Base Station Override

Use the CARD Suite software application to enable or disable the auto-base station override. If this option is enabled, while in alias paging mode, the console operator can override the preprogrammed transmit channel for an alias using the channel SELECT buttons. Unless the operator is very familiar with the way the console uses paging channels and selected channels, allowing override of the auto-base station select is not recommended.

If this option is disabled, while in alias paging mode, the console automatically selects the paging channel and the channel SEL buttons are inoperative. This ensures that the proper channel is ALWAYS selected when using an alias to page.

One-Touch Paging

The One-Touch paging feature allows the operator to send a preprogrammed alias page at any time during most modes of operation, with a touch of a button. It is important to realize that this feature is not necessarily associated with the channel on which the button resides. Depending on the programming of the alias through the use of CARD Suite, the page may go out on this channel or another preprogrammed channel depending on the auto-base selection in the alias. The page may also go out on the selected channel even if the button is not on the selected channel. The operator should consult with the system supervisor regarding the auto-selection of paging channels.

It is not possible to execute a one-touch page while selecting a page, a radio-patch, multi-select, frequency or multi-PL. It is possible to do so after the selection is complete.

Exiting Paging Mode

Press the PAGE button again to exit paging mode.

DTMF Decode

DTMF Decode allows the console to accept Automatic Number Identification (ANI) information from radios equipped with DTMF/ANI capabilities or DTMF sequences from other devices. DTMF Decode provides a capability similar to PTT ID. It eliminates the need to use additional airtime to identify the caller by a voice message and provides a means for manually logging system traffic. DTMF Decode also discourages inappropriate use of a radio since management has positive identification of who is on the air at any given time.

If a DTMF sequence is decoded and it meets the DTMF decode parameters as set by the CARD Suite software, the decoded sequence is entered into a first-in-first-out (FIFO) queue that can contain 15 separate entries. The decoded sequence is displayed in the console display and if the sequence matches a preprogrammed DTMF-decode alias, the alias is displayed. Individual entries can be deleted from the queue by first scrolling the queue using the SCROLL Up/Down arrows so that the entry is at the top of the queue and then pressing the LOCK + CLEAR button.

In the console display shown below, there are ten entries currently in the queue indicated by the 10 after the 4, 5, 6 and 7. The 4th entry is an entry that did not have a DTMF-decode alias programmed in the console. The 5th, 6th, and 7th entries each had a DTMF-decode alias programmed in the console. As shown below, the operator has scrolled down through the queue. There are three more entries above the console display shown below and three more entries below. If the operator were to press the LOCK + CLEAR button, the 4th entry, ID 189300, would be permanently deleted from the queue. Entries 5 through 10 would then move up one position to become entries 4 through 9.

CHANNEL 1/1	PL-A	CODED	
RECEIVE			
4/10	ID 189300	DTMF 189300	11:04A
5/10	SGT. BARNES	DTMF 189299	11:04A
6/10	SHERIFF KOCHER	DTMF 190001	11:04A
7/10	CALLBOX 101	DTMF 700101	11:04A
12:22:19PM	VU		MAY-12-07

Console Display showing DTMF Decode Example

In addition to providing the DTMF decode information in the console display, the DTMF decode sequence is also logged to the printer port of the CommandPLUS. If desired, this information can be printed on a serial printer for a printed record or can be captured by a PC through the use of a serial port and a program such as HyperTerminal, a standard Windows® program. If captured by HyperTerminal, the data can be saved to a network location or printed as desired.

Multi-Select

The Multi-Select option allows for simultaneous transmission on a set of channels when the multi-select mode is chosen. This can be used when the operator wishes to simultaneously communicate with several different channels.

Using Multi-Select

When either the MULTISELECT 1 or MULTISELECT 2 is pressed, the MULTISELECT indicator flashes indicating that channels can now be added or removed from the multi-selection and the console changes to multi-select mode. Channels can be added or removed by pressing a channel SEL button. When a channel is added to the multi-selection, the current frequency, F1, F2, etc. is used. If a multi-selection was previously stored, the stored channels are displayed. When a multi-selection is recalled, the frequency on which the channel was added and previously stored is also recalled.

When the desired channels have been selected, press the main TRANSMIT button to begin transmission on the selected channels. Upon transmitting, the MULTISELECT indicator lights steadily indicating that the selection can no longer be edited.

To exit multi-select without storing changes, press the appropriate MULTISELECT button. To store changes, use the LOCK + MULTISELECT key combination. Upon exiting, the MULTISELECT LED is extinguished and the console returns to the normal operation. The last selected channel before multi-select was initiated is now displayed.

Signaling in Multi-Select

If the console is equipped with the signaling option, PTT-ID's are generated on all channels of the multi-select in which PTT-ID's have been enabled when a transmission is initiated. Additionally, the use of a channel TX button on any channel that has PTT-ID enabled causes a PTT-ID to be generated. Decode of digital signaling still occurs on either a dedicated channel or the selected channel as described in CARD Suite. Consult with the system supervisor regarding the encode/decode of digital signaling.

Multi-Select Alert

After the multi-select has been selected, it is possible to generate an attention-getting alert tone to all the selected channels by pressing the ALERT button. When the operator presses the ALERT button, an alert tone is generated as described previously. When the alert tone is complete, the operator can use the TRANSMIT button to transmit to all selected channels.

Operations of Channel Transmit during Multi-Select Mode

One restriction applies to the use of the channel TX button, as well as many of the programmable button functions, while in multi-select mode. While selecting the multi-select, indicated by the flashing multi-select indicator, the use of the channel TX button is prohibited. This is necessary since the selection of a multi-select uses previously configured channel settings that may include different frequency and secure mode settings. If the channel TX button were used in multi-select edit mode, the operator may intend to transmit on one channel/frequency while they may, in fact, transmit on a different frequency than desired. After the first multi-select transmit, however, the channel TX buttons can be used.

Positive Mode Control/Secure Operation

The CommandPLUS supports positive mode control for controlling a secure-equipped base station. The operator must control the secure mode of the console by selecting a coded or clear transmission type. The actual encryption and decryption of audio is a function of the base station and not the console. The console simply controls the feature.

Using Positive Mode Control

When the CODED button, located on the right side of the keyboard, is pressed, the CODED indicator lights to indicate that transmit audio from the selected channel should be encrypted by the transmitter. The status line of the console display also displays CODED to indicate that the selected channel is now in coded mode. The selected channel remains in this mode until the CLEAR button is pressed.

When the CLEAR button is pressed, the CODED indicator is extinguished and the CLEAR indicator lights to indicate that transmit audio from the selected channel should no longer be encrypted by the transmitter. The status line of the console display also displays CLEAR to indicate that the selected channel is now in clear mode.

Coded Reception Indicator

The CODED and CLEAR on the status line of the console display always indicate the secure state of the selected channel and whether or not transmissions are to be encrypted by the transmitter. The CODED indicator, however, serves two purposes.

If a channel is secure capable, either the CODED or CLEAR indicator is lit steadily. However, if the console is properly configured and installed, the CODED indicator provides the secure status of the last received audio on a secure channel. If the CODED indicator is flashing when a channel is selected, it indicates that the last received audio on that channel was encrypted and the operator should set the transmit secure status to the proper setting. This received transmission status is latched whether the channel is selected or not.

To ensure that the operator selects the proper secure state for transmissions in response to a potentially encrypted reception, the operator should always select a secure channel prior to transmitting to determine the secure status of the last reception. Using the channel TX button does not provide the necessary information to the operator prior to responding.

Secure Operation in Multi-Select

Secure operation is available while in multi-select mode. If all channels in the multi-selection are secure capable, the status line and CODED/CLEAR indicators indicate either coded or clear mode. The operator can select coded or clear transmission while either the coded or clear mode is indicated.

If, however, any one channel in the selection is not secure capable, neither coded nor clear are indicated. When this is the case, the operator can not select coded or clear transmission and all secure capable channels are switched to clear transmission mode. The secure channels in the selection, however, retain their prior clear/coded settings when multi-select is exited.

DC Remote Control CP0010/XCP0010

DC Control uses a different method to control the base station, which does not provide the functionality of a tone remote system. Therefore, certain features behave differently or cannot be used on a channel using dc remote control. Consult with the system supervisor to understand what features are available on each channel.

Buttons Not Applicable to DC Control

If the selected channel uses dc remote control, some features are not available. These features include secure operation and MULTI PL. If the operator attempts to activate any of these features, an error beep is generated.

Frequency Buttons with DC Control

The frequency buttons, F1, F2, F3 and F4 are used to change the PTT current for the selected channel. DC channels do not support more than four different transmission channels. Therefore, multi-frequency is not compatible with dc operation.

Monitor Button with DC Control

The MONITOR button behaves differently on a dc remote control channel than that of a tone remote control channel. On a dc remote control channel, the monitor function is not latched; and therefore, the operator must press and hold the MONITOR button. While the MONITOR button is depressed, MONITOR is displayed on the right side of the console display status line. When the button is released, RECEIVE is displayed on the right side of the console display status line. The channel and base station are no longer in monitor mode after the release of the MONITOR button.

E&M Signaling CP0040/XCP0040

The E&M Signaling option is used to control E&M signaling stations. This type of control offers fewer features than either tone remote or dc remote control. Consult with the system supervisor to understand what features are available on each channel.

Buttons Not Applicable to E&M Control

If the selected channel is operating with E&M Control, several features are not available. These features include the wildcard buttons, frequency buttons, monitor, secure operation and MULTI-PL. If the operator attempts to activate any of these features, an error beep is generated.

E&M with Tone Remote Control

The E&M Signaling option supports E&M with tone remote control that allows the features of tone remote control to be transmitted using one radio to a receiving radio that controls the actual base station. In this type of control, the operator may notice that there is a longer time before TRANSMIT is displayed on the status line when the operator is allowed to make a transmission. The operator should be aware of this added delay in transmitting to prevent the possibility clipping the first syllable of a word when initiating a voice transmission.

Supervisory Control CP0050/XCP0050

The Supervisory Control option gives a designated operator the ability to physically disconnect the transmit audio lines from one or more parallel-connected console channels with the touch of a single button. This is used to lock out any parallel consoles from transmitting on a specific channel or group of channels.

Activating Supervisor Control

To activate or deactivate supervisor control for a selected channel, press the SUPV button for less than one second. When the SUPV button is pressed, supervisor control is activated for the selected channel. The SUPV indicator lights steadily to indicate that the selected channel has supervisor control activated.

To activate or deactivate supervisor control for any channel with a channel supervisor button, simply press and release the channel supervisor button. If activated, the channel supervisor indicator will light. If the channel is the selected channel, the SUPV indicator will light as well.

While supervisor control is activated for the selected channel, the right side of the status line in the console display indicates SUPERVISOR. To deactivate supervisor control for the selected channel, press the SUPV button a second time for less than one second, or press the channel supervisor button on the select channel, if available.

The SUPV indicator indicates the state of the console's supervisor option while in normal operation. If the SUPV indicator is lit steadily, it indicates that parallel consoles are not allowed to transmit on the selected channel. Other channels can also have supervisor control activated as well. If the SUPV indicator is flashing, it indicates that the selected channel does not have supervisor control activated, but another channel does have supervisor activated.

To deactivate supervisor control on all channels without having to select each channel in turn, press and hold the SUPV button for more than one second. This deactivates supervisor control on all channels removing the need to manually select each channel and deactivate supervisor control for each.

Supervisory Control Using Multi-Select

Upon entering the multi-select mode, any channels that currently have supervisor control activated are highlighted on the console display.

If the SUPV button is pressed while in multi-select mode and multi-select supervisor is deactivated, all channels in the selection that have been programmed using CARD Suite software to have supervisor control enabled are highlighted on the console display. When supervisor control is deactivated while in multi-select mode, all channels in the selection that did not have supervisor control activated prior to entering multi-select have supervisor control deactivated. Note that global deactivation is not available while in multi-select mode.

If the operator activates/deactivates supervisor on a channel using its channel supervisor button while in multi-select, the channel supervisor button indicator will indicate the supervisor state of the channel outside of multi-select regardless of the multi-select supervisor state.

Direct Enhanced Full Duplex Phone Interface CP0070/XCP0070

The Direct Enhanced Full Duplex Phone Interface option allows the operator to use the CommandPLUS to place and receive calls from the public switch telephone network, PSTN, or a private branch exchange, PBX. This option supports full duplex phone conversation when used with a headset or handset. Also included with this interface are the phone patch and radio patch options.

Using the Direct Phone Interface

To place an outgoing phone call, from normal operation press the DIAL/ANS button. This takes the phone off-hook. The second line of the console display flashes “*DIALING*” and “PHONE IN USE” in the lower right corner. Audio from the phone is directed to the select speaker while the phone is in use. Audio from the selected channel is directed to the unselect speaker and the selected channel's SEL indicator flashes to indicate the selected channel audio is no longer routed to the select speaker.

The numeric pad can now be used to dial the desired number. The number entered is displayed on the right side of the second line as it is entered. If an error is made in dialing, hang up using the DIAL/ANS button, and then begin again.

The full-duplex nature of the phone audio path is controlled dynamically and is dictated by the type of microphone being used by the operator. If the phone is off-hook and the operator is using a headset or handset, the audio path between the operator and the phone is full-duplex and the operator and phone caller can converse as with a normal telephone. The operator can transmit on the selected channel by using the main TRANSMIT button, the headset or the handset PTT. The operator will continue to hear the phone caller's voice during transmission, but the phone caller will not hear the console operator's voice. This type of operation would normally be used to dispatch a police officer to the location of the phone caller in the event of an emergency. The console operator can also use the channel TX buttons to transmit on a channel other than the selected channel.

If the operator is using the gooseneck or internal microphone or has activated the select speaker off-hook override or phone patch, the audio path between the operator and the phone is forced to half-duplex to remove the possibility of feedback between the microphone and speaker. The operator can use the TRANSMIT button, the headset or handset PTT to talk to the phone caller when half-duplex mode is active. The operator must use the channel TX button to transmit on any channel. While transmitting on a console channel, the console operator's voice audio is not heard by the phone caller, but the operator will continue to hear the phone caller's voice. To mute the phone caller's voice, press the TEL HOLD button. When on hold, PHONE ON HOLD is displayed on the lower right-hand of the console display.

While the phone is in use, certain modes of operation may be restricted. Placing the caller on hold using the TEL HOLD button will allow all console functions to be accessible and the console will operate as if the phone were not in use. While the caller is on hold, "PHONE ON HOLD" is displayed at the lower right-hand of the console display. To take the caller off hold, press the TEL HOLD button again. To disconnect the caller, press the DIAL/ANS button at any time.

Auto-Dial and Last Number Redial

Auto-dial numbers can be programmed using the CARD Software application. These numbers can be used when dialing the phone by first taking the phone off-hook and pressing the SCROLL Up or Down buttons to select the desired auto-dial alias. When the desired alias is displayed, press the TRANSMIT button to automatically dial the associated number.

When the phone is taken off-hook later, the last number dialed is displayed. The displayed number can be dialed again by pressing the TRANSMIT button. The number may be cleared by initiating a new number with the numeric keypad or by pressing the CLEAR button.

Answering Incoming Calls

When an incoming call is detected, an audible ring will be heard through the select speaker and PHONE RINGING is displayed at the lower right-hand side of the console display. To answer an incoming call, press the DIAL/ANS button. The display now shows PHONE IN USE at the lower right-hand side. At this point, the call proceeds and behaves as described in the Using the Direct Phone Interface section on page 34.

Phone Patch

Phone Patch allows the phone caller to be connected to a channel for voice communication between the two. The operator is able to monitor both phone and radio audio. A phone patch may be either an inbound phone caller requesting a radio channel, or a radio channel requesting a phone line.

To activate a phone patch, press the TELEPHONE PATCH button. When the TELEPHONE PATCH button is pressed, the phone caller is placed on hold and the TELEPHONE PATCH indicator begins to flash. The flashing TELEPHONE PATCH indicator signals the operator to select the radio channel for the phone patch. At this point the TRANSMIT button allows voice transmission on the selected phone patch channel. Once the operator has contacted the field unit to relay that a phone patch is being established, the operator must take the phone off hold by pressing the TEL HOLD button.

At this point the TELEPHONE PATCH indicator lights steadily and the phone patch is established. Since the patch is based on voice detection on the radio channel and phone, the phone audio is forced to half-duplex mode. The operator should now announce to the phone caller and the field unit that the patch is established using the TRANSMIT button. The phone caller and field unit can have a half-duplex, one-at-a-time, conversation. At anytime during the phone patch, the console operator can communicate with both the phone caller and the field unit by pressing and holding the TRANSMIT button. The console operator may also communicate with the field unit without the knowledge of the phone caller by using the channel TX button on the phone patch channel.

To pause the phone patch without terminating it, the operator can put the phone caller on hold. Placing the phone caller on hold during a phone patch maintains the patch, but allows the console operator to conduct other business or have a conversation with the field unit without interference from the phone caller. Removing the phone caller from hold continues the patch as described earlier.

The phone patch can be terminated by either pressing the DIAL/ANS button or by pressing the TELEPHONE PATCH button.

External Enhanced Full Duplex Phone Interface CP0060/XCP0060

The External Enhanced Full Duplex Phone Interface option allows the operator to use the CommandPLUS to place and receive calls with an external phone. This option supports full duplex phone conversation when used with a headset or handset. Also included with this interface are the phone patch and radio patch options.

Using the External Phone Interface

If the external phone activates the off-hook request while the console is in the normal operation, the console immediately switches to phone mode, and the bottom line of the display shows "PHONE IN USE" on the right side. If the console is not in normal operation mode (radio patch, multi-select, page, etc.), or any key is pressed on the console when the off-hook request is activated, the phone cannot be used and "PHONE REQUEST" is displayed on the bottom line of the display. Once the console returns to normal mode or the key is released, the console immediately switches to phone mode.

The full-duplex nature of the phone audio path is controlled dynamically and is dictated by the type of microphone being used by the operator. If the phone is off-hook and the operator is using a headset or handset, the audio path between the operator and the phone is full-duplex and the operator and phone caller can converse as with a normal telephone. The operator can transmit on the selected channel by using the main TRANSMIT button, the headset or the handset PTT. The operator continues to hear the phone caller's voice during transmission, but the phone caller does not hear the console operator's voice. This type of operation would normally be used to dispatch a police officer to the location of the phone caller in the event of an emergency. The console operator can also use the channel TX buttons to transmit on a channel other than the selected channel.

If the operator is using the gooseneck or internal microphone or has activated the select speaker off-hook override or phone patch, the audio path between the operator and the phone is forced to half-duplex. This removes the possibility of feedback between the microphone and the speaker. The operator must use the TRANSMIT button, the headset or handset PTT to talk to the phone when half-duplex mode is active. The operator must use the channel TX button to transmit on any channel. While transmitting on a console channel, the console operator's voice audio is not heard by the phone caller, but the operator continues to hear the phone caller's voice. To mute the phone caller's voice, the call must be placed on hold with the external phone.

While the phone is in use, certain modes of operation may be restricted. Placing the caller on hold using the TEL HOLD button will allow all console functions to be accessible and the console will operate as if the phone were not in use.

Phone Patch with External Phone Interface

Phone patch operation is available with the external phone interface and operates as described in the Direct Enhanced Full Duplex Phone Interface section of this manual.

Radio Patch

Radio patch is part of the Direct Enhanced Full Duplex Phone Interface and the External Enhanced Full Duplex Phone Interface options. It allows any number of console channels to be connected to allow one group to talk to other groups through the console. The console uses voice detection to determine which channel transmits to the others at any given time. Further, there is a delay after voice detection ceases on a channel before the transmission is ceased on the other channels to allow for pauses in normal speech. When a radio patch is active, other modes of operation such as paging, multi-select and use of the phone are prohibited.

Using Radio Patch

When the RADIO PATCH button is pressed, the RADIO PATCH indicator flashes red indicating that the selection can now be edited and the display screen changes to the Radio-Patch screen. If a patch had been previously saved using the LOCK + RADIO PATCH key combination, the channels of the saved patch will be selected. Otherwise, no channels will be selected. Channels may now be added or removed by pressing a channel SELECT button. When a channel is added to the patch selection, the current frequency F1, F2, etc., is used. If a channel utilizes a channel frequency change programmable button, the feature may be used during the selection process to alter the channel frequency used during the radio patch. Upon exiting radio patch, all channels will revert to the frequency on which they were prior to entering radio patch.

When the desired channels have been selected, press the main TRANSMIT button to establish the patch and begin transmission on the selected channels. The operator may then announce to the patch channels that the patch has been established. Upon transmitting, the border indicator of the RADIO PATCH button turns red indicating that the selection can no longer be edited.

By using the main TRANSMIT button, the console operator is able to simulcast to all parties at any time during the radio patch. This is similar to the multi-select feature. To talk to any channel individually, including the radio patch channels, the channel TRANSMIT buttons must be used.

To exit radio patch without saving the current selection, press the RADIO PATCH button. To exit radio patch and save the current selection for future use, press the LOCK + RADIO PATCH key combination. Upon exiting, all channels will revert to their prior frequency, the RADIO PATCH indicator is extinguished and the information window returns to the normal format. The last selected channel before radio patch was initiated is now displayed.

Signaling in Radio Patch

If any channel of the patch has PTT-ID enabled and the console is equipped with the signaling option, PTT-ID's are generated on those patch channels when the TRANSMIT button is pressed. Additionally, the use of a channel TX button on any channel that has PTT-ID enabled causes a PTT-ID to be generated. Decode of digital signaling still occurs on either a dedicated channel or the selected channel as described in CARD Suite. Consult with the system supervisor regarding encode/decode of digital signaling.

Radio Patch Alert

After the radio patch channels have been selected, it is possible to generate an attention-getting alert tone to all patch channels by pressing the ALERT TONE button. When the operator presses the ALERT TONE button, an alert tone is generated as described previously. When the alert tone is complete, the operator can use the TRANSMIT button to simulcast to all patch channels.

MDC1200 STAT-ALERT Signaling CP0650/TDN9413A

General Descriptions

Buttons used for RapidCall signaling are grouped at the bottom left of the console's front panel. These buttons are pressed prior to transmission of RapidCall and allow the user to enter information necessary to generate signaling.

RapidCall buttons on the CommandPLUS console are RADIO CHECK, CALL ALERT, RADIO DISABLE, RADIO ENABLE, and SELECTIVE CALL. Refer to Figure 2 below.

RADIO CHECK allows the console operator to determine if a mobile radio is operational or within range. The mobile radio returns an acknowledgement that it received the Radio Check.

CALL ALERT and Short Call Alert are used to alert mobile operators away from their vehicles to call the console operator. When a mobile radio receives a Call Alert, it will generate alert tones until the mobile operator manually shuts them off or transmits.

The RADIO DISABLE button prevents radio use should a mobile radio be lost or stolen. An appropriately equipped mobile radio that receives a Radio Disable message (specifically directed to that radio) will become inoperative. RADIO ENABLE re-enables a disabled mobile radio.

SELECTIVE CALL allows an individual ID or group to be called without disturbing other units. Selective Call is essentially a RapidCall paging feature. The receiving mobile will generate alert beeps prior to unmuting its speaker.

RapidCall signaling may be transmitted on a selected channel or on a CARD Suite-assigned channel.

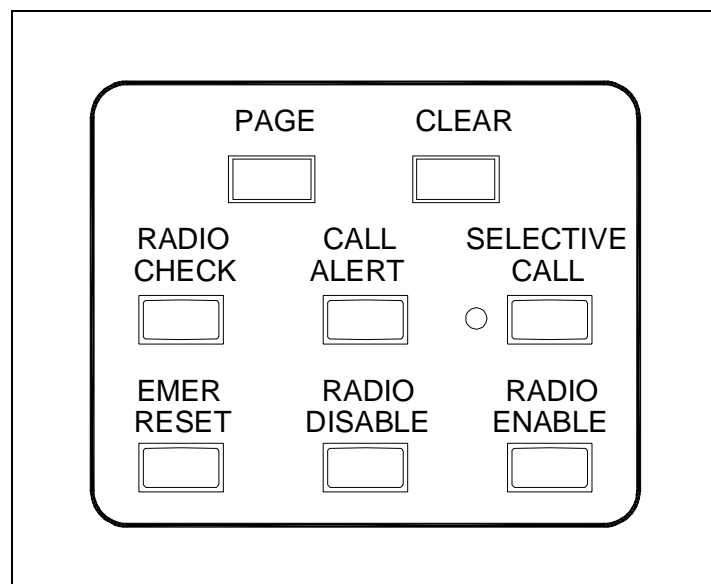


Figure 2. RapidCall Buttons

RapidCall Buttons

Radio Check

When the RADIO CHECK button is pressed, the second line of the display flashes “Radio Check.” The right side of this display line shows either the most recently received ID in the queue or “Unit _ _ _ _” (or the last ID used, if the last RapidCall was a Radio Check.) Refer to Figure 3. Selecting a unit ID for transmission is accomplished in one of the three ways:

- **Instant Send** – If a valid unit ID or alias name is shown on the second line of the display, the TRANSMIT button may be pressed to immediately send the Radio Check to this ID.
- **Manual Entry** – A specific mobile unit ID can be entered using the numeric keypad. The ID entered will be displayed on the second line of the display screen. In case a mistake is made during digit entry, the CLEAR button (located to the upper right of the RADIO CHECK button) can be pressed and another attempt made. When the correct ID is entered, the TRANSMIT button is pressed to send the Radio Check.
- **Alias List Entry** – A pre-programmed alias can be selected by using the SCROLL Up/Down buttons. When the desired alias is shown, the TRANSMIT button is pressed to send the Radio Check.

After pressing the TRANSMIT button, the display shows “WAIT.” If a radio response is received, the display screen reads “ACKNOWLEDGED.” If an acknowledgement is not received, the display shows “RETRY #1” and a Radio Check is automatically resent. Radio Check is sent up to a maximum of five times (the initial check, plus four retries). If no response has been received after the fifth attempt, the display screen shows “NOT ACKNOWLEDGED.”

The “ACKNOWLEDGED” or “NOT ACKNOWLEDGED” message will remain on the screen until the CLEAR button is pressed or until the next incoming message is received. At any time during the Radio Check mode, the operator may exit by pressing the RADIO CHECK button, then the CLEAR button to return to normal console screen display.

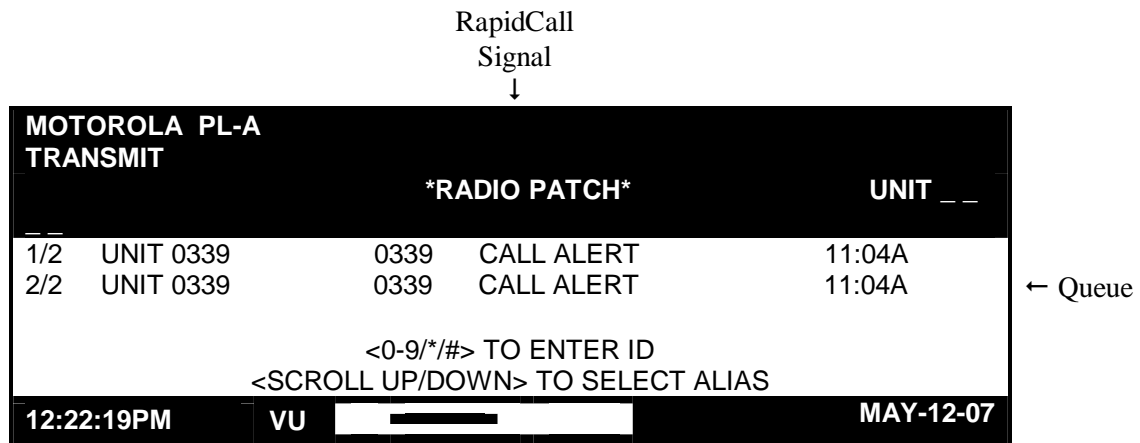


Figure 3. Radio Check Display

Call Alert

When the CALL ALERT button is pressed, the second line of the display flashes “*CALL ALERT*.” The right side of this display line shows either the most recently received ID in the queue or “UNIT _ _ _ _” (or the last ID used, if the last RapidCall was a Call Alert). Refer to Figure 4. Selecting a unit ID for transmission is accomplished in one of three ways. Refer to RapidCall Buttons section on page 39 for a description of how to select unit IDs.

After selecting the unit ID, the TRANSMIT button is pressed to send the Call Alert. After pressing the TRANSMIT button, the display shows “WAIT.” If a radio response is received, the display screen reads “ACKNOWLEDGED.” If an acknowledgement is not received, the display shows “RETRY #1” and a Call Alert is automatically resent. Call Alert is sent up to a maximum of five times (the initial check, plus four retries). If no response has been received after the fifth attempt, the display screen shows “NOT ACKNOWLEDGED.”

The “ACKNOWLEDGED” or “NOT ACKNOWLEDGED” message will remain on the screen until the CLEAR button is pressed or until the next incoming message is received. At any time during the Call Alert mode, the operator may exit by pressing the CALL ALERT button, then the CLEAR button to return to normal console screen display.

MOTOROLA PL-A TRANSMIT		*CALL ALERT*		UNIT _ _ _ _
1/2	UNIT 0339	0339	CALL ALERT	11:04A
2/2	UNIT 0339	0339	CALL ALERT	11:04A
<0-9/*/#> TO ENTER ID <SCROLL UP/DOWN> TO SELECT ALIAS				
12:22:19PM	VU			MAY-12-07

Figure 4. Call Alert Display

Short Call Alert

For transmitting to older radio systems, a Short Call Alert may be used. A Short Call Alert is made by pressing both the LOCK and CALL ALERT buttons simultaneously. The second line of the display will flash “*CALL ALERT-S*.” Follow the above procedure in Call Alert for selecting a unit ID and sending.

Radio Disable

Radio Disable is activated by pressing the RADIO DISABLE and LOCK buttons simultaneously (if the Radio Disable button is pressed alone, an error beep will be heard). The second line of the display flashes “*RADIO DISABLE*.” The right side of this display line shows either the most recently received ID in the queue or “UNIT _ _ _ _” depending on how the console has been programmed). Refer to Figure 5. Selecting a unit ID for transmission is accomplished in one of three ways. Refer to RapidCall Buttons section on page 39 for a description of how to select unit IDs.

After selecting a unit ID, the TRANSMIT button is pressed to send the Radio Disable. After pressing the TRANSMIT button, the display shows “WAIT.” If a radio response is received, the display screen reads “ACKNOWLEDGED.” If an acknowledgement is not received, the display shows “RETRY #1” and a Radio Disable is automatically resent.

MOTOROLA PL-A		*RADIO DISABLE*		UNIT _ _
TRANSMIT				
1/2	UNIT 0339	0339	CALL ALERT	11:04A
2/2	UNIT 0339	0339	CALL ALERT	11:04A
<0-9*/#> TO ENTER ID <SCROLL UP/DOWN> TO SELECT ALIAS				
12:22:19PM	VU			MAY-12-07

Figure 5. Radio Disable Display

Radio Disable is sent up to a maximum of five times (the initial check, plus four retries). If no response has been received after the fifth attempt, the display screen shows “NOT ACKNOWLEDGED” and the console returns to normal operation.

The “ACKNOWLEDGED” or “NOT ACKNOWLEDGED” message will remain on the screen until the CLEAR button is pressed or until the next incoming message is received. At any time during the Radio Disable mode, the operator may exit by pressing the RADIO DISABLE button, then the CLEAR button to return to normal console screen display.

Radio Enable

Radio Enable is activated by pressing the LOCK and RADIO ENABLE buttons simultaneously (if the RADIO ENABLE button is pressed alone, an error beep will be heard). The second line of the display flashes “*RADIO ENABLE*.” The right side of this display line shows either the most recently received ID in the queue or “UNIT _ _ _ _” (depending on how the console has been programmed.). Refer to Figure 6. Selecting a unit ID for transmission is accomplished in one of three ways. Refer to RapidCall Buttons section on page 39 for a description of how to select unit IDs.

MOTOROLA PL-A		*RADIO ENABLE*		UNIT _ _
TRANSMIT				
1/2	UNIT 0339	0339	CALL ALERT	11:04A
2/2	UNIT 0339	0339	CALL ALERT	11:04A
<0-9/*/#> TO ENTER ID <SCROLL UP/DOWN> TO SELECT ALIAS				
12:22:19PM	VU			MAY-12-07

Figure 6. Radio Enable

After selecting a unit ID, the TRANSMIT button is pressed to send the Radio Enable. After pressing the TRANSMIT button, the display shows “WAIT.” If a radio response is received, the display screen reads “ACKNOWLEDGED.” If an acknowledgement is not received, the display shows “RETRY #1” and a Radio Enable is automatically resent. Radio Enable is sent up to a maximum of five times (the initial check, plus four retries). If no response has been received after the fifth attempt, the display screen shows “NOT ACKNOWLEDGED” and the console returns to normal operation.

The “ACKNOWLEDGED” or “NOT ACKNOWLEDGED” message will remain on the screen until the CLEAR button is pressed or until the next incoming message is received. At any time during the Radio Enable mode, the operator may exit by pressing the RADIO ENABLE button, then the CLEAR button to return to normal console screen display.

Selective Call

When the SELECTIVE CALL button is pressed, the second line of the display flashes “*SELECT CALL*.” The red LED associated with Selective Call will light and remain lit during Select Call. The right side of this display line shows either the most recently received ID in the queue or “UNIT _ _ _ _” (or the last ID used, if the last RapidCall was a Selective Call). Refer to Figure 7. Selecting a unit ID for transmission is accomplished in one of three ways. Refer to RapidCall Buttons section on page 39 for a description of how to select unit IDs.

After selecting the unit ID(s), the TRANSMIT button is pressed to send the Selective Call. After pressing the TRANSMIT button, the display shows “WAIT.” When the display says “TALK NOW”, the operator may begin the audio message. If the console is programmed to manual Selective Call, the console returns to normal operation when the TRANSMIT button is released.

When Automatic Select Call is enabled in CARD Suite, repeated transmissions to the same unit do not require re-entering the unit ID. Select a unit ID and press TRANSMIT as above. When the TRANSMIT button is released, the Selective Call LED will flash. A transmission can be made to the same ID by pressing the TRANSMIT button again. When the console is programmed to operate in automatic selective call mode, Selective Call cannot be exited unless done so manually. This may be done by pressing the SELECTIVE CALL button a second time. To transmit to another unit ID, Select Call will have to be exited, then re-entered.

At any time during the Selective Call mode, the operator may exit by pressing the SELECTIVE CALL button a second time.

MOTOROLA PL-A		*SELECT CALL*		UNIT _ _ _ _
TRANSMIT				
1/2	UNIT 0339	0339	CALL ALERT	11:04A
2/2	UNIT 0339	0339	CALL ALERT	11:04A
<0-9/*/#> TO ENTER ID <SCROLL UP/DOWN> TO SELECT ALIAS				
12:22:19PM	VU			MAY-12-07

Figure 7. Select Call

Receiving RapidCall Transmissions

PTT

When a call is received, the queue position, caller's alias name, unit ID and call time are displayed on the screen. A maximum of 15 RapidCall entries can be stored in memory (Emergency Alerts will take precedence over all other transmissions when stored in memory). To scroll through the queue, use the SCROLL Up/Down buttons. To remove PTTs from the queue, press the LOCK and CLEAR buttons simultaneously. Pressing LOCK and CLEAR will clear all queue line items *except* Emergency Alerts. Queue line items are removed on a first in – first out basis.

Emergency Alert

When an Emergency Alert is received and the console is programmed to acknowledge emergency calls, an acknowledgement is automatically sent back to the transmitting unit, disabling the alert. The console will flash the alias name, unit ID and "EMERGENCY." An alert tone will also be generated.

Pressing the EMER RESET button will silence the alert tone and the display will stop flashing. To clear the Emergency Alert from memory press the LOCK and EMER RESET buttons simultaneously.

An Emergency Alert will take precedence over all other alerts or calls. Calls received during an Emergency Alert will be stacked in the queue. If two or more Emergency Alerts are received, each successive alert will be placed at the top of the queue. When the EMER RESET button is pressed, the Emergency Alert at the top of the queue will be cleared and placed below any other flashing Emergency Alerts. When the EMER RESET button is pressed for the next Emergency Alert at the top of the queue, it will be cleared and placed below any other flashing Emergency Alerts, and so on.

Call Alert

When a Call Alert is received, the display will flash "CALL ALERT." The queue position, the transmitting unit's alias name, unit ID and the call time will also be displayed, but not flash. A series of four alert tones, every 10 seconds, will sound until any button is pressed.

Ensuing messages will be stacked while the Call Alert is displayed, except an Emergency Alert, which will override a Call Alert. If a Call Alert is received during an Emergency Alert, the Call Alert will be stacked in the queue. When all Emergency Alert(s) have been cleared, the Call Alert tone will continue to sound to remind you that it is in the queue. As soon as any button is pressed, however, the alert tone will stop.

Short Call Alert

When receiving a Short Call Alert, the display screen will be similar to the Call Alert screen above except, the screen will not read "Unit XXXX" and next to that, where an ID is usually seen, the screen will read "SHORT."

Selective Call

When a Selective Call is received, two alert beeps will be heard once. The display will read "SLCT CALL" and the queue position, transmitting units alias name and unit ID will be displayed.

Entering the Diagnostic Mode

The CommandPLUS Series Console contains several internal diagnostics designed to assist in the installation and servicing of the unit. The opening menu for these diagnostics is accessed by pressing the LOCK + MODE key combination.

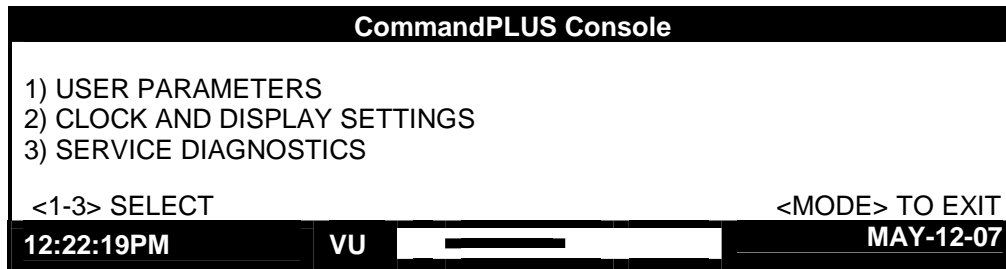


Figure 8. Console Diagnostic Menu

To restrict access to certain features in the diagnostic mode, the security level under service diagnostics can be used. Each of the selections from the opening menu links to another menu that lists settings or other diagnostic and installation aids.

- Press 1 to advance to the User Parameters menu. This menu is used to set certain operational characteristics of the console. If the security level is set to 1 or high, entry of the service password will be required.
- Press 2 to advance to the Clock and Display Settings menu. This menu is used to set the time and date and to adjust the brightness and contrast of the console display. If the security level is set to 2 or moderate or higher, entry of the service password is required.
- Press 3 to advance to the Service Diagnostics menu option. This menu allows access to the internal diagnostics and to set wire line transmission and receive levels. If the security level is set to 3 or low or higher, entry of the service password is required.
- Press the MODE button to exit the current menu and return to the previous menu or normal console display.

User Parameters Menu

The User Parameters menu is shown below.

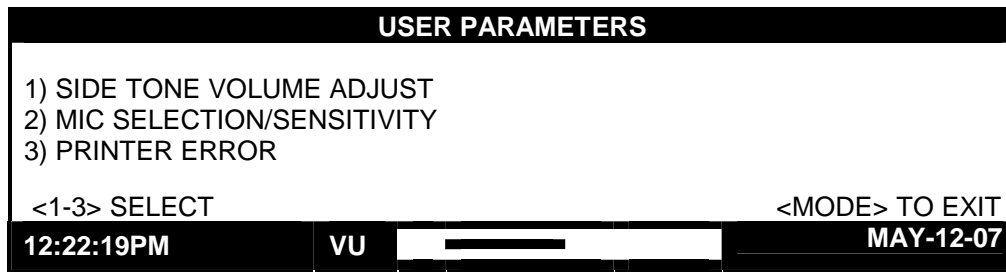


Figure 9. User Parameter Menu

Side Tone Volume Adjust

Side tone is the tone as heard by the operator during tone generation. There are several tones generated by the console that can be lowered when using a headset to reduce ear fatigue. These tones include error beeps, paging tones, alert tones and talk-prohibit tones.

When the operator elects to adjust the side tone volume, the console displays the current volume and the instructions on the display as shown below. To adjust the side tone volume use the **SCROLL** Up/Down buttons. A beep is generated as the volume is adjusted to allow the volume to be set to a comfortable level. When the level is correct, press the **MODE** key to exit.

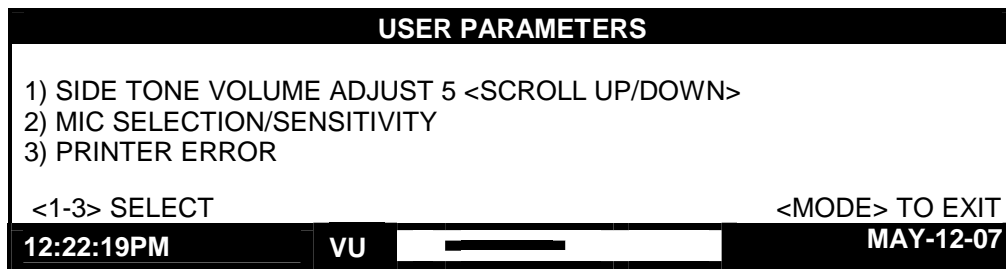


Figure 10. Side Tone Volume Adjust

Microphone Selection and Sensitivity

There are three available microphone ports available on the CommandPLUS. These are the internal port, desk/handset/headset port, and the gooseneck port. By default, the console is shipped with the internal port selected. If a gooseneck microphone is to be used, it must be selected from this menu and the proper sensitivity set.

When the operator elects to change the microphone or the microphone sensitivity, the console displays the current microphone setting and sensitivity as shown below.

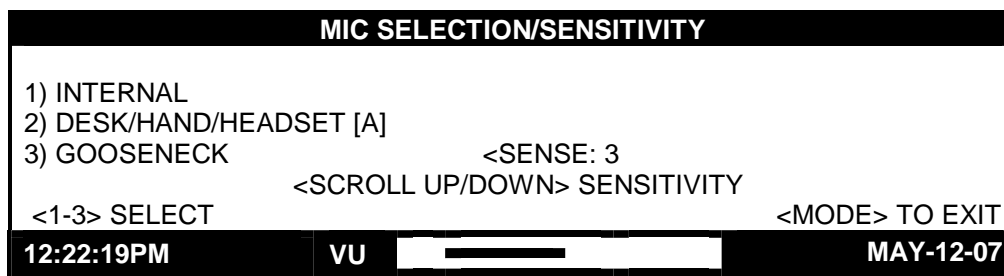


Figure 11. Mic Selection and Sensitivity Menu

The sensitivity of the microphone actually controls the microphone compressor and does not adjust the output level of the microphone. The microphone audio is limited to a certain level to prevent distortion and clipping of voice audio. Increasing the sensitivity of a microphone simply adds pre-gain to the microphone so that less pronounced voices will have pre-amplification applied. A louder voice would require less amplification for best audio performance so a lesser sensitivity would be used.

Automatic microphone selection can be used when a headset or handset is used from time to time and the operator wishes to revert to another microphone when neither of these is in use. For example, to use the gooseneck microphone when the handset is on-hook, select the Desk/Headset/Handset until an **A** appears after the selection and select the gooseneck microphone as shown in the console display above.

When the headset is connected or the handset is taken off-hook, it now becomes the active microphone and the gooseneck microphone is disabled. When the headset is disconnected or the handset is placed back on-hook, that microphone is disabled and the gooseneck microphone is again active. To disable this feature, repeat the procedure above until an **M** is displayed after the selection. The setting of this feature is maintained until changed by the operator.

Printer Error Messages

The console supports the use of a serial printer to log decoded ANI information as well as access to diagnostics and other diagnostic data. If the printer is enabled through the CARD Suite software and the console detects an error, PRINTER ERROR is displayed on the lower right-hand side of the console display unless the printer error message is disabled. This is useful to detect when the printer has lost power or is out of paper.

To disable or enable the printer error, enter the printer error screen. The console displays the current setting as shown below.

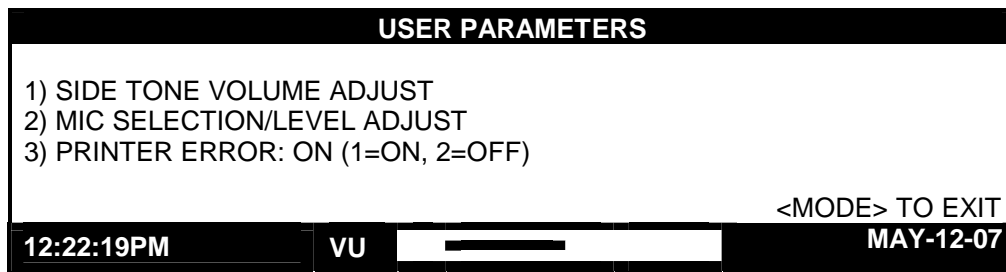


Figure 12. Printer Error

Clock and Display Set

The clock and display can be modified. When this option is selected, the following display is shown.

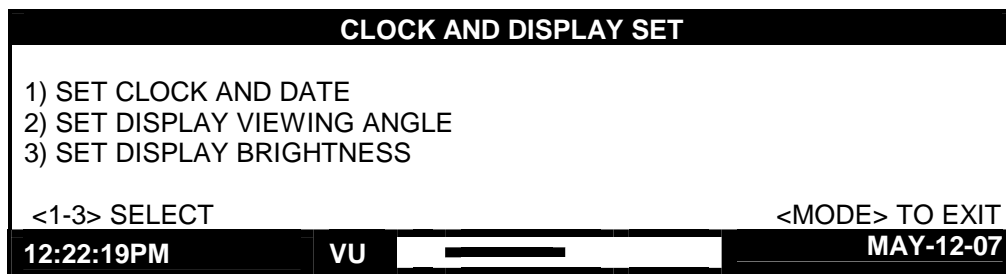


Figure 13. Clock and Display Set Menu

Setting the Display Brightness

The brightness of the console's display can be optimized for the particular location. For example, in a dim environment, the display is more easily read when it is set for a high brightness level.

To adjust the display brightness, press 3 from the Clock and Display Set menu to display the screen shown below. To adjust the brightness from this screen, use the SCROLL Up/Down buttons or enter a value from 0 through 7 directly from the numeric keypad. Continue to adjust until the display brightness is at the desired level.

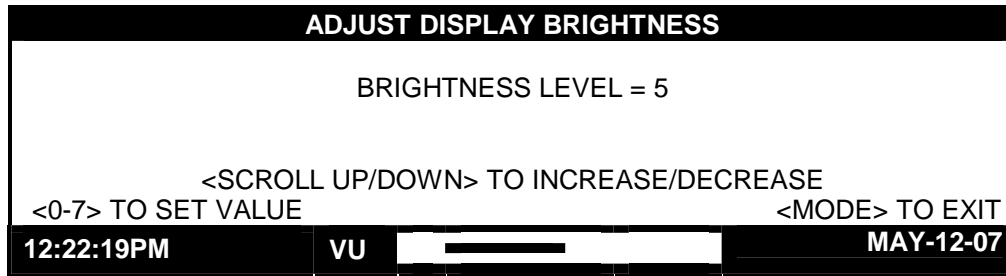


Figure 16. Display Brightness Menu

Service Diagnostics

The Service Diagnostics mode is used in servicing the unit and should only be used by a service technician. If you enter this mode, press the MODE button to return to the main console menu.

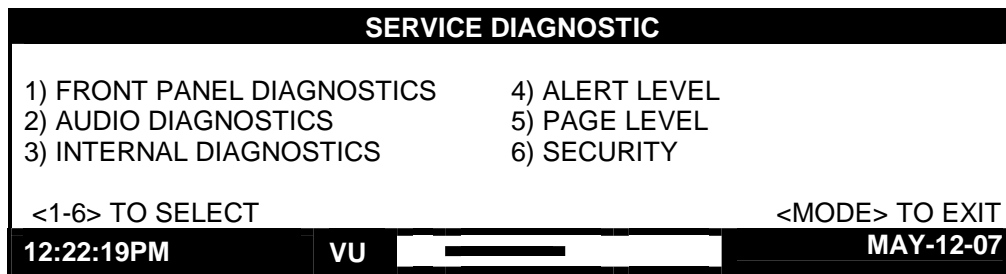


Figure 17. Service Diagnostics Main Menu

Definitions and Acronyms

Term	Definition
CARD Suite Software	GAI-Tronics' radio configuration software application for a personal computer. It is used to program and change the operating characteristics (features and options) of the CommandPLUS Series Desktop Console and some other GAI-Tronics products.
Channel	A single path, separated by frequency or time divisions, for transmitting electrical signals. A receive (one-way) or receive and transmit (two-way) frequency path.
Channel Alias Name	The Alias Name is the assigned user name for a particular channel. Each channel may have up to 4 alias names, one for each transmit frequency or current. Alias Names can be up to 12 characters in length and are programmed through CARD Software.
CSQ	Carrier squelch
CTCSS	A means of grouping users of a common radio channel. Subaudible tones are transmitted with audio; a particular radio's speaker (or the speakers of a group of radios) unmutes to broadcast a transmission only if the associated subaudible tone identifies it as belonging to the radio's user group.
CDCSS	A system analogous to CTCSS but using low-speed digital signaling instead of subaudible tones.
DPL	Digital Private Line - A continuous sub-audible data signal that is transmitted along a carrier. A radio that has DPL on the receive frequency require both the presence of carrier and the correct DPL code before it will unmute. If there is DPL on the transmit frequency, all transmissions on that channel are modulated with the DPL code.
HLGT	High Level Guard Tone notifies the selected base station of a change in its operating mode.
LED	Light emitting diode
LLGT	Low level guard tone
LOBL	When flashing, the Line Operated Busy Light indicates that a parallel console or deskset is transmitting on the associated channel. Transmission on that channel will not be possible.
PL	Private Line (CTCSS/CDCSS squelch) A continuous sub-audible tone that is transmitted along with the carrier. A radio that has PL on the receive frequency requires both the presence of carrier and the correct PL tone before it unmutes. Also, if there is PL on the transmit frequency, all transmissions on that channel are modulated with the PL tone.
PTT	Push-to-talk
Supv	Supervisory Control - The Supervisory Control (Supv) button gives a console operator the ability to supervise any or all of the channels in a multi-console system.
Select Speaker	The select speaker provides the audio for the selected channel.
Unselect Speaker	The unselect speaker sums the audio from all unselected channels.

