ZETRON®

Series 4000 Communication Control
System Operation

Version 5.6

025-9535L

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	Contact your local authority for details in locating a recycle facility nearest to you.

Proper recycling and waste disposal will help conserve resources whilst preventing detrimental effects on our health and the environment.

Notice: The sign "Pb" below the symbol for batteries indicates that this battery contains lead. |

FCC Class A User Information

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.

Regulatory Compliance Markings

When required these products are provided with the following Product Certification Markings:

- FCC markings
- FCC Part 68 (USA)
- CS-03(Canada)

EMC Compliance

- FCC Part 15 - Radiated & Conducted Emissions (USA)
- ICES-003 - Radiated & Conducted Emissions (Canada)

Telecommunications Compliance

- FCC Part 68 (USA)
- CS-03 (Canada)

Safety Summary

> 🛑 **Warning!** For your safety and the protection of the equipment, observe these precautions when installing or servicing Zetron equipment:

- Follow all warnings and instructions marked on the equipment or included in documentation.
- Only technically qualified service personnel are permitted to install or service the equipment.
- Be aware of and avoid contact with areas subject to high voltage or amperage. Because some components can store dangerous charges even after power is disconnected, always discharge components before touching.
- Never insert objects of any kind through openings in the equipment. Conductive foreign objects could produce a short circuit that could cause fire, electrical shock, or equipment damage.
- Remove rings, watches, and other metallic objects from your body before opening equipment. These could be electrical shock or burn hazards.
- Ensure that a proper electrostatic discharge device is used, to prevent damage to electronic components.
- Do not attempt internal service of equipment unless another person, capable of rendering aid and resuscitation, is present.
- Do not work near rotating fans unless absolutely necessary. Exercise caution to prevent fans from taking in foreign objects, including hair, clothing, and loose objects.
- Use care when moving equipment, especially rack-mounted modules, which could become unstable. Certain items may be heavy. Use proper care when lifting.

Added for Rev K, 6 March 2013

- Updated *Series 4000 System Manuals* on page 15 for SDC.
- Updated *Receiving a Call* on page 95 to reorganize screen shots.
- Added *Sprint Direct Connect (SDC) Functions* on page 100.
- Added *Sprint Direct Connect (SDC) Operation* on page 105.
- Updated *General Glossary* on page 150 for SDC.

Added for Rev K.1, 15 April 2013

- Added *Ending the Call* on page 100 and 109.

Change List for Rev L, December 2015

- Removed references to the obsolete Quad Patch Card option from the description of the **Channel Status Regions**, specifically the **Channel Patch Status** on page 56 and *Performing a Group Patch (Patch Groups)* on page 64

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Introduction

This manual divides operation into two main chapters: one for button-based consoles (such as the Model 4018 or 4118) and one for IntegratorRD consoles.

Button-Based Consoles

The Series 4000 Communication Control System provides a means for one or more dispatchers to efficiently control a radio system composed of up to 24 radio channels. It is suitable for use in public safety applications, such as police and fire communications, as well as public service applications, such as utility and industrial communications. Its unique features allow it to be tailor-fit for any of these broad-ranging requirements.

Common Control Equipment

The Model 4048 and Model 4020 Common Control Equipment (CCE) are part of the Series 4000 Communication Control System. They enable one or more dispatchers to control a multi-channel radio system efficiently.

The CCE is the central interface that routes signals between radio channels and dispatch consoles. The Model 4048 contains up to 48 modular circuit cards. It handles up to 48 radio channels and up to 16 dispatch console positions. The Model 4048 is typically installed near the radio base station and telephone line terminations.

Figure 1: Model 4048 Common Control Equipment

The Model 4020 Common Control Equipment provides the same functionality as the Model 4048, but is configured for smaller systems. A Model 4020 system contains up to 19 modular circuit cards. It handles a maximum of twenty radio channels and six dispatch console positions.

The CCE resides in a standard open-frame or fully enclosed 19-inch EIA equipment rack (not included as part of the system) and is typically located in a back room away from traffic and dust. The choice of an open or enclosed rack depends on the location and whether or not additional air filtration is required. The CCE consists of a set of modular 19-inch rack mounted components. Depending on configuration, the Model 4048 CCE requires between 36.75 and 56 inches of vertical rack space. The Model 4020 CCE requires a minimum of 17.5 inches of vertical rack space.

Figure 2: Model 4020 Common Control Equipment

Consoles

Figure 3: Desktop Model 4018 Dispatch Console

The Model 4018 Desktop Console contains select and unselect speakers, system control switches, numeric keypad for paging, and a 60-button panel for channel control.

Figure 4: Model 4118 Dispatch Console with IntegratorRD

Each Model 4118 Dispatch Console has connections for headsets, gooseneck microphones, foot switches, and recorders. Each Model 4118 requires at least one Model 4115 Console Expander and supports up to three Console Expanders. The Model 4118 also has a numeric keypad for paging and system control switches.

Operation

See *Operating Button-Based Consoles* on page 17.

IntegratorRD Workstations

The IntegratorRD Workstation is the most sophisticated dispatch operator position in the Series 4000 family. It utilizes the Integrator Radio Dispatch Software and provides a flexible CRT-based approach to integrating radio control, paging, alarm monitoring, and other functions into one easy-to-use console position.

The IntegratorRD Workstation (see Figure 4) supports up to 20 channels if used in conjunction with the Model 4020 CCE, or 48 channels if used with the Model 4048 CCE.

The IntegratorRD Workstation provides a compact, uncluttered means of displaying and controlling system status and activity. Use of a touch screen, mouse/trackball, and keyboard allow for maximum flexibility of operation. IntegratorRD uses a high resolution color display to present status clearly. This display is configurable, which allows for custom arrangements of information.

Feature Summary (with Model 4020/4048)

- Supports up to 48 channels – combined radio and telephone (20 channels – Model 4020).
- Up to 16 operator positions – allows a combination of conventional button consoles (tabletop or rack mounted) with IntegratorRD positions (6 positions, Model 4020).
- Intuitive display – provides compact, clear, and concise identification of control information.
- Large easy-to-use screen buttons – screen buttons "respond" to touch or mouse activation in 3-D fashion; the buttons appear to depress when touched. Color and the 3-D effects indicate function status.
- Screen organization allows control of up to 36 channels at all times – even when performing auxiliary I/O, paging, or setup functions. Menu functions do not restrict channel operation, such as transmit, select, frequency select, or mute.
- Supports touch screen and/or mouse operation with panel keypad for encoder entry and special functions. In addition to the standard Audio Panel keypad, an optional Model 4115 Expansion Panel can be included for systems with substantial auxiliary I/O or Instant Call paging requirements.
- Compatible with standard, serial bus touch screen monitors.
- Flexible audio panel options allow for remote or rack mounted speakers, an encoder and function keypad, a speaker volume control, a large 24-hour clock, and VU meter.
- Advanced, one-touch, channel group operation for multiple selects, transmits, and patches. Groups are defined by the operator.
- Patching capacity of up to 24 simultaneous cross-channel patches.
- One-touch paging operation, using named buttons instead of pager codes. Hierarchical menu allows pages to be logically organized for quick access.
- ANI (with alias translation). Translates the caller's ID into a configurable name and displays it on the receiving channel.

- Near "turn-key" operation. No complicated utilities requiring special skills. Simply define the common control equipment using the included Radio Dispatch Programming Software.

- Supports centralized configuration file management when on a network.

Operation

See *Operating IntegratorRD Workstations* on page 51.

Figure 5: Model 4217B Audio Panel

Figure 6: Model 4219 Console Audio Interface

Manuals

Due to the broad scope of the Series 4000 Communication Control System, there are several manuals that describe the different aspects of the system. Table 1 lists the primary system manuals.

Table 1: Series 4000 System Manuals

Primary Manuals		
Title	**Part #**	**Description**
Series 4000 Communication Control System Installation and Configuration	025-9533	Describes how to configure and install the Model 4048 and Model 4020 Common Control Equipment, IntegratorRD, Model 4018 and 4118 consoles, accessories, and related software such as the Radio System Management Program.
Series 4000 Communication Control System Operation (this manual)	025-9535	Describes how to operate the Series 4000 Communication Control System, and IntegratorRD.
Series 4000 Interconnect Diagram	024-0334	Shows a detailed diagram of a typical Series 4000 system and its interconnects.
Options		
Title	**Part #**	**Description**
Series 4000 VoIP Console Gateway Product Manual	025-9572	Describes how to install and configure the Series 4000 VoIP Console Gateway.
Modem Option for Series 4000 Communications Control System Technical Manual	025-9161	Contains installation procedures, parts lists, and schematics for the Modem Option for Series 4000.
Series 4000 Intercom Interface Installation and Service Manual	025-9331	Describes how to install the intercom interface and contains schematic and parts lists.
Telephone Radio Headset Interface Product Manual	025-9553	Provides instructions for TRHI installation and configuration.
Intelligent Radio Interface Module for Kenwood Radios Product Manual	025-9520	Provides instructions for installation, configuration, and operation for Kenwood iRIM.
Intelligent Radio Interface Module for EFJohnson RS-5300 Series Radios Product Manual	025-9542	Provides instructions for installation, configuration, and operation for 5300 iRIM.
Series 4000 iDEN Interface Option Installation	025-9566	Provides instructions for installation and configuration of iDEN radios for Series 4000.
Series 4000 SDC Interface Option Installation	025-9667	Provides instructions for installation and configuration of Sprint Direct Connect radios for Series 4000.

Operating Button-Based Consoles

This chapter presents an overview of the Series 4000 console panels, a description of each button function, and a detailed operational description of the Series 4000 button-based consoles.

For similar information about IntegratorRD, see *Operating IntegratorRD Workstations* on page 51.

In this chapter:

Console Panel Overview

Model 4018 Desktop Console

The Model 4018 Desktop Console is a single position console. It contains select and unselect speakers and their volume controls, channel volume control, 24-hour time display (or message display), and level meter.

As shown in Figure 7, the field of 16 keys on the lower, right hand side of the Desktop Console is the system control section. The layout and function of the keys in the system control section are tailored to your specific system by using the Series 4000 Console Programming System. See *System Control Functions* on page 21 for a list of commonly used system control keys. The functions of these keys usually apply to either the selected channel or to all channels in general.

Figure 7: Model 4018 Desktop Console

The 16 keys on the lower left hand side are a numeric keypad used for paging.

The field of 60 keys across the upper portion of the Desktop Console is the channel control section. The layout and function of the keys in the channel control section are also tailored to your specific system by using the Series 4000 Console Programming System. Usually the channel legend above a column of keys indicates that those keys are used to control that channel. See *Channel Control Functions* on page 26 for a list of commonly used channel control keys.

Model 4118 Dispatch Console

The Model 4118 Dispatch Console is a single position rackmount console. It contains select and unselect speakers and their volume controls, channel volume control, 24-hour time display (or message display), and level meter.

As shown in Figure 8, the field of 16 keys on the right hand side of the console is the system control section. The layout and function of the keys in the system control section are tailored to your specific system by using the Series 4000 Console Programming System. See *System Control Functions* on page 21 for a list of commonly used system control keys. The functions of these keys usually apply to either the selected channel or to all channels in general.

The 16 keys on the left hand side are a numeric keypad used for paging.

The console may be expanded by adding a maximum of three Model 4115 Console Expanders, which contain a field of 60 programmable, push button switches that are usually used for system and channel control.

Figure 8: Model 4118 Dispatch Console

Model 4115 Console Expander

The optional Console Expander (see Figure 9) contains a field of push buttons switches that are usually used to provide system and channel control buttons for the Model 4118 Dispatch Console.

The layout and function of the system and channel control buttons are tailored to your specific system. The functions of the system control buttons usually apply to either the selected channel or to all channels in general. The functions of the channel control buttons apply only to the designated channel usually indicated by the legend plaque above the button column.

Figure 9: Model 4115 Console Expander
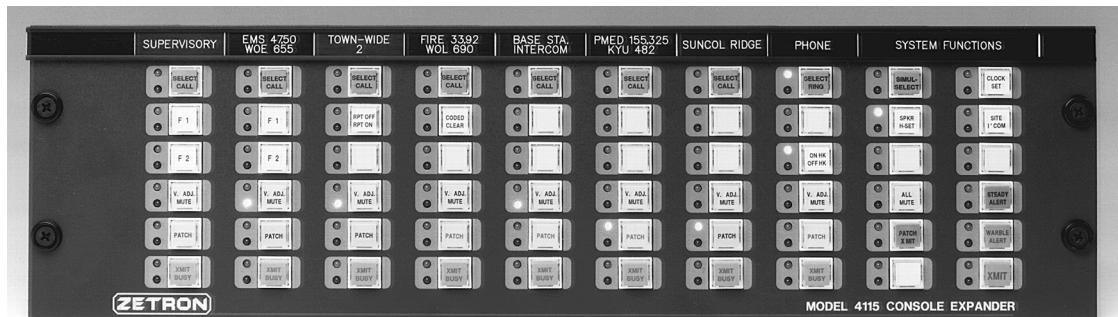
Console Features

Select/Unselect Speakers

The speaker and volume control on the left are for select audio. The speaker and volume control on the right are for unselect audio.

Microphone

The Dispatch Console may be equipped with a handset, headset, desktop microphone, or gooseneck microphone. Lifting the handset from its cradle or plugging the headset into its jackbox usually causes the Select audio to be routed to the earpiece rather than the Select speaker. Optionally, a **SPEAKER/H-SET** button may be used to reroute the audio. The jackbox has a volume control for the headset earpiece.

The handset and desk top microphone options have a built-in PTT (push to talk) button, which when pressed, transmits on the Selected channel. Usually, the headset and gooseneck mount microphone require the use of a foot-operated PTT or the **TRANSMIT** button on the console in order to transmit on the Selected channel.

Time/Message Display

The display on the Dispatch Console is normally used to show time in either a 12-hour or a 24-hour format. The time shown is synchronized with any other consoles in the system. In systems equipped with the ANI (Automatic Number Identification) option, the display is also used to show the number of the calling unit. In the event of system changes (such as a failure), the display may also show diagnostic messages.

If desired, the display can be programmed to show dashes only. For example, when a facility master clock is used for time reference, this would be appropriate. Refer to the *Series 4000 Communication Control System Installation and Configuration* Manual (P/N 025-9533) for programming information.

Level Meter

During transmit and intercom operation, the level meter (under the time display) shows the level of your voice. During receive operation, the meter shows the level of the audio on the Selected channel.

Button Functions

In this section:

System Control Functions

Some of the following functions may be present in the system control section of your console. The abbreviation to the right of the feature is the name typically found on the button label.

Transmit (XMIT)

Pressing and holding this button allows you to transmit on all selected channels. This is paralleled with the optional foot-operated PTT switch. Whenever your console is transmitting, this button's red LED indicator is illuminated.

Monitor (MON)

Pressing this button causes the selected channel to disable its coded squelch (PL) decoding, thus allowing you to monitor for activity on the channel prior to transmitting. In some cases, this channel remains in monitor condition until it is transmitted on. In other cases, the channel is only monitored while the button is pressed. The red LED on this button is illuminated while the channel is being monitored.

Site Intercom (SITE I'COM)

Pressing and holding this button allows you to talk to the selected remote base station site without transmitting over the radio channel. This feature performs the function of an intercom between you and service personnel at the base station site. The red LED on this button is illuminated while talking on the site intercom.

Alert (ALERT)

While this button is pressed, you are transmitting an alert or test tone over all selected channels. The red LED on this button is illuminated while doing so. There may be several types of alert buttons on your console. If **ALERT** is pressed while **SITE I'COM** is being pressed, the alert tone is sent only as far as the base station. It is not sent over the transmitter.

All Mute (ALL MUTE)

Pressing this button causes all unselected channels to mute (be reduced in level). Pressing this button again causes the mute to cancel, returning all channels to their previous audio levels. However, if this mute has a time period programmed for it (optional), it eventually cancels itself. The red LED of this button, as well as all unselected channels' mute buttons, is illuminated while **ALL MUTE** is invoked.

Simultaneous Select (SIMUL-SELECT)

The **SIMUL-SELECT** button allows selection of more than one channel at a time. To perform this, press and hold the **SIMUL-SELECT** button, then with the other hand, press the **SELECT/INSTANT SELECT** buttons of the desired channels. When all of the desired channels have been selected, release the **SIMUL-SELECT** button. Whenever more than one channel is selected, the red LED on the **SIMUL-SELECT** button is illuminated. To cancel the simultaneous selection, press the **SELECT/INSTANT SELECT** button of a single desired channel.

Group Select (<name> SELECT)

A single press of the GROUP SELECT button selects a predefined set of channels. There may be several GROUP SELECT buttons on a console. The GROUP SELECT button is usually labeled with the name of the group it selects, such as FIRE SELECT or POLICE SELECT. While the group is selected, the red LED on the appropriate GROUP SELECT button is illuminated. The group selection is canceled by pressing any channel's SELECT/INSTANT SELECT button.

Group Instant Transmit (<name> XMIT)

A predefined group of channels may be simultaneously transmitted on by pressing and holding a GROUP INSTANT TRANSMIT button. Doing this does not change the current channel selections. While a GROUP INSTANT TRANSMIT button is pressed, its red LED is illuminated. There may be several GROUP INSTANT TRANSMIT buttons on a console. A GROUP INSTANT TRANSMIT button is usually labeled with the name of the group it transmits on, such as Fire Xmit or Police Xmit or APB.

Patch Transmit (PATCH XMIT)

Pressing and holding this button transmits on all of the channels that are currently patched on your console, even if multiple Patch Paths are set up. This button only functions when there is no call activity on any of the patched channels.

Priority Transmit (PRI'TY XMIT)

This button operates like the **TRANSMIT** button but allows you to override any other console transmitting on your selected channel. The **PRIORITY TRANSMIT** button only functions on a supervisory console.

Last Call Transmit (LAST <type>)

This button operates similarly to an **INSTANT TRANSMIT** button. It transmits on the channel that received the last call. Three types of last call transmit buttons are available:

- Last Call Any Channel (**LAST XMIT**): This button transmits on the last channel that received a call
- Last Call Selected Channel (**LAST SEL**): This button transmits on the last selected channel that received a call
- Last Call Unselected Channel (**LAST UNSEL**): This button transmits on the last unselected channel that received a call

Console Intercom Call/Talk (<name> CALL/I'COM TALK)

There are two buttons used for the interconsole intercom; the **CONSOLE I'COM CALL** button and the **CONSOLE I'COM TALK** button. Pressing the **CONSOLE I'COM CALL** button causes the called console to alert its operator by emitting a beep and displaying "I-CALL". To talk to the called console, press and hold the **CONSOLE I'COM TALK** button while speaking into the microphone. The intercom is turned off by again pressing the **CONSOLE I'COM CALL** button that was recently pressed. While the intercom is on (monitored) at your console, the green LED on the **CONSOLE I'COM TALK** button is illuminated. While you are talking over the intercom, the red LED on the **CONSOLE I'COM TALK** button is illuminated. There may be several **CONSOLE I'COM CALL** buttons but only one **CONSOLE I'COM TALK** button. The **CONSOLE I'COM CALL** button is usually labeled with the name of the console positions it calls, such as "Fire Call" or "EMS Call".

Console Takeover (<name> T'OVER)

The supervisor position has the ability to take over any position by pressing the **CONSOLE TAKEOVER** button for that position. The console position that is taken over displays "TakeOver" and does not respond to any of its buttons. The console taken over is released by the supervisor by again pressing the **CONSOLE TAKEOVER** button. While a **console** is taken over, the red LED on the **CONSOLE TAKEOVER** button is illuminated. There may be several **CONSOLE TAKEOVER** buttons, as many as there are consoles in the system. The **CONSOLE TAKEOVER** button is usually labeled with the name of the console it takes over, such as **Fire T'over** or **Police T'over**.

ANI Review (ANI REVIEW)

When your console is called from a field unit using ANI (Automatic Number Identification), its unit number is shown on your time/message display. In addition, the red LED on the **ANI REVIEW** button illuminates. To service the display and view the next ANI in sequence (if any), press the **ANI REVIEW** button. When the last ANI has been reviewed, the red LED on the button turns off.

ANI Select (ANI SELECT)

You may automatically select the channel of the calling ANI unit whose number is shown in your display, by pressing the **ANI SELECT** button.

Diagnostic Reset (DIAG RESET)

If your console is equipped with this button, then any diagnostic messages that come to your display can only be cleared by pressing this button. The red LED of this button is illuminated as long as a diagnostic message is being displayed. If this happens, you should write down the message and the time and give it to the maintenance personnel prior to resetting the message. If not equipped with this button, then the diagnostic message is cleared when any button on your c

onsole is pressed. This button may also be labeled **FAULT ACK**.

Speaker/H-Set (SPKR/H-SET)

Pressing the **SPEAKER/H-SET** button causes the select audio (and optionally the unselect audio) to be rerouted from the speaker to the headset or handset earpiece. Pressing the button again routes the audio back to the speaker. When the audio is routed to the speaker, the green LED on the button is illuminated; when routed to the head/handset, the red LED is illuminated. If used in parallel with a handset hookswitch or a headset jackbox, the LEDs show the route of the automatically switched audio. This button may be used to override the automatic routing.

Priority Marker (PRI'TY MARKER)

Pressing this button enables the priority marker for the currently selected channel. This function emits a brief tone over the radio channel every few seconds while radio traffic is idle. While the priority marker is enabled on the selected channel, the red LED on the button is illuminated. While it is illuminated, pressing the button again disables the marker on the selected channel. Markers operating on unselected channels are indicated by a blinking red LED on the **PRIORITY MARKER** button.

Clock Set (CLOCK SET)

The **CLOCK SET** button should only be operated on the supervisor's console. When momentarily pressed, the console enters the clock set mode. The display changes to a time display with one of its time units flashing. The flashing unit is adjusted using the **CHANNEL VOLUME** knob. The first unit to be adjusted is the seconds. The next five momentary presses of **CLOCK SET** then allows you to adjust the minutes, hours, month, day and year in order. The right hand decimal point is illuminated when the month/day/year is being displayed. Pressing **CLOCK SET** on more time while the year is flashing returns the console from the clock set mode. When the entire time and date have been set, all other consoles in the system synchronize to the new time/date.

Volume Reset (VOL RST)

This button causes the volume on all channels to be reset to the default level set by CPS. This button does not affect channel volume on other positions.

EDACS System Functions

Group Up

Pressing this key causes the current group setting of the EDACS radio connected to the selected channel to change to the next group on the radio's internally programmed group list. Pressing this key is functionally equivalent to pressing the Group Up Ramp Switch on the EDACS radio. This key is also used to change settings once in the MENU, SPCL CALL, STATUS, or MESSAGE selection displays.

STOP **Warning!** Do not change the group or system during emergency reception. Specifically this means do not press the Group Up, Group Down, or System buttons during emergency reception. It is safe to use these buttons again only after Clear Alert is pressed. Changing the group or system before or at the same time a Clear Alert is pressed will cause Orion EDACS radios to lock up, requiring a reset at the radio.

Group Down

Pressing this key causes the current group setting of the EDACS radio connected to the selected channel to change to the previous group on the radio's internally programmed group list. Pressing this key is functionally equivalent to pressing the Group Down Ramp Switch on the EDACS radio. This key is also used to change settings once in the MENU, SPCL CALL, STATUS, or MESSAGE selection displays.

STOP **Warning!** Do not change the group or system during emergency reception. Specifically this means do not press the Group Up, Group Down, or System buttons during emergency reception. It is safe to use these buttons again only after Clear Alert is pressed. Changing the group or system before or at the same time a Clear Alert is pressed will cause Orion EDACS radios to lock up, requiring a reset at the radio.

System

Pressing this key initially causes the current system setting to be displayed. Subsequent presses (before a 1-second timeout period) increment the system setting to the next system

on the radio's internally programmed system list. Pressing this key is functionally equivalent to pressing the SYS button on the EDACS radio.

🛑 **Warning!** Do not change the group or system during emergency reception. Specifically this means do not press the Group Up, Group Down, or System buttons during emergency reception. It is safe to use these buttons again only after Clear Alert is pressed. Changing the group or system before or at the same time a Clear Alert is pressed will cause Orion EDACS radios to lock up, requiring a reset at the radio.

Menu Clear

Pressing this key causes the radio to drop out of any Menu display and return to the Group display. Pressing this key is functionally equivalent to pressing the CLR button on the EDACS radio.

Special Call

Pressing this key gives the operator access to the radio's Special Call Menu (SPC CALL). Pressing this key is functionally equivalent to pressing the A2 button on the EDACS radio. The Group Up and Group Down keys are used to select the radio to which the special call is made.

This function requires configuration in the EDACS radio personality programming.

Emergency Declare

Pressing and holding this key for longer than 1 second causes an emergency declaration. Pressing this key is functionally equivalent to pressing the HOME button on the EDACS radio.

Channel Control Functions

Some of the following buttons may be present in the channel control section of your console. The abbreviation to the right of the button name is the name typically found on the button label.

Select (SELECT/CALL)

A channel is selected by pressing its **SELECT** button. Pressing the **SELECT** button also unselects all other channels. The button's green LED indictor illuminates while the channel is selected. The second LED of this button is usually a Call Busy indicator. This red LED blinks while the channel is receiving audio (Call), and stays on continuously when the channel is being transmitted on by its own or any other console position (Busy).

Frequency Select (F<n>)

Some channels have multi frequency base stations. In these situations you find one or more frequency select buttons for the channel. These are usually labeled **F1**, **F2**, etc. To select a frequency, press the desired button. The green LED illuminates on whichever frequency is currently selected. The LED may change automatically with the selection of a different frequency on that channel by another console.

Some two-frequency channels may have only one button to select between them. In this case, it may be labeled **F1/F2**. Pressing the button causes the frequency selection to alternate between the two frequencies. The selected frequency has the adjacent LED illuminated and the other extinguished.

Instant Select (F<n> SEL/CALL)

INSTANT SELECT is a direct way of simultaneously selecting both the channel and the frequency for the channel. If your console is equipped with such buttons, you will not find the standard **SELECT/CALL** button, but rather buttons labeled like **F1 SELECT/CALL**, **F2 SELECT/CALL**, etc. Every **INSTANT SELECT** button has its own red Call/Busy LED. Only one Call/Busy LED per channel is active at a given time, and this is on the currently selected frequency. This is so that you may associate the receive activity with the actual selected frequency. Usually the **INSTANT SELECT** buttons with solid green indicators show which frequency of the unselected channel is active. The **INSTANT SELECT** button with the blinking green indicator shows which channel is selected as well as the active frequency for that channel.

Instant Transmit (XMIT/BUSY)

Pressing and holding the **INSTANT TRANSMIT** button of a channel causes transmission on that channel, without changing channel selection. The red LED of this button illuminates whenever your console is transmitting.

Volume Adjust (VOL ADJ)

The volume of a channel, relative to the other channels, may be adjusted using the channel's **VOLUME ADJUST** button and the **CHANNEL VOLUME** knob. Press and hold the **VOLUME ADJUST** button and notice the display change to a two-digit value. The value being displayed is the percentage volume currently set. To adjust the volume up or down turn the **CHANNEL VOLUME** knob clockwise (up) or counter-clockwise (down) while the **VOLUME ADJUST** button is still being pressed. The display increases or decreases in value. When you release the **VOLUME ADJUST** button, the display returns to its previous display.

Mute/Volume Adjust (V ADJ/MUTE)

Press the **MUTE** button and the volume level of the channel is reduced to a predetermined level. Press the **MUTE** button again and the volume is restored to its previous level. While the channel is muted, the red LED of its **MUTE** button is illuminated. If the **CHANNEL VOLUME** knob is turned while the **MUTE** button is pressed, the channel becomes

unmuted and the volume of the channel is changed as described for the **VOLUME ADJUST** button. While in adjustment mode, the green LED is illuminated. Whenever the **MUTE** button is pressed, the current volume level is briefly displayed for your review.

Patch (PATCH)

A patch may be set up between channels or from the channel to a telephone line. Any number of channels may be included in a patch. To set up a channel in the patch, press the **PATCH** button. While the patch is active for the channel, the green LED of its **PATCH** button is illuminated. During operation, the first channel to have receive activity causes its receive audio to be transmitted on all other channels in the patch.

Main/Standby (MAIN/STBY)

Pressing the **MAIN/STANDBY** button causes the system to switch to the channel's standby base station. Pressing the button again causes the main base station to be switched back in. While the main is active, the button's green LED is illuminated. While the standby is active, the button's red LED is illuminated. Changing this causes all other consoles to reflect the change on their **MAIN/STANDBY** buttons.

Monitor (MON)

Pressing this button causes the channel to disable its coded squelch (PL) decoding, allowing you to monitor the channel before transmitting.

Volume Up (VOL UP)

Pressing this button causes the current volume setting for the channel to be displayed. Holding the button causes the volume to increment up approximately three times per second. Release the button when the desired volume is reached.

Volume Down (VOL DN)

Pressing this button causes the current volume setting for the channel to be displayed. Holding the button causes the volume to be decremented. Release the button when the desired volume level is reached.

EDACS Channel Functions

Scan

Pressing this key causes the EDACS radio to enable/disable scan mode. The green LED reflects the state of the scan mode setting, green LED on indicates that scanning is on; green LED off indicates that scanning is off. Pressing this key is functionally equivalent to pressing the SCN button on the EDACS radio.

Scan Add

Adds and adjusted the priority of a talkgroup in the scan list.

Emergency Clear

Pressing this key causes the radio to clear a currently existing emergency condition. The green LED of this button blinks to indicate when an emergency condition exists, and the display indicates the ID of the originator of the emergency. Pressing this key is functionally equivalent to pressing the HOME button then the CLR button on the radio.

Private

This button enables/disables the optional Aegis/Encryption hardware that can be added to the radio. The green LED reflects the state of the private setting, green LED on indicates that the Aegis/Encryption option is enabled; green LED off indicates the option is disabled. Pressing this key is functionally equivalent to pressing the A1 button on the radio. This key cannot simultaneously exist with the Scan Add/Delete key.

This function requires configuration in the radio personality programming.

Transmit (XMIT) and Instant Transmit

This key causes a push to talk to be generated to the radio. The radio must obtain a transmit channel from an EDACS controller and begin transmitting before speech can begin, so the radio provides a clear to proceed audible beep once the transmit channel setup is complete. The radio also provides tones to indicate that no channels are available, when a function cannot be supported, or when it has lost contact with the controller. For a complete understanding of the radio's audio responses please refer to the Radio Operator's Manual.

Patching

Attempts to use patching between EDACS channels or from conventional channels to EDACS channels is not recommended, as it may cause unpredictable results.

Miscellaneous Functions

Some of the following optional buttons may be present in the channel control section of your console.

Private Line Select (PL<n>)

Private line (or PL) selection on a channel is performed much like frequency selection is performed. **PL SELECT** buttons are typically labeled **PL1**, **PL2**, etc. To select a PL, press the button labeled with the desired PL number and the button's green LED illuminates (all other PL selections in the channel extinguish). With just one PL button, an alternating selection occurs. In some cases, these may be included as **INSTANT SELECT** buttons in which case they may be labeled **PL1 SELECT/CALL**, **PL2 SELECT/CALL**, etc.

Repeat On/Off (RPT ON/RPT OFF)

Pressing the **REPEAT ON/OFF** button causes the repeater function at the base station to be disabled. While disabled, the red LED is illuminated. Pressing the button again causes the channel's repeat function to be enabled. While enabled, the green LED is illuminated. Changing this may cause the indicators at other consoles to change also.

Coded/Clear (CODED/CLEAR)

Pressing the **CODED/CLEAR** button causes the voice scrambler at the base station to be disabled (clear). While disabled, the red LED is illuminated. Pressing the button again causes the channel's voice scrambler to be enabled (coded). While enabled, the green LED is illuminated. Changing this may cause the indicators at other consoles to change also.

Self Repeat (SELF RPT)

Pressing the **SELF REPEAT** button causes the console to enable the repeat patch between the base stations receiver and its transmitter. While enabled, the red LED is illuminated. Pressing the button again causes the channel's repeat patch to be disabled. While disabled, the LED is extinguished. Changing this causes the indicators at other consoles to change also.

Second Receiver On/Off (R2 ON/R2 OFF)

Pressing the **SECOND RECEIVER ON/OFF** button causes the console to mute the base station's second receiver. While muted (off) the red LED of this button is illuminated. Pressing the button again causes the second receiver to unmute. While unmuted (on) the green LED of this button is illuminated. Changing this may cause the indicators at other consoles to change also.

ANI Source (ANI SOURCE)

These indicators are used to identify the source of ANI information on systems equipped with the ANI option. The red LED indicator illuminates when an ANI has been received on this channel. If the ANI currently displayed on the console is from this channel, the green LED indicator is illuminated. When all pending ANIs from this channel have been reviewed using the **ANI REVIEW** button, the red indicator extinguishes.

Wild Card On/Off (WC ON/WC OFF)

This function allows remote control of miscellaneous equipment at the base station site. This is often used to turn on or off generators, beacons, and similar on site equipment. Usually, the label of such buttons reflects the equipment it controls.

On Hook / Off Hook (ON HOOK/OFF HOOK)

This button is found on telephone line channels only. It is used to connect and disconnect the telephone line. While connected (off hook), the red LED is illuminated. While

disconnected (on hook), the green LED is illuminated. All other controls for telephone line channels are identical to that of normal radio channels.

Hook Flash (FLASH)

This button is found on telephone line channels only. It is used to send a hook flash to the telephone system. **HOOK FLASH** is normally used to transfer a call to another telephone extension.

Channel Test (CHAN/TEST)

Pressing this button causes all LEDs to flash for all channels that have failed or are not present in the system. No LEDs flash if all programmed channels are operational.

Paging Functions

The Models 4018 and 4118 consoles have a built-in paging encoder. The following features and buttons may therefore be present. In the following descriptions, the abbreviation to the right of the feature is the name typically found on the button label.

Paging Keypad

The 16-key keypad is always present and is used for manual entry of paging codes. If the console has been programmed to recognize more than one paging format, the first keypad digit entered instructs the encoder which format is to be sent. The remaining digits determine the page code within the format.

Instant Call

INSTANT CALL allows a single button press to send preprogrammed paging sequences over preprogrammed console channels. These buttons are typically labeled with the name of the individuals or apparatus that are signaled by their programmed pages.

The LEDs next to each **INSTANT CALL** button are useful in determining the state of the associated page, as shown in the following table.

Table 2: Instant Call Status 4018/4118

LED	Channel Control Button Panel	System Control Button Panel
Solid Green	Selected and pending transmission	N/A
Solid Red	Paging transmission in progress	Paging transmission in progress
Blinking Green	Pages were sent	N/A
Blinking Red	Pages were aborted and not sent	Pages were aborted and not sent

Enter (PAGE ENTER)

This button terminates a manual paging code entry (entered via the paging keypad). This button is only required for paging formats which have a variable number of paging digits such as DTMF. Fixed length paging formats (such as Motorola/GE Two-Tone) are self-terminating when the required digits have been entered, as indicated by the slash (/) terminator character in the display. This button's red LED blinks whenever one or more pages have been manually entered.

Send (PAGE SEND)

This button terminates any manual paging code entry (under the same conditions as the **PAGE ENTER** button). It then transmits the previously entered pages (the page stack) on the currently selected channels in the same order as the pages were entered. The same page stack can be retransmitted (on different channels, for example) by merely pressing the **PAGE SEND** button again. The current page stack is retained until the **PAGE CLEAR** button is pressed or a new manual page entry is started. This button's red LED is illuminated during the page stack transmission.

Clear (PAGE CLEAR)

This button's operation depends on the current paging mode.

If manual paging code entry is in progress, **PAGE CLEAR** aborts the current button entry sequence and clear the paging display. Any previously entered pages is retained.

If manual or instant call paging transmission is in progress, **PAGE CLEAR** immediately aborts the paging transmission, flush all manual and instant call page stacks, and extinguish all page button LEDs.

For all other operating modes, **PAGE CLEAR** clears all manual and instant call page stacks and extinguish all page button LEDs. This button's red LED is illuminated while it is pressed.

Safety (PAGE SAFETY)

This function only applies to instant call paging and is only operational if the **PAGE SAFETY** button has been programmed. In this case, when one or more instant call page buttons have been pressed, the paging transmission does not begin until the **PAGE SAFETY** button is pressed. Otherwise, the paging transmission would start immediately

after the first **INSTANT CALL** button is pressed. This button's red LED blinks when any instant call page is pending and be on solidly during instant call paging transmission.

Channel IRR Functions (Models 4018 & 4118 Only)

> **Note** This section only describes the use of the Channel Check Recall Recorder with button-based consoles.
>
> For Channel Check Recall Recorder on IntegratorRD, see *Channel Check Recall Recorder Functions* on page 84.
>
> For Integrator IRR, see *Integrator Instant Recall Recorder Product Manual* (P/N 025-9496).

The Models 4018 and 4118 consoles support the Channel Instant Recall Recorder feature. This feature is only available with the Universal Dual Channel Card (950-9819 or 950-9820). There are two versions of each of the following functions. The Instant function acts on a specified channel. The System function acts on the channel that is currently selected. However, if more than one channel is selected, the function is ignored by the console.

Play / Pause

This button starts IRR playback at the current playback message pointer if the IRR is stopped or paused. It stops IRR playback and enters Pause mode if the IRR is playing.

When the IRR is playing, it automatically enters the Pause mode when a Call is received or any Transmit occurs on the channel so that IRR can record the activity. When recording is over, playback resumes in the message when the operator presses Play. If the record activity over-wrote the paused message, the Pause mode is cancelled and IRR switches to Stop mode.

During playback, unless interrupted, only one message is played and then the IRR automatically enters the Pause mode. The button must be pressed again to play the next message. When the last (newest) message has been played, the Playback/Pause modes is canceled and the IRR is idle.

To help distinguish between recorded and live audio, a short, distinctive beep precedes each IRR playback and a different beep is heard when the IRR playback is stopped.

The playback message pointer is initially set to the beginning of the most recently recorded message and can be manipulated with the REWIND and RESET functions.

The console ignores this button if another position has already invoked this channel's IRR Playback or Pause function. This button also has no effect if the Channel Card has no IRR capability or if nothing has yet been recorded.

The IRR playback audio is only sent to the console position that initiated it, and is not heard at any other position.

The button's red LED winks while the button is pressed. When the button is released, it goes on if Playback is active, blinks if IRR Playback or Pause has been initiated by another position, or else goes off.

The button's green LED goes on when playback is paused, otherwise it is off.

On the console position that initiated the IRR function, the display shows the active IRR message number while playing or paused. All other positions displays a "IRR Busy" prompt, indicating that all IRR functions except Record are disabled for them.

Rewind

When this button is pressed, if the IRR is not playing it enters the Pause mode. The IRR playback pointer is moved back one message each time the button is pressed until the oldest message has been reached. If the IRR is playing, it enters the Pause mode and the playback pointer is moved to the beginning of the message that was playing (such that pressing the **PLAY** button then replays that message).

If the **REWIND** button is held down, this function auto repeats until the oldest message is reached.

A momentary tone is generated in the Select speaker each time the playback pointer is moved to the next message by this function. When the oldest message has been reached, a different, continuous tone is output until the button is released.

The console ignores the **REWIND** button if another position has already invoked this channel's IRR Playback or Pause function. This button also has no effect if the Channel Card has no IRR capability or if nothing has yet been recorded.

The **REWIND** button's red LED turns on when the button is initially pressed, then off if no IRR response is received from the Channel Card within about one second. The LED remains on if the IRR playback pointer has not reached the first (oldest) message or blinks if the IRR playback pointer is now at the first message. The LED always turns off when the button is released. No IRR response is returned if the Channel Card has no IRR or nothing has yet been recorded.

On the console position that initiated the IRR function, the display shows the current IRR message number. All other positions displays a IRR Busy prompt, indicating that all IRR functions except Record are disabled for them.

Reset

The **RESET** button cancels IRR Playback or Pause, and resets the playback message pointer to the beginning of the most recently recorded message. This button has no effect on the Record mode.

The console ignores this button if another position has already initiated this channel's IRR Playback or Pause function.

The red LED is on while the button is pressed and all IRR prompts are removed from the display.

Record

The **RECORD** button enables the IRR to record all transmit and receive audio on the channel if recording is currently disabled, else it disables IRR recording if it is currently enabled.

The IRR Record mode can be changed with this button by any console at any time. It is never locked out like the other IRR functions described above.

The red LED winks while button is pressed. When button is released, it stays on continuously if channel's IRR Record mode is enabled, otherwise, it goes off.

Operation

In this section:

Receive Operation

When receive activity is present on a channel, that channel's red Call LED blinks. This LED is usually next to the **SELECT** or **INSTANT SELECT** button. If the channel is selected, the activity is heard through the select speaker (or handset/headset). If the channel is unselected, the activity may be heard through the unselect speaker. If the channel is selected, the receive audio level is shown on the level meter under the time/ message display.

The **SELECT VOLUME** and **UNSELECT VOLUME** knobs may be used to adjust the speaker audio levels. Headset earpiece volume is adjusted using the knob on the headset jackbox. Each channel's receive volume may be independently adjusted using the **CHANNEL VOLUME** knob and the channel's **VOLUME ADJUST** button. See the description of the **VOLUME ADJUST** button in *Channel Control Functions* on page 26.

Transmit Operation

Prior to transmitting, be sure the channel is clear. First, select the desired channel/ frequency. If the transmitter is already in use, the channel's red Busy LED is solidly illuminated (distinguishing it from a blinking Call indication). Listen to the select audio, and observe the Call LED to see if there is receive activity on the channel. On channels equipped with PL (coded squelch), press the **MONITOR** button to check for any coded channel activity. Use of **MONITOR** is required by the FCC for systems using PL.

When you are sure the channel is clear, you may transmit by pressing and holding the **TRANSMIT** button, the foot operated Transmit switch, or the Handset PTT switch, depending on options installed. While you are transmitting, the red LED on the

TRANSMIT button is illuminated. The Busy LED on the channels that you are transmitting on also turns on. While speaking, you should speak loud enough, and close enough to the microphone, that you cause the level meter to have most of its bars illuminated.

You may transmit on unselected channels by pressing and holding the desired channel's **INSTANT TRANSMIT** button.

Patching Operation

> **STOP** **Warning!** Patch users should be informed about proper radio procedure before using the patch. First, as in any voice operated (VOX) patch, the first syllable is often lost. It should be assumed that the first word spoken is not heard. Radio operators using VOX should prefix their communication with an audio preamble that is not critical to the message.
>
> After 2 to 3 seconds of silence the patch circuit halts retransmission, so long pauses in a reply should be avoided. It is best to plan in advance what is to be said.
>
> Because the retransmission does not stop immediately after the last word, the other party should hold his reply until 5 seconds have elapsed. It is recommended to use the word "over" so that the other party knows where to time his reply.

Optional - Multiple Patches per Console Position

The 8-Patch Card is an optional card for the Model 4020/4048 CCE units. This card allows 1-8 simultaneous patches to occur between the 24 channels. Each patch can be either simplex (causing the active receive audio of one channel to be transmitted to all the other channels in the patch) or full duplex (simultaneous talk and listen) between any two of the available channels.

The console allows you to cross patch a channel to several other channels or to a telephone line. To bring up the patch, press the **PATCH** buttons for the desired channels. The patch button's green LED is illuminated on the console that requested the patch. All other console positions have their corresponding patch red LED illuminated. You may remove the channels or telephone line from the patch at any time by again pressing the desired **PATCH** button.

Once in operation, the first channel/telephone to have receive activity causes the console to retransmit the activity over all of the other channels/telephone. When the receive activity has stopped on the source channel, transmission on the other channels also stop. You are able to monitor the patch in operation in the normal manner. You may also transmit to any channel in the patch in the normal manner.

Prior to adding a telephone party to the patch, you must first connect with the telephone line using your telephone instrument and dial the desired telephone number. After you

have informed the party, press the **PATCH** button, so that the line becomes part of the patch. If you are answering the telephone via your console, see the section on *Telephone Line Operation*

The Console Programming System (CPS) should be used to program the console patches as Group A through Group H. One console button should be programmed as a group button for each patch desired. Each channel in the system has a programmed patch function button. Eight of the console buttons have been programmed as patch group buttons, labeled "A" through "H". A patch group is set up by pressing a patch group button and, while holding it down, selecting the patch function button of each channel that is to be put into the patch group. When a patch group button is pressed, its green LED turns on. When the channel patch button is pressed, its green LED flash. When the patch group button is released, the green LED on the patch buttons on the selected channels stay on. Whenever a patch group button is activated, the green LEDs for the patch buttons of the selected channels flash to indicate which channels are part of the particular patch. When a patch button of a patched channel is pressed, that channel is removed from the patch and the green LED of that channel patch button turn off. If the patch function button of a nonpatched channel is pressed without holding down a patch group button, the channel is added to the lowest order patch group programmed at the console. When a patch group or a channel has been selected by a console, the patch group and channel patch button LEDs on other positions in the system also turn on. This indicates that the patches are in use and are not available to those positions. If buttons for patches in use are pressed, a beep is issued with no other action occurring. This ensures that no channel can be included in more than one patch at a time.

Once in operation, the receive transmit activity functions work as previously described for standard patching.

Intercom Operation

There are two buttons used for the interconsole intercom, the **CONSOLE I'COM CALL** button and the **CONSOLE I'COM TALK** button. Pressing the **CONSOLE I'COM CALL** button causes the called console to alert its operator by emitting a beep and displaying "I-CALL". To talk to the called console, press and hold the **CONSOLE I'COM TALK** button while speaking into the microphone. While the intercom is on (monitored) at your console, the green LED on the **CONSOLE I'COM TALK** button is on. While you are talking over the intercom, the red LED on the **CONSOLE I'COM TALK** button is on.

The intercom is turned off by again pressing the **CONSOLE I'COM CALL** button that was previously pressed.

There may be several **CONSOLE I'COM CALL** buttons but only one **CONSOLE I'COM TALK** button. The **CONSOLE I'COM CALL** button is usually labeled with the name of the console positions it calls, such as Fire Call or EMS Call.

Console intercom audio is muted during incoming RX calls and outgoing TX calls.

Paging Operation

See *Paging Glossary* on page 149 for an explanation of paging nomenclature.

Instant Call Operation

(Requires Option 930-0028)

The **INSTANT CALL** buttons provide the simplest operation available. To tone out or page personnel or apparatus, simply push the buttons labeled with the desired items. Each button represents one or more page sequences (call stack) used to access the labeled items.

When a button is pressed, its LED goes on, indicating that its transmission is pending. A maximum of 64 buttons may be pending at one time. Usually, the transmission begins with the press of the first button and proceeds in the order that the buttons were pressed. After the button's pages have been transmitted, its LED begins to blink, providing a checklist of transmitted calls. If the **INSTANT CALL** button is located on the upper or expansion 60-button panel, a blinking red LED indicates the page sequence was aborted and never sent. If additional Instant Call buttons are pressed before the first paging sequence has completed, they are treated as a continuation of the paging sequence.

If the optional **PAGE SAFETY** button is present, transmission of pending Instant Calls do not begin until this button is pressed. When the first **INSTANT CALL** button is pressed, the **PAGE SAFETY** button's LED begin blinking. When the **PAGE SAFETY** button is pressed, its LED goes on solid until all pending Instant Calls have been transmitted. If the Page Safety feature is not programmed, paging begins immediately upon pressing the Instant Call button.

The **PAGE CLEAR** button may be used to immediately terminate any Instant Call currently being transmitted. This also clears all pending Instant Calls and their LEDs, returning the encoder to the idle state.

> **Note** With button-based consoles, an Instant Call is an aggregate of one or more individual pages; each page is defined to transmit on its own independent collection of channel/frequency pairs. This is different behavior than IntegratorRD consoles, where the entire Instant Call is defined to use the same set of channels on their associated frequency for all pages contained in its stack.

Instant Call Types

Transmit	Attempts to keyup on currently selected channel(s).
Select-Then-Transmit	Clears any existing channel selections, then selects its programmed channel(s), then attempts to keyup on selected channel(s).
Instant Transmit	Keys up on defined channel(s) only; does not modify currently selected channel(s).

For **Select-Then-Transmit** or **Instant Transmit** types, one or more channels may be used to transmit the page; channels that support a Tone Frequency may specify the specific frequency to use for this Instant Call page stack.

Manual (Keypad) Operation

The keypad and control buttons of the encoder are normally used for paging seldom called, nonemergency equipment, or personnel which may not merit an individual **INSTANT CALL** button. Typical operation from the keypad is probably from a list that matches an individual to a keypad entry code and a send channel.

Manual pages are created by using the keypad to enter a leading digit (corresponding to a page type), followed by the capcode (correctly formatted based on the page type). Keypad entries can only be made while the encoder is idle (not transmitting or programming). As digits are entered, they appear in the display. An invalid entry displays the Page Error message and aborts that entry. If a mistake was made in entering the code, the **PAGE CLEAR** button clears the entry without affecting previous entries. These pages are either sent directly as a single page, or entered into queue/stack for sending in a sequence.

SEND Button

After keypad entry, the **SEND** button must be pressed to transmit the page. While the page is being transmitted, the button's LED is on. As the page is transmitted, the display shows the pager code and any related paging messages or prompts, such as "talk", "dlay", or "kpad". After the page has been transmitted, it can be repeated by pressing the **SEND** button again. Each manual page transmits on the channels and frequencies defined with the corresponding leading digit.

ENTER Button

Several paging codes may be accumulated into the keypad paging stack prior to sending. Stacking pages makes more efficient use of transmission time since the stack sequence takes less time than if each individual page were transmitted separately. Stacking is performed by making an entry and pressing the **ENTER** button. The display then shows the slash (/) terminator character and the **ENTER** button LED blinks. This shows there is an entry in the keypad stack. This process can be repeated for several paging codes. The stack is quite large and it is unlikely that the limit will ever be reached, but if the stack does fill, the display does not change when the **ENTER** button is pressed.

The keypad paging stack is transmitted by pressing the **SEND** button. Transmission of the stack begins with the first code entered and proceeds in the order of entry. As each pager code is transmitted, its code appears in the

display. After the page has been transmitted, the paging stack may be repeated by again pressing the **SEND** button.

> 📝 **Note**   Manual page stacks cannot be mixed with Instant Call page stacks.

CLEAR ENTRY Button

If a manual page keypad entry is in progress, the **CLEAR** button is used for aborting the current keypad entry sequence. If a manual page keypad entry is not in progress, this button clears the page stack and turn off all page button LEDs. If a paging transmission is in progress, this button also aborts the transmission.

> 📝 **Note**   With button-based consoles, manual pages transmit on the channels and frequencies defined with the corresponding leading digit. This is different behavior than IntegratorRD consoles, where manual pages transmit on the currently selected channel(s).

Talk Time

If Voice Message Talk Time is enabled, the transmitter stays on for a configurable amount of talk time after a page is sent. This allows the user to announce a voice message to the paged audience. Talk Time is associated with each Leading Digit.

Any attempt to transmit while the system is busy during paging (or other transmissions) is either cancelled or queued, depending on how the console's BTI (Busy Transmit Inhibit) switch is configured.

Channel IRR Operation

This feature is only available with the Universal Dual Channel Card (950-9819 or 950-9820). On the UDCC, each channel is equipped with its own Instant Recall Recorder.

This IRR can store 64 seconds of audio on each channel for each megabyte of installed memory. The UDCC can be configured to disable its channels if the IRR memory is missing or bad, or to allow the IRR feature to be optional such that the channels still functions if the IRR memory is missing.

Each channel's IRR memory is organized by message units. Each message consists of one reception (Call) or transmission (PTT) which has passed through the channel while the Record mode was enabled. The length of each message is variable and there can be up to 64 messages per channel.

The IRR memory behaves in a circular fashion, such that when the end of the memory is reached, it seamlessly wraps around and continues recording or playing from the beginning of the memory. When a new recording overwrites a previously recorded message, that entire message is lost to make room for the new recording. If a new recording overwrites itself, then only the overwritten portion is lost.

All messages are numbered sequentially from 01 to 64. When 64 is reached and a new message is recorded, the numbering starts over at 01 and the oldest message is erased. The next new message replaces message 02, the one after that 03, and so on.

The current message number is displayed on the console during all **PLAY/PAUSE** and **REWIND** functions. It is cleared by the **RESET** function.

IRR playback is controlled by the **PLAY/PAUSE**, **REWIND**, and **RESET** functions; IRR recording is controlled by the **RECORD** function (these are described in *Channel IRR Functions (Models 4018 & 4118 Only)* on page 33).

Telephone Line Operation

When properly equipped, your console may be used to answer and originate telephone calls. Normally you have several control buttons for each telephone line at your console: **SELECT/CALL**, **ON HOOK / OFF HOOK**, **V ADJ/MUTE**, **PATCH** and **INSTANT XMIT**.

Answering Calls

Incoming calls are indicated by a blinking Call LED and a ringing type sound on your speaker. The line may be answered (off hook) by pressing the line's **ON HOOK/OFF HOOK** button so that the button's red LED goes on. In order to talk to the telephone party, you must first select the line by pressing that line's **SELECT** button. Then you use the normal **TRANSMIT** button. Alternatively, you may use the line's **INSTANT XMIT** button. Unless the line is selected, normal two-way conversation is not possible. You may use the **MUTE** button in a similar way to a telephone hold button if you desire.

Originating Calls

Call origination requires that your console is equipped with an encoder used for tone dialing. To place a call, select the telephone line (using the **SELECT** button) and pick up the line (using the **OFF HOOK** button). Next, use your encoder to enter the telephone number you wish to dial. Most likely, you need to enter a special first digit to access the tone dialing format of the encoder. Send the entered number to the telephone line by pressing the **PAGE** or **SEND** button on the encoder. The number is then dialed.

To disconnect a call (On Hook), press the **ON HOOK/OFF HOOK** button so that the green LED is illuminated.

Telephone Patching

The telephone line's **PATCH** button is used to establish a radio/telephone patch. Prior to patching, the telephone line must first be connected (by pressing the **OFF HOOK** button). Next, press the **PATCH** button of all channels to be included in the patch, including the telephone line's **PATCH** button. The red LEDs of active **PATCH** buttons are illuminated. When the patch is completed, first turn the patch off by again pressing the active **PATCH** buttons, then disconnect the telephone line (by pressing the **ON HOOK** button).

Enhanced Telephone Line Operation

Overview

When the Telephone Control selection in CPS is selected, the Model 4018/4118 console telephone interface features hands-free enhanced telephone operation with automatic audio routing between the telephone and radio channels. With this selection, the numeric keypad is always live in the DTMF mode when the telephone is off hook. The Telephone Control selection also incorporates a new answer/hold mode. This enhanced telephone channel type is configured as a Local dual channel card connected to a telephone line through a Zetron Series 4000 Phone Coupler. To facilitate the enhanced telephone option, the **SELECT**, **ON HK/OFF HK**, **MUTE**, and **PATCH** buttons have the following functionality.

Select (Answer/Hold)

The initial press of this button takes the telephone off hook and route the receive audio from all radio channels to the console Unselect speaker. Console Mic audio is sent to the telephone transmit output and the telephone receive input audio is sent to the console Select speaker or headset. The console is now connected to the telephone line in a full-duplex live audio mode. The button's green LED is lit when the console audio is directed to the telephone. The button's red LED flashes when receive telephone audio is present if the telephone is on hook. If the telephone is off hook, this button's red LED indicates if the telephone is locked out by another position. Although the receive audio from the Selected radio channels no longer goes to the Select speaker, these radio channels still remain Selected. To indicate this, the green LED on these Selected channel's **SELECT** button flashes.

Pressing this button again toggles the telephone into the Hold mode. All receive and transmit telephone audio is then blocked, but the telephone remains off hook. The button's green LED flashes when Hold is active. If no other phone channels are active (off hook and not in Hold mode), all radio audio is routed back to its normal destination and the green LED on all Selected radio channel's **SELECT** button returns to the on state.

Only one console position can acquire a telephone channel by taking the telephone off hook with the **SELECT** (**ANSWER/HOLD**) button as described above. All other positions are then denied access to that telephone channel. On these positions, this button's red LED is on and the green LED is off to indicate this mode. If the first position puts the telephone into Hold mode, the green LED on all other positions also flash. The telephone channel can now be acquired by any position. The first console to toggle the telephone channel out of the Hold mode acquires the telephone and lock out all other positions. This technique can be used to transfer a call between console positions.

As soon as one position takes a telephone off hook, all other positions mute that telephone channel's receive input audio. When the telephone channel is put back on hook (hung up), all positions then unmute that telephone channel's receive input audio. This function was previously called **SELECT** and is still programmed that way in CPS.

ON HK/OFF HK (Release)

Pressing this button hangs up the telephone and route all radio audio back to its normal destination. This button has no effect if the phone is on hook (it cannot be used to take the phone off hook), or if this console is not the one that has acquired the phone channel (the locked out positions cannot hang up a telephone channel). On all positions, the button's red LED is constantly on whenever the telephone is off hook. This function was previously called **ON HK/OFF HK** and is still programmed that way in CPS.

Mute (MIC Mute)

Pressing this button toggles the console Microphone off and block the transmit audio to the telephone. The receive audio from the telephone is still heard on the console. Pressing the button again restores the Microphone audio to the telephone. This button's red LED blinks when the Mic audio is muted. If the telephone channel has been locked out by another position, this button has no effect. This function was previously called **CHANNEL MUTE** and is still programmed that way in CPS.

Patch (Patch XMIT)

Pressing a telephone channel's **PATCH** button enables its audio to be patched to any other channel. The telephone receive audio is sent to the Unselect speaker while it is patch enabled. The telephone must be off hook and not in Hold mode before pressing the **PATCH** button else it is ignored. Hanging up a patched telephone channel by pressing the **ON HK/OFF HK (RELEASE)** button also cancels the patch. The **PATCH XMIT** button can be used to allow the operator to talk over all patched channels (including the telephone). This is the only transmit function that allows the Mic audio to go to the telephone, but only if the telephone is patched. If the telephone is not patched, it acts like the other transmit functions described below.

Using the Telephone

Receiving a Call

When the telephone is on hook, any incoming audio is routed to all Consoles' Unselect speaker and cause the **ANSWER** button's red LED to flash. Therefore, make sure the Unselect speaker volume control is turned up loud enough so that the ring signal can be heard. Pick up the telephone by pressing the **ANSWER** button and then talk and listen to the calling party just like on a regular telephone. When your conversation is finished, press the **RELEASE** button to hang up the telephone.

Originating a Call

Press the **ANSWER** button to take the telephone off hook, wait for the dial tone, and punch in the desired telephone number to call on the console's numeric keypad. A leading digit is *not* required here since the console knows that this is a telephone channel. When the called party answers, talk and listen just like on a regular telephone. When your conversation is finished, press the **RELEASE** button to hang up the telephone.

Putting a Call on Hold

Pressing the **ANSWER/HOLD** button while the telephone is off hook toggles the telephone to the Hold mode. The telephone receive and transmit audio is blocked and all radio audio is routed back to its normal destination. The console telephone remains off hook but does not pass any audio. Press the **ANSWER/HOLD** button again to return the telephone to the active mode (this can be done by any position).

Transferring a Call to Another Position

To allow another console position to acquire a telephone channel currently yours, put the telephone into Hold mode. When the other position toggles that telephone channel out of Hold mode, it will acquire and activate it, and lock out all other console positions (including the original position) from that telephone.

Transmitting on a Radio Channel While the Phone is Active

Pressing any transmit button or external PTT switch while the console phone is active temporarily places the phone in the Hold mode described above, reroute all the audio to the radio channel, and initiate the radio transmit. When the transmit button is released, the telephone returns to the active state with the Mic and Select audio switched back to it. Note however, that during this radio transmit, the telephone channel cannot be acquired by another console position.

Setting up a Phone Conference

When one telephone is active and a second telephone is taken off hook, the first telephone is automatically put in the Hold mode. If the first telephone is returned to the active mode, both telephones are active and the receive and transmit audio is routed to both telephones. This can be repeated with as many additional telephones channels as are available. All radio channel receive audio continues to be sent to the Unselect speaker as long as any telephone is active.

Manual Paging on a Phone Channel

Any paging format can be sent over the phone by entering the page (including the leading digit) on the numeric keypad before taking the phone off hook, taking the phone off hook (by pressing the **ANSWER** button), and then pressing the **PAGE SEND** button. The Rotary Pulse dial format is not available on the 4018/4118 Consoles.

Instant Call Paging on a Phone Channel

When an Instant Call page designates a specific telephone channel as the destination, the following actions occur if the telephone is on hook.

The telephone is taken off hook.

The specified Key Up delay (if any) occurs.

The console waits up to 1.5 seconds for dial tone audio.

If audio is detected, the specified page is sent, and the telephone becomes active as described above.

If no audio is detected, the telephone is put back on hook and the page aborted. If the designated telephone channel is currently locked out by another position, the page is aborted. When an Instant Call page designates the selected channels as the destination and at least one telephone channel is active, the page is immediately sent to the telephone. No KeyUp delay occurs. If an Instant Call page designates a mixture of radio and telephone channels as the destination, the radio channels are ignored and only the telephone channels are processed.

ANI Operation

Automatic number identification (ANI) allows a calling party to transmit a unique identification code and have it displayed on the console. ANI operation requires that one of several options be installed. ANI detection may be done on the selected channel only or on a specific channel, or channels. ANI may be DTMF, 5/6 tone, SS1, GE-Star, or MDC-1200 signaling.

There are two modes of ANI operation: Reverse Selective Calling (RSC) and PTT ID. The console ANI operating mode (RSC or PTT ID) is determined by the CPS programming. If neither a primary nor a secondary ANI address is programmed, the console operates in the PTT ID ANI mode. If either a primary or secondary ANI address is programmed, the console operates in the RSC mode.

Reserve Selective Calling Mode

When a valid ANI is received, the console beeps and display the number of the calling unit bracketed by dashes (-XXXXXX-). If the number is longer than six digits, only the last six digits are retained. If the calling unit's channel is muted, it automatically is unmuted to allow the audio from the calling party to be heard (this can be changed with CPS). If additional ANIs are received, the console stores them in an internal ANI stack. A maximum of 24 ANIs can be stored in the stack. The current number of ANIs in the stack is displayed next to the "-XXXXXX-" display.

When the console's ANI stack contains only one ANI, the **ANI REVIEW** button's red LED turns on. If the ANI stack contains two or more ANIs, the LED flashes. Each press of the **ANI REVIEW** button removes the current ANI from the stack (the one being displayed) and display the next oldest ANI until the stack is empty, at which time all ANI information is removed, the time and date are redisplayed, and the **ANI REVIEW** LED goes off.

If a channel has been programmed with an **ANI SOURCE** button, its red LED turns on if the displayed ANI is from that channel. If the ANI stack contains an ANI from a channel but it is not currently being displayed, that channel's LED blinks. When there are no more ANIs in the stack for a channel, then its LED turns off. This can be useful if a different channel is selected after one or more ANIs have already been received.

The originating channel for the currently displayed ANI unit may be selected by pressing the **ANI SELECT** button if present. If two or more channels are simul-selected, all incoming ANIs are reported for the lowest-numbered selected channel.

PTT ID Mode

There are two types of ANI in PTT ID mode: emergency ANIs and PTT ID (nonemergency) ANIs. An emergency ANI is identified by a leading asterisk (*), hexadecimal E, preceding the ANI. A PTT ID (nonemergency) ANI is any ANI whose first digit is not an asterisk.

For an incoming ANI to be considered valid, at least three digits (excluding the leading *) must be received within one second. If more than six digits (excluding the leading *) are received during this one-second window, only the last six are retained.

Emergency ANIs

When a valid emergency ANI is received, it is placed into the ANI buffer. Then the channel unmutes, the ANI is displayed, the red LED on the channel's **ANI SOURCE** button begins to flash, and an operator alert sounds. The last three actions continue until the **ANI REVIEW** button is pressed.

If multiple emergency ANIs are received, the most recent one is displayed and all others are put into the ANI buffer. The operator alert continues sounding, and the appropriate **ANI SOURCE** button LEDs continue flashing until all emergency ANIs in the buffer have been reviewed.

The emergency ANI operator alert temporarily stops when a call is received on any channel so that the call can be heard. The alert resumes when all call activity stops. This behavior continues until all emergency ANIs have been reviewed.

Nonemergency ANIs

When a valid nonemergency ANI is received, it is placed into the ANI buffer. Then the ANI is displayed, and the green LED on the channel's **ANI SOURCE** button begins to flash. The last two actions continue for five seconds or until the ANI call stops, whichever is longest. Pressing the **ANI REVIEW** button immediately removes the ANI from the display and turns off the LED.

All incoming PTT ID ANIs are ignored if an unreviewed emergency ANI exists in the ANI buffer.

ANI REVIEW Button

The six most recent ANIs are permanently stored in an ANI buffer in the order they are received. When a new ANI is received, it replaces the oldest ANI in the buffer.

The contents of the ANI buffer can be reviewed at any time by pressing and holding the **ANI REVIEW** button. While the button is held, the appropriate **ANI SOURCE** button

LED is lit to indicate the channel on which the displayed ANI was received. Each press and release of this button displays the next ANI in the buffer. When the end of the buffer is reached, the display shows "END". The next press of the **ANI REVIEW** button starts this sequence again.

The red LED on the **ANI REVIEW** button begins blinking when an emergency ANI is received and continues to blink as long as any unreviewed emergency ANIs exist in the ANI buffer.

An **ANI REVIEW** button must be defined with CPS programming if the console is to receive any ANIs.

ANI SELECT Button

With ANI shown in the display, pressing **ANI SELECT** selects the channel that the ANI arrived from.

ANI SOURCE Button

The **ANI SOURCE** button itself does nothing. Its LEDs are used to indicate the type of ANI received and the channel it was received on. The green LED indicates a PTT ID ANI. The red LED indicates an emergency ANI. A flashing LED indicates an ANI that has just been received or that has not yet been reviewed. When pressing the **ANI REVIEW** button, a solidly lit LED indicates the channel and type of ANI.

Clock/Calendar Setting

The system time and date may be set only at the supervisor's console. The time and date used throughout the console system is synchronized from the clock on the supervisor's console.

Clock setting is initiated by pressing the **CLOCK SET** button on the front panel (if equipped).

The first time the **CLOCK SET** switch is pressed, the seconds unit on the time display begins to flash. The seconds unit may be adjusted up or down using the **CHANNEL VOLUME** knob. When the desired number of seconds have been set, press the **CLOCK SET** switch again.

In a similar manner, each time you press the **CLOCK SET** switch, another time unit begins to flash in the display, until the entire time and date have been set. The units are adjusted starting with seconds, then minutes, hours, month, day, and finally year. The display automatically shows the date once the three units of the time of day have been set. You may distinguish a time display from a date display by the right hand most decimal point, which is illuminated only when the date is being displayed.

Operational Messages

During normal operation, it is common to have messages show up on your display. These usually occur only briefly. The following table shows the various operational messages and their meanings.

Table 3: Operational Message Meanings

Message	Meaning
NoOption	You attempted to access a non installed feature option.
TxTimeOut	The three minute transmission timeout expired on a system channel. This may be due to a stuck transmit switch. This is displayed at all consoles in the system.
Priority	The transmission has been overridden by another console using Priority Transmit.
Busy	You attempted to transmit on a channel that was already in use by another console or parallel remote. This is sometimes caused by rapid transmissions using the TRANSMIT button.
I-CALL	You have been called by another console over the console intercom.
I-BUSY	You tried to use the console intercom when it was already in use by another console.
TakeOver	The console has been taken over by the supervisory console. Your keyboard is inoperable until released.
Release	The console has been released by the supervisory console, and your keyboard is now operable.
PROGRAM	The console is in the program mode and is waiting to be loaded with data.
DnLoading CPS	The console is in the program mode and is being loaded with data.
UpLoading CPS	The console is in the program mode and is uploading its configuration to the PC.
** DONE **	Your console is in the program mode and has been loaded with data.
CPSdataErr	The console CPS data is missing or invalid.

Diagnostics Messages

In the event that the continuous system diagnostics finds a problem, the time/message display of the appropriate consoles display a message. This message indicates the general nature of the problem. To aid service personnel, you should record the error message with the time of day. For information on clearing the diagnostics message, see the description of the **Diagnostics Reset** button. Table 4 shows the various diagnostics messages and their meaning.

Table 4: Diagnostic Message Meanings

Message	Meaning
Disconnect	Your console is not communicating with the system. Your console will not operate until the problem is corrected.
SeeLog	Diagnostics information has been printed on the diagnostics log.
SeeCIC	The Console Interface Card for your console is not communicating with the system. Your console will not operate until the problem is corrected.
THXnnn	An improper condition exists on your console. nnn is a three-digit, decimal number that Zetron can use to help isolate the condition. Be sure to record it. This does not usually prevent normal operation.
CardErr	The programming of channel configurations at your console position does not match the cards plugged into the common control equipment. Channels that are affected will not operate until the problem is corrected.
PageErr	An invalid paging parameter has been entered.
PageFull	The maximum number of Instant Call pages assigned to a button has been exceeded (64).

Operating IntegratorRD Workstations

This chapter presents an overview of IntegratorRD Workstations, a description of each button function, and a detailed operational description of IntegratorRD.

For similar information about Series 4000 button-based consoles, see *Operating Button-Based Consoles* on page 17.

In this chapter:

- *Control Components* on page 51
- *Operation* on page 59
- *Console Messages* on page 143
- *Updating the Console Configuration* on page 144

Control Components

The operator controls the IntegratorRD Workstation using the following components:

- Model 4217B Audio Panel or Model 4219 Console Audio Interface
- Video display (standard or touch screen)
- Mouse or trackball
- Keyboard

The Audio Panel, Console Audio Interface, Video Display, and mouse/trackball are primary controls and are described in this section. The keyboard is a secondary control and is addressed in *Operation* on page 59.

Audio Panel

The Model 4217B Audio Panel provides the select and unselect monitor speakers with volume controls, ports for various microphone options, a multiformat tone encoder, a 24-

hour time display, a level meter, and buttons for transmitting and monitoring on the selected channel.

The knob labeled Function can be used with the volume adjustment screen button to increase or decrease the console audio volume.

Console Audio Interface

The Model 4219 Console Audio Interface provides the select and unselect monitor audio to a pair of external, amplified speakers, ports for various microphone options, a multiformat tone encoder, a 24-hour time display, and a level meter. Volume, channel select, and transmit control functions are supplied through the IntegratorRD software user interface.

When used, the Model 4219 completely replaces the Model 4217B at the console position. The new, slim design of the Model 4219 helps to clear the desktop and provide the operator with the maximum free workspace. The Model 4219 is only 15" wide, by 1.75" high, by 6" deep. It can placed under most LCD display monitors.

The Model 4219 has no front panel controls. The operator uses controls provided on the monitor touchscreen by IntegratorRD to operate the Model 4219. This means that if the monitor fails for some reason, the operator is left with only being able to transmit on the last channel that was selected.

Video Monitor Display

The CRT or LCD screen is divided into six regions:

- IntegratorRD Workstation display screen configured for the Model 4048 CCE is shown in Figure 10. The channel status display region of the console screen supports a total of 36 channel displays, of which 24 are full size and the remaining 12 are condensed.

  The full size displays are located in 4 rows of 6 at the top of the channel status display area, and the 12 condensed displays are contained in 2 rows of 6 below the full size region. The condensed channel displays contain the same information as the full size display, just in a smaller size. Once the channel selector has been highlighted either by touch or with the left mouse button, you can change various parameters of the channel, such as the volume level, frequency select, etc.

- The System Region is a display-only region that presents the Zetron logo, clock time, and various system messages.

- The System Menu Button Region contains menu buttons for the Group Select and miscellaneous menus, such as buttons to activate the Paging and Auxiliary I/O menus.

- The Status Line is used to display various text messages for specific menu operations.

- The Main Function Button Region maintains the primary channel control function buttons. With the exception of the Simul-Select button, these buttons act on the currently highlighted Channel Selector Box.

- The Secondary Function Button Region shows secondary channel control functions. When one of the System Menus is activated, the secondary control functions are overlaid with the menu buttons applicable to the selected system menu.

Figure 10: Graphical Interface for IntegratorRD Workstation
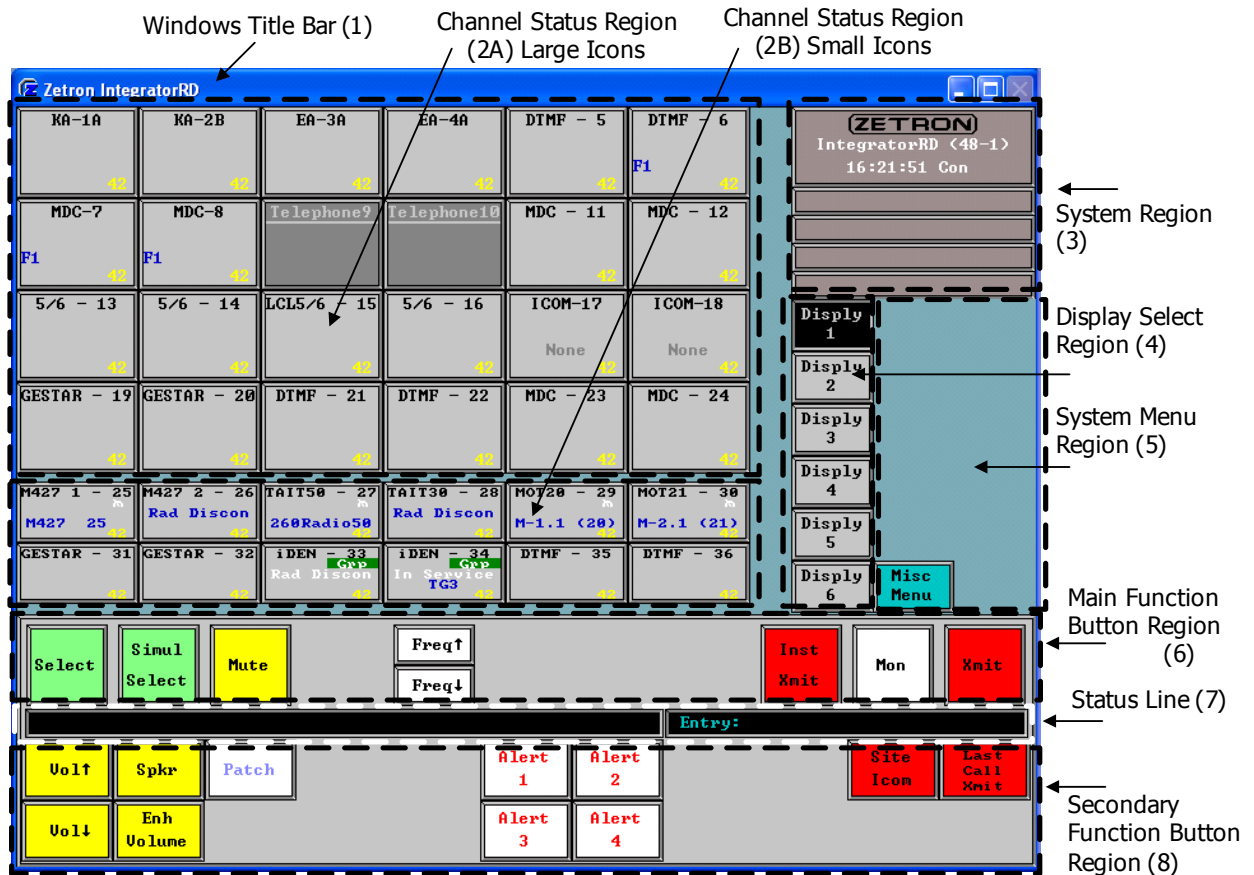
Table 5: Graphical Interface Regions

Region	Purpose
1. Windows Title Bar	Used to minimize/resize the window, reload the configuration, and change settings.
2. Channel Status	This shows up to 36 channels with status (Channel Selector). When a channel is highlighted, users may change channel parameters such as volume level. The large icon region (2A) shows up to 24 channels as large icons. The small icon region (2B) shows up to 12 channels as small icons. Channels may be arranged in any order. Both large and small icons present the same operational information.
3. System	This display-only region shows the Transmit Indicator (the Zetron logo), Common Control Type, CIC Position Interface, Clock, Time Sync Source, Alarms, all Mute Timer, and various system messages.
4. Display Selection	These buttons are used to swap between the six possible channel setup displays.
5. System Menu Buttons	This contains the menu buttons for the system, such as Group Select, Group Transmit, Miscellaneous, Auxiliary I/O, and others.
6. Main Function Buttons	This contains the primary channel control buttons. The buttons may be single- or dual-function control. These commands are always displayed.
7. Status Line	This displays various text messages for specific menu operations. This region also shows Paging and Subscriber entries.
8. Secondary Function Buttons	When one of the System Menus (Region 5) is active, the secondary channel control functions are overlaid with the menu buttons applicable to that system menu.

Channel Status Regions

The Channel Status Region is a grid, six wide by six high, that displays up to 36 channel status modules. Each status module contains ten fields of information on five lines as shown in Figure 11. (The Channel Status Region for iDEN, Sprint Direct Connect, and MAP27 are described later in this document.)

Figure 11: Ten Fields of Information Presented for Each Status Module

The ten fields of information are described in the following paragraphs.

1. **Channel Name:** The channel name provides a descriptive title for the channel module. When the channel is selected, the background color is green.

2. **Call/Ring/Recorder Indication:** When the channel is receiving audio, the word "Call" displays in the field in red letters on a white background. When no audio is

being received, this field is blank. If this channel has been configured as a telephone channel, the field shows "Ring" in red letters on a white background any time an incoming telephone call is received.

If the channel supports "Channel Check" instant recall recording, the field shows the status of the recall recorder if no call is being received. The following examples illustrate the various types of statuses that are displayed:

Ir->2	Message number 2 is being played.
Ir||2	Playback is paused in message number 2.
Ir<<1	Message 1 has been selected using the IRR Prev button, playback is paused.
Rec	Message recording has been enabled. This is temporarily displayed.
Off	Message recording has been disabled. This is temporarily displayed.

3. **Monitor Indication:** This field displays "MON" when a CTCSS channel is unsquelched through the use of the Monitor or Instant Monitor buttons (screen or audio panel). Transmitting on this channel removes the monitor condition.

   For EDACS channels, a white antenna icon appears when transmitting on the channel, and a yellow key indicates the EDACS radio is in Private mode.

4. **ANI ID:** When the channel receives ANI signaling, the ANI alias or the ANI digits display in this field. If more than one ANI is pending on this channel, and the console is programmed for reverse selective calling (RSC), the ANI identification is highlighted with a blinking "bullet" at the right side of the field. You can use the "Review ANI" button to review all pending or queued ANI codes.

   If the channel is programmed for PTT ID type ANI, the ANI alias or ANI digits are temporarily displayed. You can use the "Review ANI" to review all queued ANI codes.

   For EDACS channels, this field displays the system.

5. **(Conventional) Selected Freq:** For conventional radio channels with a multiple frequency transmitter and/or receiver, this field displays a 3- to 10-character label for the selected frequency (typically F1, F2, etc.). Refer to *Operation* on page 59 for information about selecting a channel frequency.

   (EDACS) User ID: For EDACS trunked channels, the field displays the selected individual or group ID.

6. **(Conventional) Selected PL or DVP Coded/Clear:** For channels with multiple PL, the field shows a 3- to 7-character label indicating the selected PL. For channels with Coded Speech Control enabled, the field shows the label indicating Coded or Clear.

7. **(Conventional) Repeater/Main-Standby/Telephone Status:** For channels with a multistate repeater, the field shows the state of the repeater.

   If the channel is configured to use the "main/standby" output of the channel card, the field displays "MAIN" or "STBY".

   For telephone channels, the field shows "TEL" if the telephone is connected (off hook). The field is blank when the telephone is disconnected (on hook).

8. **Channel Busy Status**: When a transmitter is keyed by this console, the field changes to "BSY", displayed in white characters on a red background. When transmit is released, the "BSY" is removed. If another console transmits on this channel, the "BSY" displays in red letters on a gray background.

9. **Channel Patch Status**: When the console enables a cross-channel patch for the channel, the field changes to "Pat" in white letters on a blue background. If another console has enabled a patch for the channel, the field displays in blue letters on a gray background.

   If your console includes the Enhanced Patch (Model 4020/Model 4048) option, the field indicates patch with "P-n" where "n" is the patch group number.

10. **Mute/Volume Level**: A decimal number between 0 and 99 indicates the channel unselect audio volume. The value is displayed in yellow against the gray background. If this channel is muted, the field displays a yellow background with no volume level shown. When the channel volume is "enhanced" using the "Enhance Volume" function button, this field blinks.

📝 **Note**   IntegratorRD "remembers" several aspects of a channel's status, even when restarting the application or reloading a configuration. IntegratorRD remembers each individual channel's volume level, mute state, select state, selected frequency, all-mute state, current display, monitor A routing, and monitor B routing.

System Region

The System Region, shown in Figure 12, displays various system status messages including the transmit status (Zetron logo), alarm messages, console messages, and the 24-hour time.

Four types of system status indications or messages are presented in the system region:

- **Logo** — When a Channel Transmit is active, the Zetron logo displays in red.

- **System Time** — The 24-hour clock is updated each second. To set the current time, refer to *Operation* on page 59.

- **Alarm Messages** — When an alarm input is activated, the associated alarm message is queued for display. Alarm messages are shown in red, blinking letters on a white background. These messages are acknowledged (and removed) by pressing the Alarm Acknowledge button (see *Operation* on page 59).

- **Console Messages** — Initialization, operational, and diagnostic messages are reported in the three message lines below the alarm messages. Diagnostic messages are displayed for a predetermined amount of time and require no action. Refer to *Console Messages* on page 143 for a list and descriptions of these messages. When the All Mute or Disable CAD function is activated, the All Mute or Disable CAD timer is displayed on message line 3.

Figure 12: The System Region
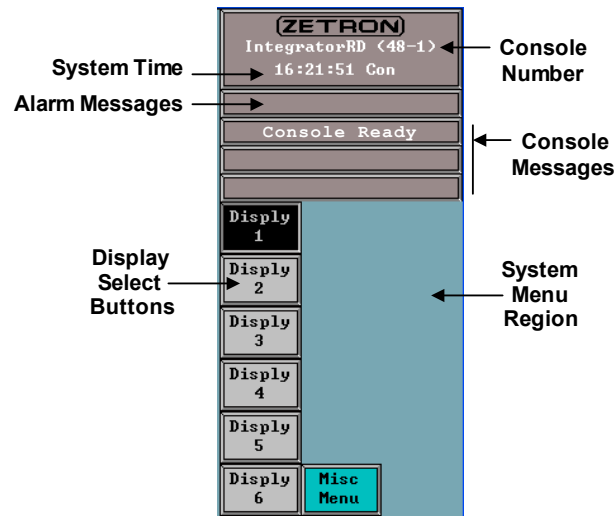
System Menu Region

The following can be configured for this region: Auxiliary I/O Menu, EDACS Review, Miscellaneous Menu, Page Select, Patch Groups, XMIT Groups, Select Groups, Recall Recorder Menu, iDEN Call Menu, SDC Call Menu, MAP27 Call Menu, MAP27 Dispatcher Menu, and MDC-1200 Call Menu.

Pressing a menu button replaces the buttons in the Secondary Function Button Region with menu selection buttons. Also included are six display setup selection buttons for recalling different screen configurations. Refer to *Operation* on page 59 for a description of the menu functions.

Main Function Button Region

The Main Function Button Region maintains control buttons, which are available at all times. These buttons are active regardless of the state of the menus. The region can be configured to display up to 22 control functions.

Secondary Function Button Region

This region displays control functions not included in the Main Function Button Region. When a menu is selected, these control buttons are replaced by the menu buttons. The region can be configured to display up to 22 control functions.

Mouse/Trackball

If an optional three-button mouse or trackball is included with the system, it may be used to select the on-screen buttons. The buttons on the mouse or trackball are programmed for specific console functions:

Left Mouse Button: Button operations and Channel Highlight.

Middle Mouse Button: Instant Select on a channel.

Right Mouse Button: Instant Transmit on a channel or display
                      the button default label on a command button.

Refer to *Mouse Operation* on page 60 for a description of the mouse operation.

Keypad

The Model 4217 Audio Panel has two keypads as shown in Figure 13.

Figure 13: Keypad and Function Key Regions
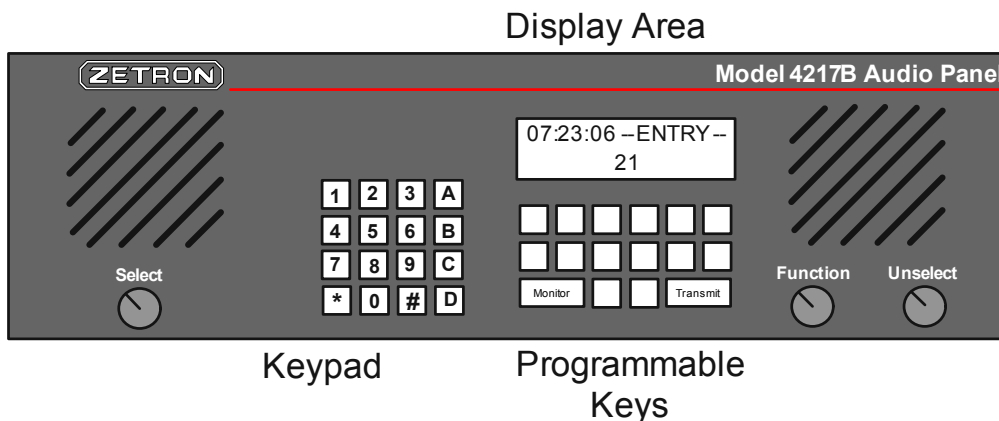
The Paging keypad is used for entering console numeric information, such as encoder digits and telephone numbers.

The Function keypad is a configurable group of keys used to perform most functions that are available using the screen control buttons. Typically, these keys are configured for transmit, paging, and auxiliary I/O functions.

Up to three optional Model 4115 Expansion Panels can be used to expand the number of programmable function keys.

Operation

In this section:

Logging On and Off

As with other Integrator applications, logon is controlled by the UMS Logon utility. See the *User Management System Product Manual* for details.

Logging off using the UMS Logon utility closes all of the open Integrator applications to which you were logged on. To close individual applications, use their exit option.

STOP **Warning!** Do not use Windows XP "fast user switching" feature. Fast user switching can cause instability in IntegratorRD.

Switch User

When a user is logged in and IntegratorRD is running, in order for switch user to be allowed, the new user must have permission to access the current display used in IntegratorRD.

Button Functions

This section describes touch screen and mouse operation. Touch screen and mouse operations are performed by pressing the appropriate button. For example, you activate a menu by touching the menu display button on the touch screen, or by moving the mouse pointer over the menu button and clicking the left button. In addition, for system or channel control functions that are programmed on the keyboard, pressing the appropriate key performs the same operation as touch screen or mouse operation.

Mouse Operation

Table 6 describes the console functions performed by a three-button mouse or trackball. If a two-button mouse is used, the middle mouse button function is not available.

Note The functions described in *Table 6* assume that the PC mouse buttons are not assigned to actions other than the standard button click for each button. In particular, the middle mouse button cannot be assigned in Windows for "Double Click" and still operate the Instant Select function described below.

Table 6: IntegratorRD Workstation Mouse Functions

Button	Function	Description
Left	Button Operations and Channel Highlight	The left mouse button (or a tap on a touch screen) is used to "press" screen buttons, such as menu function and system and channel functions. The left button is also used to highlight a Channel Selector Box for subsequent control operations. A double-click (or a double-tap on a touch screen) on a channel icon selects that channel.
Middle	Instant Select	The middle mouse button is used for "instant" selecting of a channel. A channel may be selected simply by moving the mouse over one of the Channel Selectors and pressing the middle mouse button.
Right	Instant Transmit or default label display	The right mouse button performs different functions depending on what you click: • When the mouse is located over a Channel Selector and the right mouse button is pressed, PTT is keyed for that channel. The status of the channel selects and the channel highlight does not change. • When the mouse is located over an empty area in the Channel Status Region and the right mouse button is pressed, PTT is keyed for Select channels. The status of the channel selects and the channel highlight does not change. (This function must be enabled in IntegratorRDPS. See **Mouse Right-Click Transmit** in **Miscellaneous Parameters**.) • When the mouse is located over a command button and while the right mouse button is pressed, the default label for that button is displayed.

Contact Zetron and ask for IntegratorRD Workstation technical support for further instructions on setting up your mouse.

Touch Screen Operation

Typical touch screen installations with Windows translate a "touch" into a left button mouse click as described above. The touch screen does not have the facility to recognize the middle or right button functions.

Positioning and Sizing the Display Window

The console window is positioned and sized using typical Windows functions.

Selecting "Always on Top"

The **Always on Top** feature prevents the console window from being overlaid by other application windows. This is useful to ensure that the console application window is never obscured by another program. Selection of the Always on Top feature is made from a button in the Miscellaneous Menu.

Activating and Deactivating the Window Title Bar

The window title bar is disabled from the Miscellaneous Menu button labeled **Toggle Border**. This feature is typically used when operating the monitor at 800 x 600 resolution with RDPS **Screen Size** option set to "800 x 600" or at 1024 x 768 resolution with RDPS **Screen Size** option set to "1024 x 768". At this resolution, the full console window is not visible when the title bar and window border are active.

Window Position

The console window is positioned by clicking and dragging window title bar.

Window Size

To make the console screen full size, right click the mouse on the Windows background and select **Properties** from the pop up menu. Select the **Settings** the dialog sheet tab, and move the slider on the screen area control to at least "800x600" setting for RDPS **Screen Size** option set to "800 x 600" or "1024x768" setting for RDPS **Screen Size** option set to "1024 x 768".

> 📝 **Note**   If Chinese or Arabic is selected, RDPS Screen Size option is set to "1024x768".

It is possible to "crop" the console window when the title bar is active by clicking and dragging any of the borders, as is typical with other Windows applications. Resizing the window adds scroll bars to the right and bottom borders for repositioning the screen within the window.

System Menus

The System Menus are accessed using the menu buttons arranged in the Menu Button Region of the screen. Pressing a system menu button activates the selected menu.

The Miscellaneous Menu (Misc. Menu) contains functions for configuring the channel display area, performing console takeover, intercom operations, and "File Maintenance" functions for updating the console configuration.

Setting up System Functions (Misc. Menu)

Pressing the **Misc. Menu** button replaces the Secondary Function Button Region with a menu containing the following selections: **Exit**, **Always on Top**, **Toggle Border**, **iDEN Reset**, MDC-1200 channels' squelch status (**MDC Squelch***), Console Intercom (**Consol Icom**), Console Takeover (**Consol Takovr**), **Test Message**, and File Maintenance (**File Maint**).

* **MDC Squelch** requires an optional license.

To return to normal operation from the first Misc. Menu screen, press the **Misc. Menu** button. From each of the submenus, press the **Exit**, **Save/Exit**, or **Cancel** buttons to return to the previous menu.

Recalling a Channel Display

The six operator programmable display configurations are recalled directly from the dedicated system menu buttons. Begin by pressing the button of the setup to be loaded. The display is automatically changed to the recalled setup. These six display buttons are accessible if the user currently logged in has UMS IntegratorRD display permission to access them.

> **Note** The first setup (Setup 1) is reloaded any time the IntegratorRD software is reloaded (power cycle to the PC, PC reset, etc.).

Refer to the *Updating the Console Configuration* on page 144 for a description of the steps necessary for configuring the channel displays.

Setting the Clock Time

If the system is not operating with an external clock source (Netclock or IRIG-B), the PC time at Position 1 is the master time and date. To change the time, right click on the PC time display (lower right on menu bar). Select **Adjust Date**, and set the date and time as desired. The console clock display updates to reflect the new setting. The other positions reflect the new setting within the next minute.

Terminating the Application (Misc. Menu)

The **Exit** selection in the Miscellaneous Menu terminates the IntegratorRD application. To access this function, the user must have the UMS IntegratorRD exit permission.

Performing a Console Takeover (Misc. Menu)

In the Miscellaneous Menu, the selection **Consol Takovr** allows the console to inhibit or takeover operation of any of the other consoles in the system. This menu selection displays a list of buttons for all other consoles. Pressing one or more of these buttons prevents an operator at the selected console from performing any functions. The takeover button displays in black when a console has been taken over. A white button indicates normal console operation. To access this function, the user must have the UMS IntegratorRD supervisor control permission.

Using the Console-to-Console Intercom (Misc. Menu)

The **Consol Icom** selection in the Miscellaneous Menu allows you to place a "call" to another Zetron console position. This menu presets console intercom buttons for the other consoles in the system. Pressing one or more of these buttons connects an audio path between your console to those selected. To talk to the called console, press the **Consol**

Icom TALK button while speaking into the microphone. The intercom is turned off by pressing the console intercom button again.

Console-to-console intercom audio is heard on the Select speaker. Intercom audio is muted when there is RX or TX activity on the Select channel.

Updating the Console Configuration (Misc. Menu)

Also located in the miscellaneous menu is the **File Maintenance** selection. This selection allows you to save existing or load new configuration files. Refer to *Updating the Console Configuration* on page 144 for a complete description.

Performing a Group Select (Select Groups)

After a select group has been defined, it is possible to select multiple channels with a single button press. To do this, press the **Select Groups** button, and press the desired select group button. At this time, all channels for this group are simultaneously selected.

Performing a Group Transmit (XMIT Groups)

After a transmit group is defined, it is possible to key multiple transmitters with a single action. To do this, press the **XMIT Groups** button. To activate the transmit function, press and hold the desired transmit group button. Release the button to deactivate transmit. Performing a Group Transmit does not affect the channel selections.

Performing a Group Patch (Patch Groups)

After a patch group is defined, it is possible to patch multiple channels with a button press. To do this, press the **Patch Groups** button and press the desired patch group button. At this time, all channels for this group are patched.

If your console includes the Enhanced Patch (Model 4020/Model 4048) option, you may also select the patch number to which the patch connects. The line below the System Menu Buttons show "Patch Path" and a number. Using the **Patch Path** (up/down) buttons in the Group Patch menu or the **Patch Path <n>** control button, you may enter a number between 1 and 24. Then when you select a patch group, the channels are assigned to the patch number you entered. In this way, you may have multiple simultaneous patches enabled.

Sending Pages (Page Sel)

If the system is configured for paging, the **Page Sel** button activates a menu used to enter and send pages. Refer to *Paging Functions* on page 73 for a complete description of the paging functions. See *Paging Glossary* on page 149 for an explanation of paging nomenclature.

Reviewing Auxiliary I/O Conditions (Aux I/O)

The state of contact closure inputs and outputs are reviewed by pressing the **AUX I/O** button. The Secondary Function buttons are replaced with a list of input and output

buttons displayed in red, green, or gray. Active inputs are displayed in red or green, inactive inputs are displayed in red, green, or gray. The actual color is dependent on the configuration.

Up to 18 names are displayed at a time. Additional inputs or outputs can be displayed by pressing the **Next** and **Prev** buttons. The total number of inputs or outputs in the system is determined during configuration. If fewer than 18 are defined, then the **Next/Prev** buttons are not present.

In addition to reviewing inputs, outputs are activated from this display. To change the state of an output, locate the output to be changed. Then, pressing the button changes the state of the output. The color of the output changes to indicate the state of the output. Outputs may be programmed (during system configuration) to be momentary or toggle.

iDEN Call Functions

Refer to *iDEN Functions* on page 87 for a complete description of iDEN operation.

MAP27 Call Functions

Refer to *MAP27 Functions* on page 109 for a complete description of MAP27 functions.

MAP27 Dispatcher Functions

Refer to *MAP27 Dispatcher (427) Functions* on page 125 for a complete description of MAP27 Dispatcher functions.

MDC-1200 Call Functions

Refer to *MDC-1200 Functions* on page 130 for a complete description of MDC-1200 functions.

Channel Control Functions

The following is a description of all channel control functions. Depending on the system configuration, either all functions or a subset of these functions is available. The location of the function buttons on the CRT or LCD screen is also configurable. In the following sections, the name enclosed in parentheses is the button label as shown on the CRT or LCD screen.

Prior to performing a channel control function, the channel module must be highlighted by pressing the Channel Selector. Pressing a selector zone places a blue-green highlight on the channel. At this point, the channel functions can be changed.

Refer to following subsections for descriptions on these topics:
- *Specifying the Selected Channels* on page 66
- *Specifying the Unselected Channel Audio Destination* on page 66
- *Performing Channel Transmits* on page 67

Specifying the Selected Channels

Selecting a Channel (Select)

After the desired channel module is highlighted by pressing the Channel Selector button, the channel is selected by pressing the **Select** button. All other channels are unselected. The channel name is displayed with a green background to indicate the channel is selected.

Performing a Simultaneous Select (Simul Select)

To select more than one channel at a time, press the **Simul Select** button. Then press the desired Channel Selector. Repeat this step for each channel to be simultaneously selected. When complete, press **Simul Select**. Pressing **Select** on a channel already selected deselects the channel.

The next time **Select** is pressed only the highlighted channel module is selected; all others are "unselected."

Specifying the Unselected Channel Audio Destination

If your console is configured with auxiliary audio speakers using the Monitor A/B audio paths (such as the Zetron Model 27 Speaker Panel), you may direct the audio from unselected channels to one of three destinations: the console Unselect speaker; Monitor A speaker; or Monitor B speaker.

The **Monitr A** and **Monitr B** buttons are used to select the auxiliary speaker output.

Pressing **Monitr A** over the highlighted channel redirects unselected channel audio to the Monitor A audio path. The volume setting for the channel displays with a green background color. Pressing **Monitr A** again returns audio to the standard unselect speaker and the volume display returns to the normal background.

Pressing **Monitr B** over the highlighted channel redirects unselected channel audio to the Monitor B audio path. The volume setting for the channel displays with a dark blue background color. Pressing **Monitr B** again returns audio to the standard unselect speaker and the volume display returns to the normal background.

Performing Channel Transmits

Transmitting on the Selected Channel(s) (Xmit)

The **Xmit** button keys the transmitter for the selected channel.

Transmitting on an Unselected Channel (Inst Xmit)

By default, the **Inst Xmit** button is used to transmit on the currently highlighted channel module. This does not change the channel selection. Instant Transmit can also be performed with the right button of the mouse or trackball. Position the mouse pointer over the desired channel module and press the right mouse button to transmit. This does not change the currently highlighted channel.

> ⚠️ **Caution!**   When using the mouse button right-click method to perform an instant transmit, you must be careful not to inadvertently click the left button or scroll wheel on the mouse (or track ball). If you do so, the transmission will stop. You will need to release all buttons and then right-click on the channel module again to resume transmission.

However, if IntegratorRD is programmed with Instant Transmit Toggle enabled, then the **Inst Xmit** button acts as a toggle. With **Inst Xmit** toggled on:

- Channel windows are in instant transmit mode (touching/clicking on the channel windows will instantly transmit on that channel while the channel window/button is depressed). Transmission will end upon release of this channel window/button.
- The only way to select a single channel is to double-click the channel button. As a side effect of the **Inst Xmit** toggled on, a brief instant transmit will occur during the double-click.
- There is no way to highlight or simul-select channels. To perform either of these tasks, first toggle **Inst Xmit** off.
- If Mouse Right-Click Transmit is enabled, touching (or left-clicking on the mouse) anywhere in the unassigned channel area will initiate a transmit on currently selected channels. While this is by design, touch screen users may not realize the consequences of this feature, as it is easier to accidentally transmit if they rest their finger on the unassigned channel area.

Transmitting on the Last-call Channel (Last-call Xmit)

The **Last Call Xmit** button is used to transmit on the channel that received the last call.

Issuing a Patch Transmit (Patch Xmit)

The **Patch Xmit** button allows you to key up only the channels that are part of a cross-channel patch. This button only functions when there is no call activity on any of the patched channels.

Patch Xmit may be performed on MAP27 and conventional channels. If **Patch Xmit** is used to setup the call, the ringing on MAP27 cause mutual busy; therefore preventing the operator's transmit. Transmit works after the call on MAP27 channel is already setup.

Transmitting Alert Tones (Alert 1 through Alert 4)

When one of the **Alert** buttons is pressed, an alert or test tone transmits over all selected channels. When the **Alert** button is released the tone transmission stops.

Talking to a Remote Base Station (Site Icom)

Pressing and holding the **Site Icom** button provides an audio connection (through the microphone) to a remote base station site without transmitting over the radio channel. This acts like an intercom between the console and service personnel at the base station site.

Performing a Priority Transmit (Pri'ty Xmit)

The **Priority Transmit** button allows a console position to override any other console transmitting on a specific channel.

The **Priority Transmit** button only works on a console position where the user has the UMS IntegratorRD supervisor control permission.

> **Note**   Priority Transmit does not work on MAP27 channels.

Selecting Base Station Functions

Selecting Frequency, PL, DVP Coded/Clear, and Repeater Modes

Channel functions, such as Frequency Select, PL Select, DVP Coded/Clear, and Repeater Enable are preprogrammed. The state of these functions is displayed in fields 4, 5, and 6 of the channel module.

Eight buttons associated with these three fields are **F↑** and **F↓**, **PL↑** and **PL↓**, **DVP Coded** and **DVP Clear**, and **Rptr ON** and **Rptr OFF**.

To change the frequency of a multiple frequency base station, highlight the channel module and use the **F** buttons to change the frequency selection. Use the **PL** buttons to select the Private Line function of the channel. Use the DVP Coded/Clear buttons to select Coded or Clear function of the channel.

To enable a base station repeater, press the **Rptr ON** button. To disable the repeater, press the **Rptr OFF** button.

Enabling a Channel Monitor

Monitoring an Unselected Channel (Inst. Mon)

Pressing the **Inst. Mon** button disables the coded squelch (PL) decoding for the highlighted channel.

Monitoring the Selected Channel(s) (Mon)

Use **Mon** button to disable the coded squelch of the selected channel(s).

Changing the Channel Volume

Adjusting Channel Volume Level (Vol.)

The volume of a channel, relative to the other channels, is adjusted using the **Vol. Adj.** button and the Function knob on the Audio Panel. Press the **Vol. Adj.** button and rotate the Function knob to change the volume level for the highlighted channel.

The **Vol.** ↑ and **Vol.** ↓ buttons may also be used to increment and decrement the channel volume without using the Function knob.

The percentage volume level is displayed in the channel module. The volume may be increased or decreased in increments of three.

Selecting and Adjusting the Enhanced Volume Level (En Vol.)

The Enhanced Volume button temporarily sets the volume to a preset level. Typically, this is used to boost the volume level of a channel temporarily. When the volume of a channel is enhanced, the volume level indication blinks. The setting of the enhanced volume can then be set using the Function knob or the "Vol." buttons. Pressing the **En Vol.** button a second time returns the volume setting to the normal level.

Muting a Channel Volume Level (Mute)

Press the **Mute** button to reduce the channel audio volume to a preset value. Press the **Mute** button again to return the volume to its original level.

Muting all Active Channels (All-Mute)

Pressing the **All-Mute** button causes all unselected channels to mute (be reduced in level). When the mute is activated, all channel volume displays change to yellow with no volume level value. At the same time, a countdown timer is started and displayed in the system message area. The timer indicates the amount of time before the all-mute condition is automatically removed. Pressing the **All-Mute** button again causes the mute to cancel. When All-Mute is canceled or expired, if RDPS Recall Muted Channels option is enabled,

the previously muted channel(s) stay muted; otherwise, all channels return to their previous audio levels, not-muted.

> **Note** Radio channels and telephone channels behave differently in regards to muting. A radio channel cannot be muted while the channel is selected. A telephone channel may be muted while it is either selected or unselected.

Patching Channels

Performing a Cross-Channel Patch (Patch)

A patch can be set up between channels or from a channel to a telephone line. Any number of channels can be included in a patch.

To include two or more channels in a patch, press the **Patch** button and then highlight (by clicking with the left mouse button or simply touching the channel box) the channels involved in the patch. If you want to remove a channel from the patch, click or touch the channel box again. When completed selecting the channels in the patch, press the **Patch** button again.

To transmit on the patch, use the **Patch Xmit** key (see *Issuing a Patch Transmit (Patch Xmit)* on page 67).

During operation, the first channel that receives activity causes the received audio to be transmitted on all other channels in the patch. Individual radios, pre-PTT IDs, are not transmitted between patched channels. The console channels, pre-PTT ID, if enabled, are sent immediately following transmitter keying.

You can select multiple, simultaneous patches. When you set up a patch using the **Patch** button, the patch indication for the channel shows "P-1," indicating that the channel is patched using Patch Path 1. If there are multiple Patch Paths set up, the **Patch Xmit** key transmits on the designated Patch Path only.

> **Note** Patching is not supported with MAP27 channels. Patching may also exhibit issues with other types of trunked radio channel as well (P25 and Fleetsync) when they are operating in "Full Duplex" mode.

If you want to set up another patch, use the **Patch Path <n>** control button to change the patch path number before highlighting the channels in the patch.

Clearing a Patch

The **Patch Clear** button may be used to clear the patch selection from all channels involved in a patch.

Selecting Speaker or Headset Audio (Spkr/Hdset)

If your console includes an auxiliary headset (and associated jackbox), you can direct the console audio by using the **Spkr/Hdset** (Speaker Headset) button. When the headset is plugged in, the button shows **Hdset** in black, indicating that the audio is directed to the headset. If you would like to redirect audio to the console speakers without removing the headset, press the **Hdset** button. The button indicates "Spkr" in the yellow.

> **Note**   Zetron does not support the use of amplified headsets with Series 4000 console equipment.

Controlling the Intercom

The control of the Zetron Intercom Interface is performed from a dedicated intercom channel control box using the following control buttons:

Icom Select
Icom Review
Icom Talk
Door Open

The intercom channel control box shows intercom call requests in the ANI field. Below this, in the channel control fields, the current selected intercom is shown. If no intercom is selected, then "None" shows for this field.

> **Note**   It is not necessary to change the highlighted or selected channel to perform intercom control functions. All other channel control functions, such as volume control and muting, are available.

Answering the Intercom

When the intercom call button is pressed on the remote intercom panel, the console displays the label of the intercom and can optionally "beep" through the console speakers to alert the operator. Pressing the **Icom Select** button automatically selects the intercom that just called in. After the intercom is selected, the **Icom Talk** button can be pressed to talk back to the selected intercom speaker.

If a remote door latch is associated with the intercom, the **Open Door** button can be used to activate the latch. When the conversation with the selected intercom is complete, press and hold the **Icom Select** button for approximately 2 seconds to deselect the intercom. It now shows "None." Press the **Icom Review** button to clear the intercom label.

Reviewing Multiple Intercom Calls

If more than one intercom location requests attention, the console queues these requests. In this case, the label of first request shows with a flashing "bullet" indicating a pending request.

The **Icom Review** button can be used to scroll through the list of intercom requests. As they are reviewed, the requests are removed from the list.

Miscellaneous Channel Functions

Using a Telephone Channel (Answer Hold, Phone Release, and Hook Flash)

The **Answer Hold**, **Phone Release**, and **Hook Flash** buttons are operational for telephone channels only. The Answer Hold button is used to connect the phone line and for placing the line on hold. The Phone Release button is used to disconnect the phone line. While connected (or off hook), field 7 of the phone channel module display indicates "TEL." While disconnected, (on hook) display field 6 is blank.

The hook flash button, **Hook Flash** is used to send a hook flash to the telephone system. This button only operates when the phone channel is off hook.

Activating the Channel Main/Standby Output (Main/Stby)

For channels that have been configured for General main/standby operation, the **Main/ Stby** button allows you to toggle the state of the main/standby output for a channel. The state of the output is shown in the channel module display.

Reviewing and Clearing ANI IDs (Review ANI)

When the console is called from a field unit using ANI (automatic number identification), the unit number displays in field 4 of the channel display module (just below the "call" indication). If your console is programmed for "reverse selective calling" (RSC type) ANI, you can clear the ANI by pressing the **Review ANI** button. If more than one RSC ANI has been received, the ANI identification displays a flashing "bullet" appended to the ID. The **Review ANI** button removes the displayed ID and display the next ID. Up to 24 ANIs may be queued before being reviewed.

If your console is programmed for the PTT ID type ANI, the last six ANIs received is kept. When an ANI is received in this mode, it is displayed for up to 5 seconds or until the ANI call stops—whichever is longer.

All entries are placed in an ANI buffer, and can be reviewed by using the **Review ANI** button. As you press the **Review ANI** button, the next most recent ANI displays. When you have exhausted the list, the display blanks. In this mode, nonemergency ANI displays in green on a white background. Emergency ANI displays in red on a white background. When an unreviewed emergency ANI is pending, the console generates a warning tone to alert the operator. The tone stops when the last emergency ANI is reviewed. The tone is interrupted when a call is received on any channel so that the call can be heard.

Enabling a Priority Marker (Pri'ty Marker)

Pressing this button enables the priority marker for the currently highlighted channel. This function emits a brief tone over the radio channel every few seconds while radio traffic is idle. While the priority marker is enabled, the Channel Status module shows "PrM" in the "busy" field.

Enabling Channel Self Repeat (Self Repeat)

If the currently highlighted channel is set for full duplex operation, this button enables self repeat. This causes calls received on the channel to be automatically retransmitted on the same channel. When self repeat is enabled the label "SRpt" shows in the "busy" field.

Paging Functions

See *Paging Glossary* on page 149 for an explanation of paging nomenclature.

The IntegratorRD Workstation can be optionally configured to generate multiformat pages. These **Instant Call** pages can be arranged by category or group for easier selection of a particular page.

Access to the paging functions is through the **Page Select** menu button. Pressing this button displays either a set of page groups (up to 16) and the prompt "Select Page Group" on the status line, or a page number entry display line and a list of preprogrammed Instant Call page buttons.

If the page group screen is displayed, press one of the page group buttons to view the Instant Call page screen(s). Up to 16 Instant Call page buttons are displayed on a screen. Pressing the **Next** or **Prev** button is used to view additional screens.

As a page is transmitted, the Dispatch Console display indicates "-PAGE-". When the page is complete, the time is returned to the display.

To remove the paging menu, press the **Page Select** button. If you are performing manually entered pages, you can return to the instant call button menu by pressing **Exit**.

If a PTT request is made during paging, IntegratorRD will sound a go-ahead-to-talk beep when paging is complete (if configured to do so). This provides an audio cue to the dispatcher that the system is ready for voice transmission.

Manually Entering a Single Page

Manual pages are created by using the keypad to enter a leading digit (corresponding to a page type), followed by the capcode (correctly formatted based on the page type).

Alternatively, you can select the **Manual Page** menu from the **Page Select** menu, which displays a numeric keypad and an entry area on the screen. The digits can then be entered from either the screen keypad or the Audio Panel keypad. As digits are entered, they are displayed on the Audio Panel display or on the status line next to the "Entry:" prompt.

These pages are either sent directly as a single page, or entered into queue/stack for sending in a sequence. Manual pages are stacked/queued by using the **Page Enter** key.

When all pages have been entered, the page is sent by pressing the **Page Send** button. Manual pages transmit on the currently selected channel(s). To resend the page, press **Page Send** again. The entry of another page number replaces the previous entry.

To clear an incorrectly typed single manual page, press the **Page Clear** button.

> **Note**　With IntegratorRD consoles, manual pages transmit on the currently selected channel(s). This is different behavior than button-based consoles, which transmit on the channels and frequencies defined with the corresponding leading digit.

Manual Page Alerts

If you enter a leading digit that is configured as a page alert, the type of alert generated depends upon the second digit. If the second digit is 0, a custom alert is used (the custom alert was defined during software configuration). If the second digit is 1-9, IntegratorRD generates a pre-defined alert. The following list identifies which alert is generated based on the second digit:

> 0 : Custom beep
> 1 : Slow siren
> 2 : Fast siren
> 3 : Hi/Lo warble
> 4-9 : Fast warble

Stacking Multiple Manually Entered Pages

To stack multiple pages for transmission on the same channel(s), enter each page number using the numeric key, and press the **Page Enter** button. After all page numbers are entered, press the **Page Send** button. The pages transmit in the order in which they were entered. As each page is sent, the page number is displayed in the page number entry line. To resend the page stack, press the **Page Send** button.

To clear the page number stack, press the **Page Clear** button.

Selecting Instant Call Pages

Instant Call pages are selected by pressing one or more of the buttons displayed in the lower part of the screen. Initially, Instant Call *stack* page buttons are blue. When an Instant Call stack page button is first pressed, the button color changes to green, indicating that it is in the queue to be transmitted. As the page is transmitted, the page button color changes to red and the associated page number(s) display on the "Page Num" line of the display as

they are transmitted. When the page is complete, the selected page name color changes to black.

> **Note** Stacked Instant Call pages is a licensed feature. If you press a stacked IC call button and the console just beeps but nothing else happens, this indicates that your console position does not have the required license.

Instant Call page buttons in white

Instant Call stack page buttons in blue

If additional Instant Call buttons are pressed before the first paging sequence has completed, they are treated as a continuation of the paging sequence.

> **Note** With IntegratorRD consoles *prior to version 5.0*, the entire Instant Call is defined to use the same set of channels on their associated frequency for all pages contained in its stack.
>
> *After version 5.0*, the behavior of IntegratorRD consoles is like that of button-based consoles, where an Instant Call is an aggregate of one or more individual pages; each page is defined to transmit on its own independent collection of channel/frequency pairs.

Page Safety

If the **Page Safety** key has been enabled, any instant call page key that is pressed just selects the page for sending. As many as 32 pages may be selected for sending in one batch. The pages are not sent until the **Page Safety** key is pressed. Once this key is pressed, IntegratorRD will send pages in the same order in which they were selected, pushing each subsequent selection to the end of the selection list. If the number of pages you request exceed 32, when you click the **Page Safety** key integrator RD will post a "Page Q Full" message in the System Region and play a denial beep.

> **Note** You may mix individual Instant Call pages with Instant Call stack pages. Be aware that for the purposes of counting pages towards the 32-page stack limit under Page Safety, all of the individual pages programmed under an Instant Call stack page get counted.

During the selection process, if a page must be removed from the list, prior to version 5.0 it may simply be unselected from the list and it is removed. Starting with version 5.0, if

Page Safety is in use, you must use the **Page Clear** button to remove an Instant Call page stack from the list before it is transmitted (regular individual Instant Call pages behave as they did before). If the same Instant Call page stack is subsequently added again, it is pushed to the back of the list. When **Page Safety** is pressed, pages are sent in the order of their final selection.

If the Page Safety feature is not programmed, paging begins immediately upon pressing the Instant Call button.

Instant Call Types

Transmit	Attempts to keyup on currently selected channel(s).
Select-Then-Transmit	Clears any existing channel selections, then selects its programmed channel(s), then attempts to keyup on selected channel(s).
Instant Transmit	Keys up on defined channel(s) only; does not modify currently selected channel(s).
Channel Setup	This is a non-transmitting Instant Call Page type that is used for transmitter setup such as changing talk groups. iDEN, SDC, and MAP26 channels cannot be selected for a Channel Setup because their channel setup requires a transmit.

For **Select-Then-Transmit** or **Instant Transmit** types, one or more channels may be used to transmit the page; channels that support a Tone Frequency must assign a single tone frequency to always be used with that channel—it may not be modified by the Instant Call page.

⚠️ **Caution!** The **Transmit** page type cannot be used as the first page in an Instant Call stack because it does not select a channel and the console will not transmit the page if no channel is selected. If there are any **Select-Then-Transmit** pages in the stack they should be placed early in the stack with the **Transmit** type pages following after them.

Prior to version 5.0, the failure of a page early in the stack would abort the rest of the remaining pages in the stack. With version 5.0 and later, pages that cannot be sent (for whatever reason) are skipped over and the remaining pages are transmitted.

Talk Time

If Voice Message Talk Time is enabled, the transmitter stays on for a configurable amount of talk time after a page is sent. This allows the user to announce a voice message to the paged audience. A talk timer is displayed in the System Region and Status Line (see Figure 10 on 53); it indicates the remaining talk time.

Instant Call Talk Time is associated with each Instant Call page stack. Manual Paging Talk Time is a single value, programmed per position, that is automatically applied to manual page stacks.

Keyup During Paging

Any keyup attempt during a paging sequence cancels any programmed talk time.

A keyup without a matching keydown, held until after the paging sequence has completed, is considered a PTT request, which will override any programmed Talk Time. If Talk Time is programmed, the PTT request is handled by keeping the current paging channels keyed up until PTT is released. If no Talk Time is programmed, the PTT request shall first keydown the current paging channels, then keyup on all currently selected channels.

Terminating a Page

To terminate a page stack in progress, press the **Page Clear** button. This stops the page transmission following the completion of the current page.

Paging Messages

If an error is detected during a page, one of the messages shown in Table 7 is displayed.

Table 7: Paging Messages

Message	Description
"Page TX Fail"	Either no channels are selected for the page or an error occurred during a transmitter key up.
"Capcode Error"	The requested page capcode is invalid (incorrect digits, incorrect length).
"No Option"	A paging format has been programmed that the Model 4217B Audio Panel has not been optioned to support.
"No Format"	The specified leading digit is not programmed.
"Encdr Timeout"	The paging encoder did not respond to the page request in the allotted time.
"Addr Not Prg'd"	The custom call address is not programmed.

Auxiliary I/O Functions

With the Auxiliary I/O option, the IntegratorRD Workstation can monitor external on/off inputs and control external on/off outputs. Up to 72 outputs and 240 inputs can be controlled.

An additional eight inputs and eight outputs are available on the Model 4217B Audio Panel. These inputs and outputs are position-specific and independently controlled from each position.

Inputs can be used to monitor alarms or show the condition of door actuators. Outputs can control gates, doors, lights, and other devices.

Reviewing Input and Output Conditions

The current status of all contact closure inputs and outputs are reviewed by pressing the **Aux I/O** menu button. The Secondary Function Button Region is replaced with a list of input and output buttons. Up to 16 input and output buttons are displayed on one screen. Use the **Next** and **Prev** buttons to view additional inputs and outputs.

The color of an input or output name indicates its status. The specific color is programmable, so refer to the system configuration information. To remove the alarm status display and return the Secondary Function buttons, press the **Aux I/O** menu button.

With the release of version 5.0, the activation of an AUX Input that is designated as an alarm results in an entry being added to the Call History list in order to automatically log the date/time of the event. When the alarm is acknowledged, that event is logged in Call History as well.

Activating an Output

Auxiliary outputs are programmed for control by IntegratorRD. These outputs can then be activated and deactivated from the screen or keyboard. To change the state of an output, use the **Next** or **Prev** buttons to locate the desired output button and press the output button to change the output state. The configuration of an output is preprogrammed to either toggle or momentary contact.

Controlling Inputs and Outputs from the Model 4115 Expansion Panel

Auxiliary I/O status and control can be performed on an optional Model 4115 Expansion Panel. Inputs and Outputs are shown on independent button locations, or a combined input and output, controlled from a single button location. Combined I/O buttons have a green LED, representing the status of the input, and a red LED, representing the status of the output. Pressing the associated button changes the status of the output.

Spare Outputs

A console has eight spare outputs that can be programmed through RDPS. The spare outputs may be programmed as momentary or toggle functions. If spare outputs 5, 6, 7, and 8 are not programmed, they function as follows:

Spare Output 5	Turns on when a call indication is received on selected channel.
Spare Output 6	Turns on when PTT is activated.
Spare Output 7	Reverse Selective Calling mode: turns on when an ANI is displayed on the console. PTT ID mode: turns on when an emergency ANI is displayed on the console.
Spare Output 8	Reverse Selective Call mode: produces a 500-millisecond pulse whenever an ANI is decoded by the console. PTT ID mode: produces a 500-millisecond pulse whenever an emergency ANI is decoded by the console.

Alarm Functions

The IntegratorRD workstation can also monitor contact closure inputs for the purpose of reporting alarm conditions. These alarms are queued and displayed as each alarm input is activated. The alarms can be optionally programmed to activate a contact closure output when an alarm is acknowledged.

Acknowledging Alarm Messages

When an alarm input is activated, a single line message is displayed on the screen, just below the system logo. The message displays in blinking red letters on a white background. If multiple alarms are received, they are queued in the order received. Only one message displays at a time.

The **ALARM ACK** button is used to acknowledge the alarm currently displayed. Pressing the **ALARM ACK** button removes the current alarm message and, if there are additional alarm messages, displays the next alarm in the queue. When all alarms have been acknowledged, the alarm message display is blanked.

Reviewing the Alarm Status

In addition to the alarm message display, the current status of all alarm inputs can be reviewed by pressing the **Aux I/O** menu button.

To remove the alarm status display and return the Secondary Function buttons, press the **Aux I/O** menu button.

Using a Telephone Channel

One or more telephone channels can be configured in the system using a Series 4000 Phone Coupler and a Local Channel card. The IntegratorRD Workstation provides dialing capabilities using the keyboard, the audio panel keypad, and the Paging menu.

Answering a Phone Call

When a phone channel indicates "Ring," the channel is answered by doing a mouse center click on the channel or highlighting (right clicking) the channel and pressing the **Answer/ Hold** button. The console is now connected to the phone line in a full duplex live audio mode, and the audio from all radio channels is routed to the console unselect speaker. On the M4217 audio panel the 16 key pad will be live with DTMF digits when pressed.

To complete the call, press the **Phone Release** button to disconnect the phone line.

Originating a Phone Call

Press the **Answer/Hold** button to take the phone Off Hook, wait for the dial tone, and punch in the desired phone number to call on the console numeric keypad on the M4217 audio panel keypad. Note that a leading digit is NOT required here since the console knows that this is a phone channel. When the called party answers, talk and listen just like

on a regular telephone. When your conversation is finished, press the **Phone Release** button to hang up the phone.

Muting the Mic During a Phone Call

The **Mute** button, that normally mutes the Receive audio of the Highlighted channel, will function as a Mic Mute when a Phone Channel is Off-Hook and Highlighted. Pressing **Mute** will overlay a yellow block on the phone channel's volume percentage number and cause the BSY indication to turn off. The phone caller can still be heard, but operator mic audio will not be delivered to the caller. Pressing **Mute** a second time will reverse the operation and send operator mic audio to the caller.

> **Note** Although the Zetron Logo stays red and the VU Meter will still indicate mic activity, as long as the BSY is off and the yellow block is showing, no audio is being sent to the caller.

Putting a Call on Hold

Pressing the **Answer/Hold** button while the phone is Off Hook toggles the phone to the Hold mode. The phone receive and transmit audio is blocked and all radio audio is routed back to its normal destination. The console phone remains Off Hook but does not pass any audio. Press the **Answer/Hold** button again to return the phone to the active mode (this can be done by any position).

Transferring a Call to Another Position

To allow another console position to acquire a phone channel currently yours, put the phone into Hold mode. When the other position toggles that phone channel out of Hold mode, it acquires and activates it, and locks out all other console positions (including the original position) from that phone.

Transmitting on a Radio Channel While the Phone is Active

Pressing any transmit button or external PTT switch while the console phone is active temporarily places the phone in the Hold mode described above, reroute all the audio to the radio channel, and initiate the radio transmit. When the transmit button is released, the phone returns to the active state with the Mic and Select audio switched back to it. Note however, that during this radio transmit, the phone channel cannot be acquired by another console position.

Patching a Phone Channel

Pressing a phone channel **Patch** button enables its audio to be patched to any other channel. The phone is put in a mode similar to the Hold mode described above, except that

its receive audio is sent to the unselect speaker while it is patch enabled. To hang up a patched channel, it must first be taken out of the patched mode.

📝 **Note**   The phone must be Off Hook and not in Hold mode before pressing the Patch button, else the **Patch** button is ignored.

The **PATCH XMIT** button can be used to allow the operator to talk over all patched channels (including the phone). This is the only transmit function that allows the Mic audio to go to the phone, but only if the phone is patched. If the phone is not patched, it acts like the other transmit functions described above.

Setting up a Phone Conference

When one phone is active and a second phone is taken Off Hook, the first phone is automatically put in the Hold mode. If the first phone is returned to the active mode, both phones are active and the receive and transmit audio is routed to both phones. This can be repeated with as many additional phone channels as are available. All radio channel receive audio continues to be sent to the Unselect speaker as long as any phone is active.

Manual Paging on a Phone Channel

Any paging format can be sent over the phone by entering the page (including the leading digit) on the numeric keypad before taking the phone Off Hook, taking the phone Off Hook (by pressing the **Answer/Hold** button), and then pressing the **Page Send** button. Note that the Rotary Pulse dial format is not available on the IntegratorRD workstations.

Instant Call Paging on a Phone Channel

The user may program an Instant Call page that designates a specific phone channel as the destination, and program a phone number to dial. If audio is detected, the specified page is sent and the phone becomes active as described above. The phone is put back On Hook and the page aborted if no audio is detected or the designated phone channel is currently locked out by another position.

If an Instant Call page designates a mixture of radio and phone channels as the destination, the radio channels are ignored and only the phone channels are processed.

EDACS Functions

Configuration programming allows you to define the following buttons for controlling EDACS radios.

Button	Function
Clear	Used to clear menu-selected functions.
Special Call	Used to select the special call menu.
I-Call Up	Scrolls through radio-programmed individual call users.

Button	Function
I-Call Down	Scrolls through radio-programmed individual call users.
Emergency	When held for 2 seconds, causes the radio to transmit an emergency call on the current talkgroup.
Emerg. Clear	Clears a receive or transmit emergency condition.
Group Up	Scrolls through radio-programmed talkgroups.
Group Down	Scrolls through radio-programmed talkgroups.
Private Call	Enables/Disables radio encryption.
EDACS Sys	Scrolls through radio-programmed systems.
EDACS Scan	Enables/Disables radio scan.
Scan Add	Adds and adjusts the priority of a talkgroup in the scan list.
Scan Delete	Removes a talkgroup from the scan list.

Refer to *EDACS System Functions* on page 25 and *EDACS Channel Functions* on page 28 for information on the radio control buttons.

EDACS Review

The EDACS Review feature provides a call history for the most recent calls that have been received on EDACS channels (see Figure 14). The call history is capable of displaying the last eight EDACS calls that were received on the Select channel(s) and the last eight EDACS calls that were received on the Unselect channel(s). The calls are sorted based upon the channel's Select/Unselect state at the time that the call was received by the console. When more than eight calls have been received, the oldest one is deleted from the list.

Figure 14: EDACS Call History
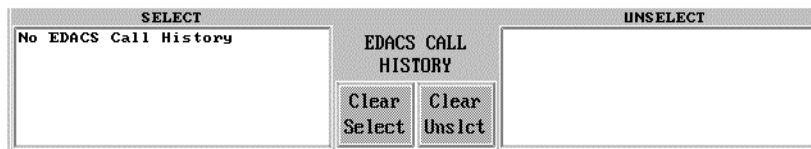
The following are example entries in the EDACS call history windows:

```
10:35:17  GR   7302 to GROUP7
10:32:43  GR   5593 to GROUP9
10:30:27  GR   3735 to GROUP4
10:27:04  GR   7340 to GROUP3
10:22:57  ID    1254 -> GROUP4
10:20:14  GR   8356 to GROUP5
10:19:54  GR   6843 to GROUP9
10:18:03  GR   5651 to GROUP5
10:17:39  GR   2426 to GROUP7
```

Each line of the history shows the time that the call came in, the type of call (GR = group, ID = Individual Call, E* = Emergency), the LID or unit ID of the caller, and the group the call was received on. When an Individual call is received, the word "to" is replaced with "->" to indicate that an Individual call was received on the talk group specified. When a scanned call is detected, the unit ID is replaced with the name of the group on which the call was made.

The Clear buttons shown in Figure 14 can be used to clear the call history for the Select and Unselect lists.

To remove the History display, press the EDACS Review button again.

To use the EDACS Review feature, an EDACS Review button must be defined in RDPS.

EDACS Aliases

EDACS aliases can be programmed in RDPS so that unit ID numbers are replaced with text. The alias system works by looking for numerical digits in the radio's display and attempting to match the digits to a programmed alias. If a match is found, the radio display is replaced with the eight-character alias. This alias is also shown in the EDACS Call History.

These same aliases could be programmed directly into the radio, but any changes or additions would require the radio to be reprogrammed. When aliases are programmed in RDPS, updates can be made without reprogramming the radio. If aliases are going to be used when initiating individual calls, we recommend that the Special Call Names in the radio be programmed to show "LIDnnnnn," where nnnnn is the unit ID to be called. Otherwise, the software may not properly alias the ID.

For example, if you wanted the Special Call Menu items to include individual calls to unit 1005 (alias John) and unit 455 (alias Robert), you should edit the Special Call section as follows:

Call	Name	Type	DIG	Number
1	LID 1005	CAL1	Y/N	1005
2	LID 455	CAL1	Y/N	455

Then, when the dispatcher selects the Special Call Menu and scrolls through the list of available special calls, "LID 1005" is replaced with "John" and "LID 455" is replaced with "Robert".

Channel Status Region

In an EDACS channel window (refer to *Channel Status Regions* on page 54), field 5 shows the eight-character display generated by the EDACS radio. Following these eight characters are two characters that indicate additional radio information. The "•" character indicates that the currently displayed EDACS group is in the scan list. If the group is in the scan list, the dot is displayed. If the group is not in the scan list, the dot does not appear.

The last character in the field indicates scanning is enabled or disabled. When the "S" appears, scanning is enabled. When an Emergency is declared on the connected radio, an "E" displays until the "clear" button is pressed. As long as an Emergency condition exists, the Display blinks in red until the Emergency is cleared.

Channel Check Recall Recorder Functions

📝 **Note**   This section only describes the use of the Channel Check Recall Recorder in Integrator RD.

For Channel Check Recall Recorder on button-based consoles, see *Channel IRR Functions (Models 4018 & 4118 Only)* on page 33.

For Integrator IRR, see *Integrator Instant Recall Recorder Product Manual* (P/N 025-9496).

Channel Check Functionality

The recorder functions of dual channel cards supplied with the optional Channel Check recall recorder are controlled from the console. The Channel Check function records both receive and transmit audio on a per channel basis. Four minutes per channel of recorded audio is available. The following subsections describe the control of the individual channel recording functions.

Enabling Channel Check Recording

The **IRR Enable** button toggles the mode of the Channel Check between recording and off. Either "Rec" or "Off" is displayed in the call field of the channel display. "Off" is temporarily displayed whereas "Rec" is indicated at all times in the absence of receive audio. Turning the record function off does not clear any previously recorded messages. This function is only recommended for supervisor positions.

Playing a Recorded Call

If one or more calls have been received since the Channel Check function was enabled, the **IRR Play** button plays the message recorded on the highlighted channel. The following display is shown in the call field of the channel:

```
"IR->2"
```

In this example, message number 2 is being played. If a call is received or a transmission initiated while playback is in progress, the playback pauses.

Selecting a Previously Recorded Call

The **IRR Prev** button can be used to "rewind" the recorder to a message prior to the most recently recorded. The following display is shown in the call field of the channel:

```
"IR<<1"
```

In this example, the recorder has been positioned to play message number 1.

Pausing a Record Playback

A playback can be paused before the end of the message by pressing the **IRR Play** button while playback is in progress. The following display is shown in the call field of the channel:

```
"IR||2"
```

Subsequent operation of the **IRR Play** button continues the playback from the point in the message where the pause was invoked.

Resetting the Playback Message Number

A playback may be terminated while in progress by pressing the **IRR Reset** button. This returns the message pointer to the end of the recording storage, pointing to the start of the last recorded message. The **IRR Reset** button may also be used after rewinding and playing back an earlier recorded message.

Subscriber List Window

Subscriber List window contains two panes. The left pane displays a list of subscriber groups for MAP27, iDEN, SDC, or MDC-1200. The right pane displays a list of subscriber IDs for the currently selected subscriber group. When one of these panes is on focus, operator may search for a group or an alias by typing in the group name or subscriber alias. If neither of these panes is on focus, keyboard entry is treated as ID or status or text entry depending on current context.

Call History Window

The Call History window can be enabled by pressing the **Misc Menu** button and then the **File Maint** button. At this point, you see buttons labeled **Show Call Window** and **Hide Call Window**, which enable or disable the Call History window display. When enabled, the window shows a list of received calls from the field units. The information includes:

- **TalkGroup/Chan** - The talkgroup/channel where the call is received.
- **Group Name** - Alias(es) for associated Radio Groups of identified Subscriber IDs are displayed here.
- **ID** - The calling radio's ID. This ID can be aliased to a 10-character alphanumeric string.
- **Long Alias** - User can program a longer alias, up to a 20 character alphanumeric string, for a private ID. This is optional and is only displayed in the call history window.
- **Status** - Used for status or message calls depending on the radio type.
- **Date/Time** - The date and time of call received.

Current entries/calls and the selected entry are displayed with black text. When a new call matches an existing call in the list, the existing call in the list is an old call. Old calls are greyed out (unless selected).

With the release of version 5.0, the activation of a console AUX I/O Input that is designated as an alarm results in an entry being added to the Call History list in order to automatically log the date/time of the event. When the alarm is acknowledged, that event is logged in Call History as well.

The operation of the Call History window is as follows:

- New received information displays on the top line with the old information scrolling down.
- Up to 64 calls are maintained in the queue. If the display is full, the last line of the display is pushed "off the bottom" of the screen. If the **CALL DELETE** (✕) key is used to remove a line on the display, calls kept in the queue are shifted up.
- The **STATUS UP** and **STATUS DOWN** keys are used to move the status highlight bar. You can also highlight an entry using the mouse. (↑ ↓)
- The **CALL REPLY** (⮰) key can be used to reply to the private ID that is displayed on the highlighted line automatically. This only applies to iDEN, SDC, and MAP27.

> 📝 **Note** Close IntegratorRD submenus, such as the Paging submenu, before using the **Call Reply** key. If a submenu is active, the system is operating with that context in mind and any attempt to use **Call Reply** may result in operation that is different than expected.

- The **ALARM ACKNOWLEDGE** (🔥) key is used to acknowledge Aux Input Alarms that are displayed in the Talk Group / Chan column.
- The **CALL DELETE** (✕) key is used to remove the highlighted call from the queue. All entries with the same ID as the highlighted call, old or new, are also deleted.
- The **PRINT** (🖨) key is used to print the current content of the Call History window.
- Mouse left click on an entry displays the caller ID on the entry line.

With the release of version 5.0 several new filters have been added to the Call Window to control which call records are displayed.

- The **HIDE OLDER CALLS** key is a toggle button used to hide or display old calls. The icons indicate the current mode of operation.

  - A single clock face ( ) indicates that only current calls are displayed.

  - A clock face with a shadow ( ) indicates that both current and older call records are displayed.

- The **SHOW CALLS AND AUX I/O ALARMS** key cycles through three states for displaying calls and aux I/O alarms in the window.

  - This icon indicates that window is showing both calls and aux I/O alarms

  - This icon indicates that only radio calls are displayed

  - This icon indicates that only aux I/O alarms are displayed

- The Select/Unselect Calls key cycles through three states for displaying selected and unselected calls.

  - This icon indicates that both select and unselect calls are being displayed in the Call Window

  - This icon indicates that only select calls are being displayed in the Call Window

  - This icon indicates that only unselect calls are being displayed in the Call Window

iDEN Functions

Incorporation of iDEN interface support into the IntegratorRD adds an iDEN Call submenu and the option of adding iDEN-specific buttons to the main screen, so calls can be made on each iDEN radio. A Call Window can be enabled, which has two sub-windows. The first tab displays the Call History Window to show a list of received status codes, call alerts, and private calls. The second tab displays the Subscriber List window to

show the subscriber IDs with iDEN-specific buttons so calls can be made from this window instead of the iDEN Call submenu.

iDEN Call Submenu

An iDEN Call submenu is available with the submenu buttons on the right hand side of the main screen. This submenu replaces the bottom two rows of the IntegratorRD buttons with a list of the programmed iDEN subscribers and all the iDEN-specific control buttons.

If the configuration is programmed for multiple groups of iDEN radios (up to 10 groups), a screen similar to Figure 15 is displayed. Selecting one of these group buttons displays a set of related iDEN Subscriber IDs as shown in Figure 16. If more than 12 IDs are programmed for the group selected, the IDs can be navigated using the "Next" and/or "Prev" buttons. At any point, using the "Back (Grps)" button returns the user to the main screen showing the Radio groups.

If no iDEN radio groups are programmed, all the radio IDs (8 per screen with "Next" and/or "Prev" buttons to navigate) are displayed on the main screen as shown in Figure 17.

Figure 15: iDEN Call Submenu, iDEN Radio groups
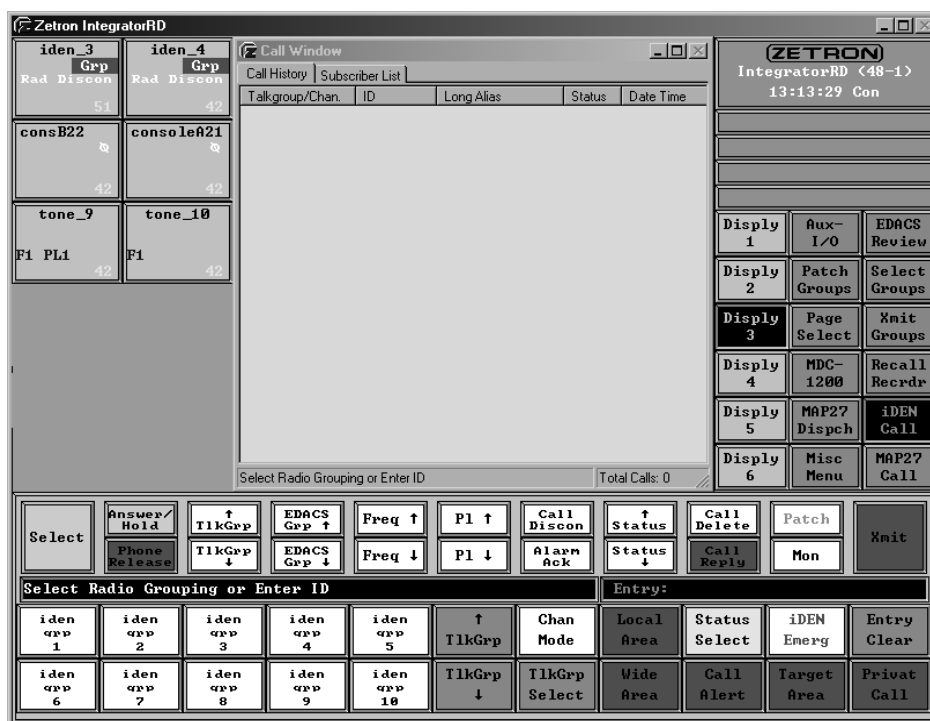
Figure 16: iDEN Call Submenu, iDEN Radio IDs within a Group
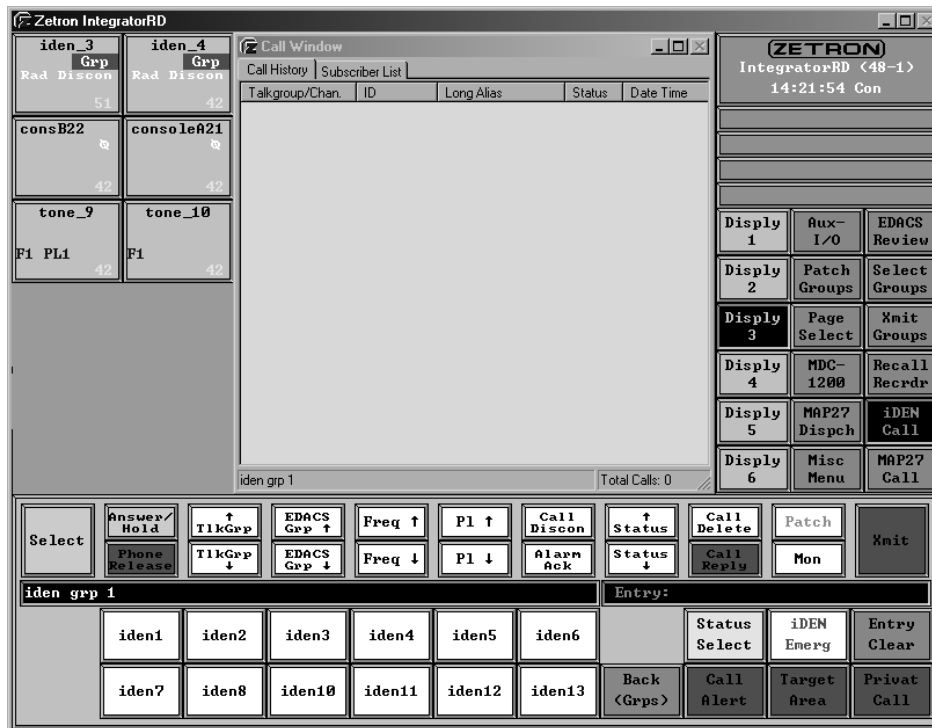
Figure 17: iDEN Call Submenu, IDs with no Radio Groups
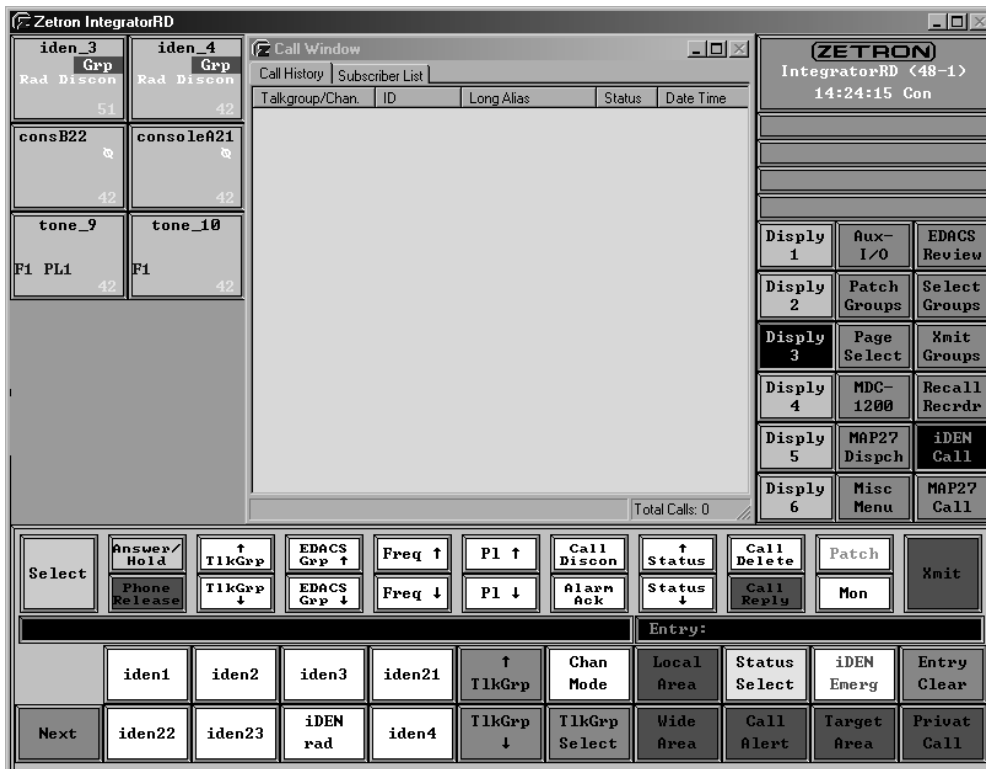
The alias-labeled Subscriber ID buttons allow the entry of ID digits into the Radio ID entry field using the mouse or a touch screen.

The user can also manually enter a radio ID using the audio panel keypad or the keyboard.

iDEN Subscriber List Window

The user has the choice to use the Subscriber list window instead of the iDEN Call submenu. This window also displays the iDEN groups with the subscriber IDs programmed for those groups, and the iDEN-specific control buttons, just like the iDEN Call submenu. See Figure 18.

Figure 18: iDEN Subscriber List Window
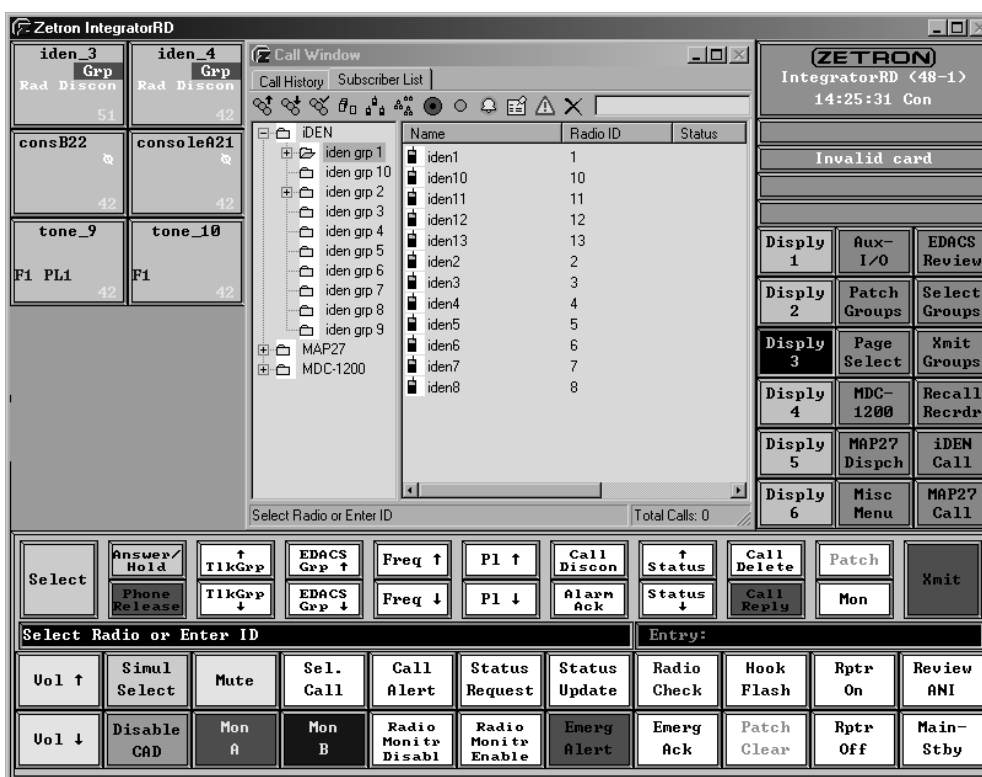
Channel Box

Each channel box on the IntegratorRD displays the transmit/receive activity of that particular radio channel. The iDEN channel box has the indicators shown in Figure 19.

Table 8 lists the iDEN call progress messages. Table 9 lists the iDEN Radio Alarm Messages, which under normal operation should rarely be displayed.

Figure 19: iDEN Channel Box

Active when
receive call is
in-progress

Channel Busy
(Active during
transmit)

CHANNEL TITLE	
CALL	GRP
CALL PROGRESS GROUP/INDIV ID	
BSY PAT VOL	

Default Call Setup Mode
(Group of Private)

Call connection progress

Group (up to 10 chars.) and
private call ID (up to 15 chars.)

Channel Volume % (0-99)

Patch Active Indication
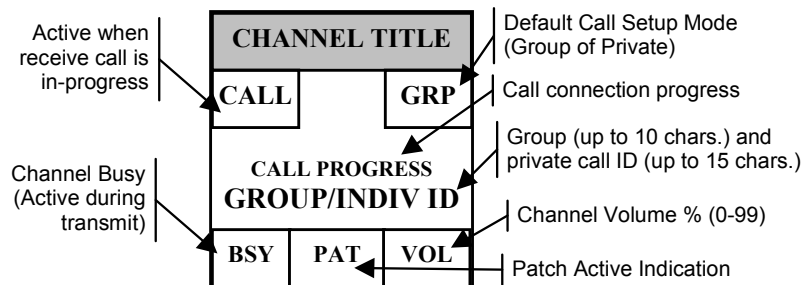
Table 8: iDEN Operation Call Progress Messages

Indication	Description
Rad Discon	The connection between the channel card and the radio is not responding.
Out of Svc	The radio is not connected to the iDEN network.
Register	The radio is connecting to the iDEN network.
In Service	The radio is connected to the iDEN network. The radio is idle.
Started...	A call (either transmit or receive) is being initiated.
Receive..	A receive call is active.
Transmit..	A transmit call is active.
Hang....	Either a receive or a transmit call is pending.
Alert OK	The call alert transmission was successful.
Alert Fail	The call alert transmission was unsuccessful.
Tgt Nt Rsp	The target specified is not responding.
Tgt No Exs	The target specified does not exist in the system.
NoKey 2 TG	Radio is not allowed to key on secondary talkgroup.
Alrdy Keyd	Radio has already been keyed up.
Alrdy DeKd	Radio has already been keyed down (dekeyed).
Rad Locked	Radio is security code locked.
Inv AreaID	The target area specified was invalid.
Svc Active	Service is active.
ISO	Isolated Site Operation
InvFtMbrID	The Fleet Member ID entered is invalid.
FNE Dni Rq	FNE (the network) had denied the radio's request.
Usr Cnc Rq	The user has canceled a request.
Rad Timeout	The radio has timed out on a given operation.
RadDeniReq	The radio has denied the given request.
Chan Fail	The channel the radio keyed up on has failed.
Sys Busy	The system (the network) is busy.
Access Fail	Access to the system (the network) has failed.

Indication	Description
Urban OOR	Urban out of range
Fleet OOR	Fleet out of range
Member OOR	Member out of range
No Fleet	No fleet
Inv Member	Invalid member
Inv Fleet	Invalid fleet
Inv Urban	Invalid urban
Resetting	Indicates the channel is in a reset state due to the iDEN Reset command (see *Resetting the Radio* on page 100).

Table 9: iDEN Radio Alarm Messages

Indication	Description
MX Fnc Alm	Maximum Functions Alarm Code
Cncncy Alm	Concurrency Alarm Code
Inv Fn Grp	Invalid Function Group Alarm Code
Inv Opcode	Invalid Opcode Alarm Code
Rad In Alm	Radio Initialization Alarm Code
Ocd St Alm	Opcode State Alarm Code
In Sec Alm	Information Section Alarm Code
Exec Alarm	Execution Alarm Code
Data Alarm	Data Alarm Code
S/W Alrm	Software Alarm Code
Inv HW Cfg	Invalid Hardware Configuration Alarm Code
Hi Tmp Cnd	High Temperature Condition
Inv Md Idx	Invalid Mode Index
Unkn Error	Unknown Error
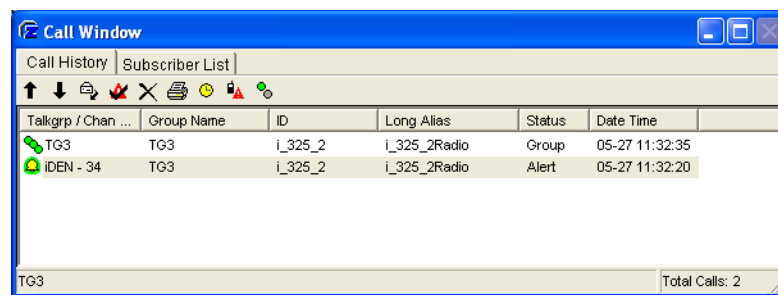
Call History Window

When enabled, the window (as shown in Figure 20) shows a list of received status codes, call alerts, and calls as they are received from the field units. The information includes:

- **TalkGroup/Chan** - The talkgroup on which a group call was received, or the iDEN channel on which a private call or call status/call alert was received. Talkgroup IDs may be aliased to a 10-character alphanumeric string. The iDEN channel displayed matches the display in the channel box.

- **Group Name** - Alias(es) for associated Radio Groups of identified Subscriber IDs are displayed here.

- **ID** - Used for private Calls, Call Alerts, and Status Messages, the ID (up to 15 characters) of the calling radio. Private call IDs can be aliased to a 10 character alphanumeric string.

- **Long Alias** - User can program a longer alias, up to a 20 character alphanumeric string, for a private ID. This is optional and is only displayed in the call history window.

- **Status** - Used for all calls, the call or message status. For status messages, the status displayed depends on the received status code. The status codes can be aliased to a 10-character alphanumeric string. For call alerts, the status "`--Alert--`" is always shown. For private calls, the status "`-Private-`"is always shown. For group calls, "`--Group--`" is always shown. For Emergency calls, the icon is a red double triangle.

- **Date/Time** - In all cases, the date and time of reception is shown.

Figure 20: Call History Window with iDEN calls

The icon at the front of each entry in the Window identifies the type of call received. Referring to Figure 20, the entries from top to bottom are as follows:

- A Group Call from I_325_2 on talk group TG3. The long alias for I_325_2 is "I_325_2Radio".

- A Call Alert from I_325_2, on channel 34.

The operation of the Call History window is as follows:

- New received information displays on the top line with the old information scrolling down.

- Up to 64 calls are maintained in the queue. If the display is full, the last line of the display is pushed "off the bottom" of the screen. If the **CALL DELETE** key is used to remove a line on the display, calls kept in the queue are shifted up.

- The **STATUS UP** and **STATUS DOWN** keys are used to move the status highlight bar. You can also highlight an entry using the mouse.

- The **CALL REPLY** key can be used to reply to the private ID that is displayed on the highlighted line automatically. This only applies to iDEN and MAP27.

> **Note** Close IntegratorRD submenus, such as the Paging submenu, before using the **Call Reply** key. If a submenu is active, the system is operating with that context in mind and any attempt to use **Call Reply** may result in operation that is different than expected.

- The **CALL DELETE** key is used to remove the highlighted call from the queue. All entries with the same ID as the highlighted call, old or new, are also deleted.

- The **HIDE OLDER CALLS** key is a toggle button used to hide or display old calls.

- The **PRINT** key is used to print the current content of the Call History window.

- Mouse left click on an entry displays the caller ID on the entry line.

When printed (using the PRINT key), the Call History data will look like the following.

(S: Selected channel, A: Acknowledged, E: Emergency)

Info.	Talkgroup/Chan.	Group Name	ID	Long Alias	Status	Date Time
	ICOM-17		Call Dr 1		Indiv	05-27 16:37:54
	ICOM-17		Call Dr 3		Indiv	05-27 15:59:32
S	TG3	TG3	i_325_2	i_325_2Radio	Group	05-27 11:32:35
	iDEN - 34	TG3	i_325_2	i_325_2Radio	Alert	05-27 11:32:20

Call Log Files

The console logs each 24 hours of call activity to the PC hard disk. Each individual daily log file is created at 00:00 (midnight) and captures all entries made to the dispatch queue. The log file name is derived from the date. Table 10 shows example file names.

Table 10: Example Log File

File Name	Log File Date
Calls_2001.04.11.log	11 April 2001
Calls_1999.12.27.log	27 December 1999

Default location for call log files in Windows XP:
C:\Documents and Settings\All Users\Documents\Zetron\IntegratorRD\CallLogs

Default location for log files in Windows 7:
C:\Users\Public\Documents\Zetron\IntegratorRD\CallLogs

> **Note** This is the default location for the current version of IntegratorRD. The default location for prior versions varies.

An excerpt from a typical log file is shown below:

```
RX   04/11/2001 12:30:54   iDEN   iden 4    iden9                        Alert
RX   04/11/2001 12:31:14   iDEN   Group:6   iden12                       Group
RX   04/11/2001 12:31:18   iDEN   iden 4    20                           Private
RX   04/11/2001 12:31:21   iDEN   iden 4    31                           Status:4
RX   04/11/2001 12:31:41   iDEN   Group:6   iden12               Ack     Group
RX   04/11/2001 12:31:51   iDEN   iden 4    20                   Ack     Private
RX   04/11/2001 12:31:55   iDEN   iden 4    31                   Ack     Status:4
RX   04/11/2001 12:37:16   iDEN   iden 4    iden8                        Private
RX   04/11/2001 12:37:25   iDEN   iden 4    iden8                Ack     Private
RX   04/11/2001 12:40:47   iDEN   Group:2   iden5           (E)  Ack     Group
```

Following is the description for each of the columns:

- Signal Type – RX (incoming call)

- Date Time – date and time the call came in

- Channel Type

- Channel Name/Alias

- Source ID or Alias

- Source Long Alias

- Destination ID or Alias (only for MDC-1200)

- Destination Long Alias (only for MDC-1200)

- Emergency

- Acknowledge

- Call Type – private, group, alert, or status code

iDEN Control Operations

This subsection describes sending and receiving calls using the iDEN interface of
IntegratorRD.

Receiving a Call

When receiving a call, the channel box shows "`Receive..`", and indicate the radio ID
making the call; the "`CALL`" indication is activated. This indication shows the user that a
received call is active. The calling unit radio ID (or alias, if enabled) is shown in the
channel box during the call (see Figure 21). The current call mode (GRP or PVT) is shown
in the channel box. The call mode has no effect during the receipt of a call.

Figure 21: Channel Box During Receipt of a Call
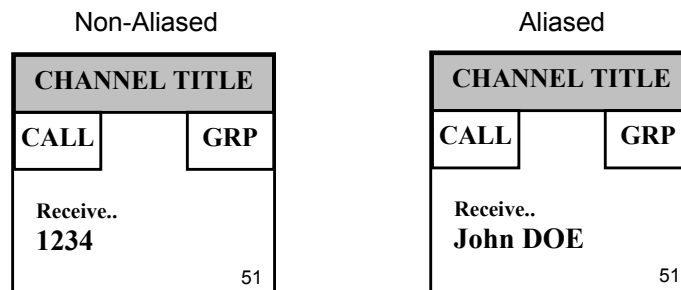
Non-Aliased	Aliased
CHANNEL TITLE **CALL** **GRP** Receive.. **1234** 51	**CHANNEL TITLE** **CALL** **GRP** Receive.. **John DOE** 51

When the call is received, it is entered into the Call History Window with the channel,
radio ID, status, and time of the reception. The status is either "`NDC Privat`" for a
private call, or "`Group`" for a group call. If Radio ID aliasing is enabled, then the alias
string (up to 10 characters) is shown in place of the Radio ID. The ID alias table is
preconfigured using the RDPS (Radio Dispatch Programming System) program.

When receiving a call from an out of range NDC (Nationwide Direct Connect) ID, the call
is logged in the Call History window but the channel icon displays "OOR UFMI" (Out Of
Range Universal Fleet Member Identifier) instead of the ID value.

Responding to a Call

To respond to a call that has been received and is still active ("Hang..."), the user can transmit voice to the distant end radio by selecting the channel and using the selected channel XMIT button, or (if a mouse is being used) by placing the mouse over the channel box and hitting the right mouse button. The call progress indication "`Transmit..`" and the "`BSY`" indication activates, indicating to other console positions that the transmitter is busy. See Figure 22.

> 📝 **Note** When responding to a call that is no longer active, the channel must be in GRP mode to respond to Group calls and PVT mode for private call, when using the above mentioned methods. The current mode can be changed by pressing the CHAN MODE button.

A third way to respond to a call is by highlighting the call in the Call History Window, using the STATUS UP and STATUS DOWN buttons or mouse, and then pressing the CALL REPLY button. If this method of responding to a call is used, GRP/PVT call mode setting is irrelevant.

Releasing the pressed XMIT, Reply, or right mouse button clears the BSY indication.

Figure 22: Channel Box Transmitting Indicators
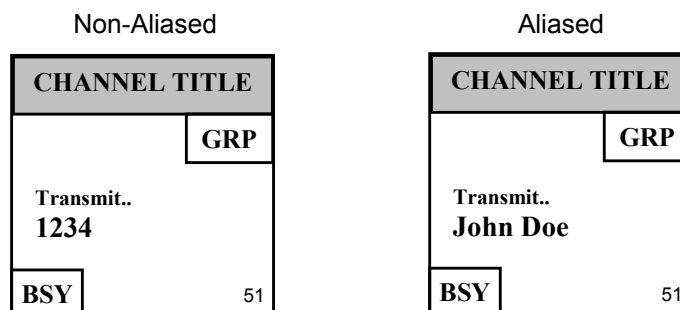
<table>
<tr><td align="center">Non-Aliased</td><td align="center">Aliased</td></tr>
<tr>
<td>

CHANNEL TITLE

GRP

Transmit..
1234

BSY   51

</td>
<td>

CHANNEL TITLE

GRP

Transmit..
John Doe

BSY   51

</td>
</tr>
</table>

Receiving a Status Message

A radio in the field can send a status update to the dispatcher. The received status is displayed in the Call History Window along with the time and radio ID from which the status was received.

The status numbers can be aliased to 10-character alphanumeric strings.

The status reception condition clears automatically from the radio by the iDEN Dual Channel Card software to allow continued dispatching operation.

Receiving a Call Alert

A radio in the field can send a call alert to get the dispatcher to call back. In addition to the audible alert, the call alert is displayed in the Call History window with a status of "`--Alert--`" along with the time, radio ID, and channel from which the alert was received.

The call alert condition is cleared automatically from the radio by the iDEN Dual Channel Card software to allow continued dispatching operation.

Setting the Call Mode (Group vs. Private)

Generic unspecified transmits (Xmit button, footswitch PTT, etc.) initiate a group or a private call dependent on the currently selected call mode. The current call mode can be changed by pressing the CHAN MODE button. This button toggles the mode between GRP and PVT.

Specified transmits (Local Area, Wide Area, Private Call, Call Reply, etc.) still generate the appropriate call type regardless of the current call mode.

Dependent on current call mode, the private ID or talkgroup of the last call initiated or received is displayed in each channel window. Calls always display the appropriate private ID or talkgroup during the duration of the call. In the idle state, the most recent private ID or talkgroup transmitted, or received, displays according to the channels call mode.

Initiating a Group Call

The dispatcher can initiate a group call from the iDEN call submenu, from the main video screen if programmed to do so, or from the Subscriber List window using the toolbar buttons if enabled. To make a group call to the current talkgroup (displayed in the channel box during idle periods), the dispatcher first highlights the channel (using the mouse pointer and the left mouse button) that is used for the transmission, and then presses the LOCAL AREA or WIDE AREA call button.

Alternatively, the TRANSMIT button on the audio panel, the XMIT screen button, or a footswitch can be used to perform a local area group call when in GRP call mode (See *Setting the Call Mode (Group vs. Private)* on page 97). Each of these buttons operates on the selected (green-highlighted) channel. The type of call, LOCAL or WIDE AREA, is determined by a switch selection on the iDEN Dual Channel Card.

For making calls to a different group, refer to *Changing the Radio Talkgroup* on page 100.

Initiating a Targeted Area Call

The dispatcher can initiate a targeted area call, i.e., a call to the current talkgroup in a specified area, from the iDEN Call submenu, from the main video screen, if programmed to do so, or from the Subscriber List window if enabled. To make the targeted area call the dispatcher first selects the channel that is used for the transmission, enters the destination area number (either by manual key entry or a Subscriber ID alias button), then click TARGET AREA.

Initiating a Private Call

To make a private call, the dispatcher first selects the channel that is used for the transmission, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then presses the PRIVATE CALL button.

When the selected channel is in PVT call mode, a private call can be placed by clicking TRANSMIT on the audio panel, the XMIT screen button, or a footswitch. The private call goes to the private ID of the last private call initiated or received.

There are two types of private calls supported, local and Nationwide Direct Connect (NDC). When user enters an ID between 1 to 65535, a local private call is sent. When the ID has one or two asterisks, the NDC Private Call is sent. The supported NDC ID format is: urban*fleet*member with the following rules:

- The ID is up to 15 characters long and purely numeric except for one or two asterisks as field separator characters.
- Each field valid range is 1 to 1048575. The binary value of the combined numeric value of all fields shall not exceed 35 bits in length.
- If there are two fields, the first field is the fleet and second is the member. In this case, the home urban is used.
- If there are three fields, the first field is the urban, second is fleet, and third is member.

To call an NDC number within the same fleet, an asterisk and member value are required but not the fleet. For example: *123, the home fleet and urban is used.

Maintaining a Group or Private Call

Once a group or private call has been set up, the standard TRANSMIT, XMIT, or footswitch PTT buttons can be used to maintain a conversation on the selected channel.

Initiating a Call Alert

The dispatcher can send a call alert to another radio from the iDEN Call submenu, from the main video screen, if programmed to do so, or from the Subscriber List window if enabled. The dispatcher first selects the channel that is used for the transmission, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then click CALL ALERT. If the alert is successful, "Alert OK" is displayed temporarily in the channel display. If the alert is not successful, "Alert Fail" is displayed. The call alert may be sent to local or NDC ID.

Sending a Status Message

If the iDEN network supports status calls, the dispatcher can send a status call to another radio from the iDEN Call submenu, or from the Subscriber List window. The dispatcher first selects the channel that is used for the transmission, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then click STATUS SELECT. This brings up a Status call selection submenu or subwindow, which shows any programmed iDEN Status ID aliases (see Figure 23 and Figure 24). After selecting a Status ID button or entering the status code (001-255) manually, click "Send Status" to send the message. Click "Exit" to return to the main iDEN Call submenu, or to the main Subscriber List window. The status message may be sent to local or NDC ID.

Figure 23: iDEN Status Select Submenu
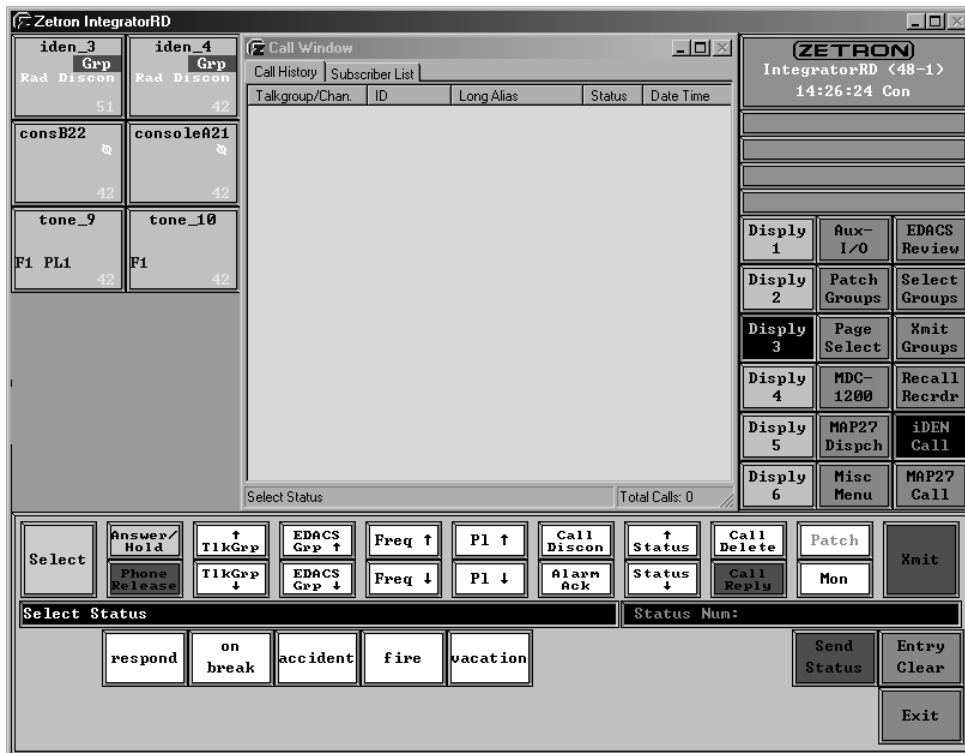
Figure 24: iDEN Status Select Subwindow
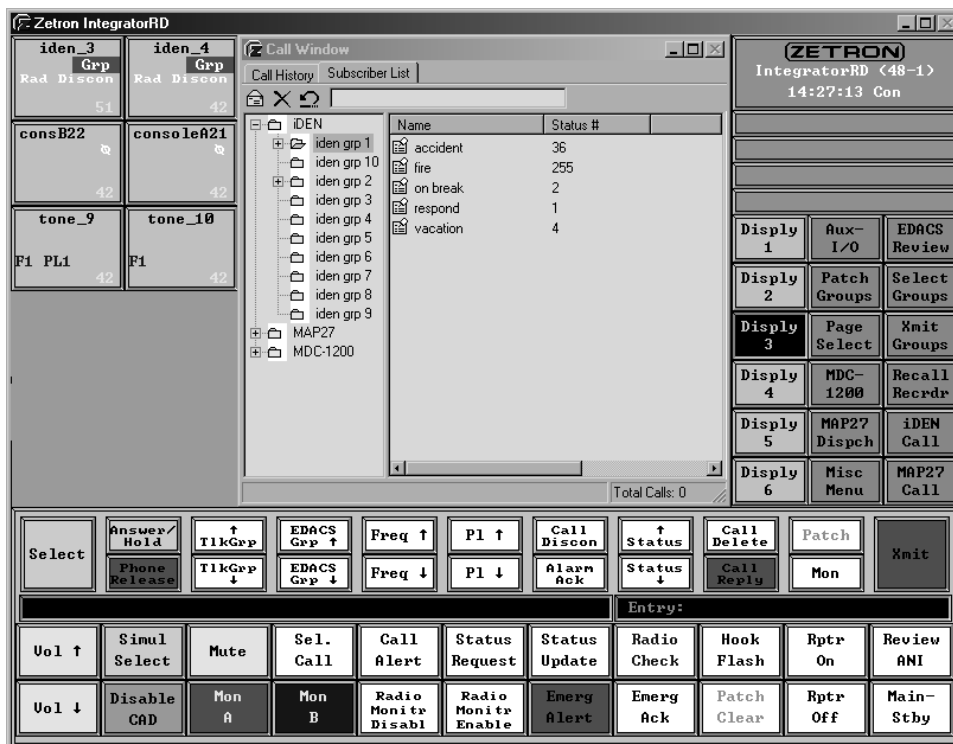
Initiating and Clearing an Emergency Call

The iDEN EMERG button is used to both initiate and clear an emergency call. The distinction between the two functions is determined by how long the button is held down before release. If the button is held down for less than three seconds before release, the console acknowledges this as a request to initiate an emergency group call. Since the iDEN EMERG button has to be released to initiate the emergency call, the call immediately goes into "Hang.…" The Transmit button must then be pressed to continue transmitting, if audio is to be passed.

If the iDEN EMERG button is held down for three seconds or more before release, the console acknowledges this as a request to clear the emergency group call. This applies only to emergency calls initiated by the console. Emergency calls initiated by a radio in the field must be cleared by the radio that originated them.

Changing the Radio Talkgroup

The TLKGRP UP/DOWN and TLKGRP SELECT buttons are used to change the radio talkgroup. To change the talkgroup, highlight the channel and click either TLKGRP UP or DOWN. The current radio ID in the channel display is replaced with the name of the next programmed talkgroup. The name is displayed flashing in yellow. Continue to press either the TLKGRP UP or DOWN until the desired group is identified. Then click TLKGRP SELECT to complete changing the group. To cancel the selection process press the left mouse button over any channel display.

If a call comes in on the channel where talkgroup is being scrolled through, the channel icon display is updated to show the caller group or ID, but the talkgroup scroll is not reset. If operator continues to scroll, it should start where it was interrupted. However, if transmit activity or iDEN command is initiated on that channel, the talkgroup is reset.

Ending the Call

The END CALL button terminates an iDEN private call or removes the radio from an iDEN group call.

Resetting the Radio

The radio can be reset from the IntegratorRD Misc menu by clicking iDEN RESET. Pressing this button commands the radio to perform a full reset of the radio as if the radio had been powered up. The reset process takes about 20 seconds to complete, during which time the radio can not send or receive calls.

Sprint Direct Connect (SDC) Functions

Incorporation of SDC interface support into the IntegratorRD adds an SDC Call submenu and the option of adding SDC-specific buttons to the main screen, so calls can be made on each SDC radio. A Call Window can be enabled, which has two sub-windows. The first tab displays the Call History Window to show a list of received status codes, call alerts, and private calls. The second tab displays the Subscriber List window to show the

subscriber IDs with SDC-specific buttons so calls can be made from this window instead of the SDC Call submenu.

SDC Call Submenu

An SDC Call submenu is available with the submenu buttons on the right hand side of the main screen. This submenu replaces the bottom two rows of the IntegratorRD buttons with a list of the programmed SDC subscribers and all the SDC-specific control buttons.

SDC does not support multiple TalkGroups on a given radio, just one TalkGroup ID per radio channel and one radio channel per TalkGroup ID. Therefore, SDC does not have TlkGrp up/down buttons.

Figure 25: SDC Call Submenu
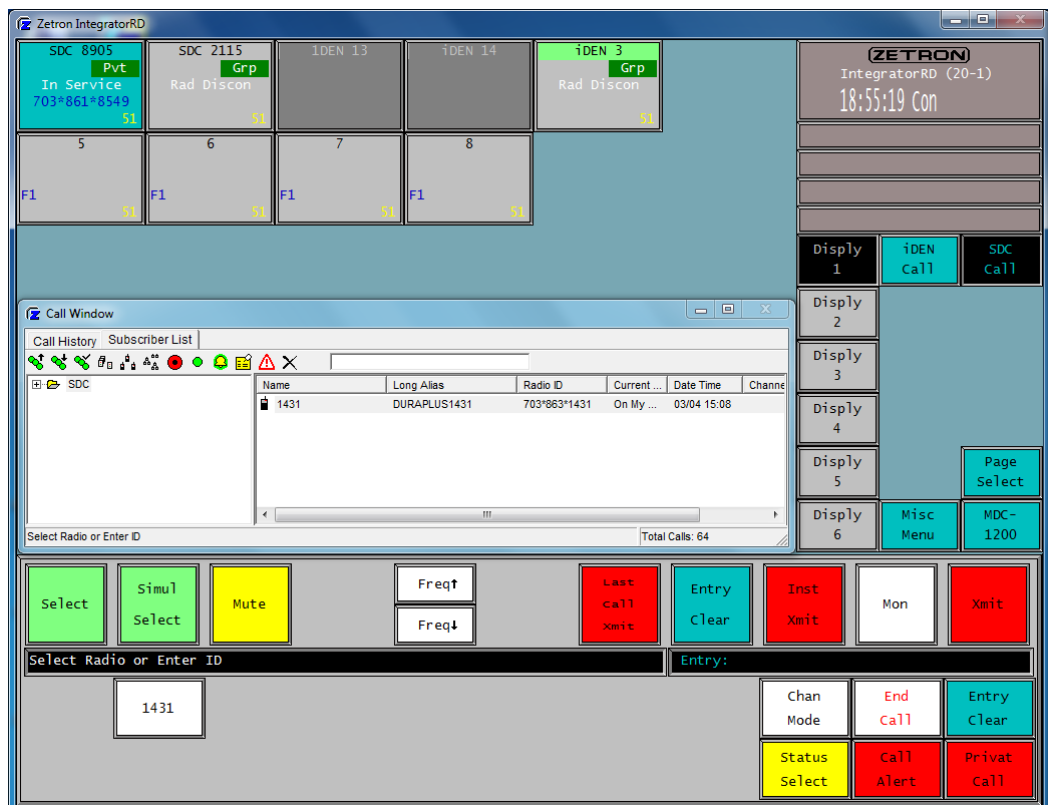
The alias-labeled Subscriber ID buttons allow the entry of ID digits into the Radio ID entry field using the mouse or a touch screen.

The user can also manually enter a radio ID using the audio panel keypad or the keyboard.

SDC Subscriber List Window

The user has the choice to use the Subscriber list window instead of the SDC Call submenu. This window also displays the SDC TalkGroups with the subscriber IDs programmed for those TalkGroups, and the SDC-specific control buttons, just like the

SDC Call submenu. See Figure 26.

Figure 26: SDC Subscriber List Window
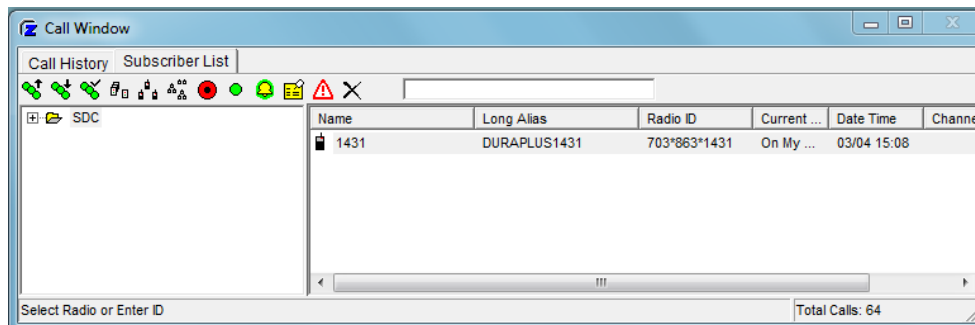
Channel Box

Each channel box on the IntegratorRD displays the transmit/receive activity of that particular radio channel. The SDC channel box has the indicators shown in Figure 19.

Table 8 lists the SDC call progress messages. Table 9 lists the SDC Radio Alarm Messages, which under normal operation should rarely be displayed.

Figure 27: SDC Channel Box
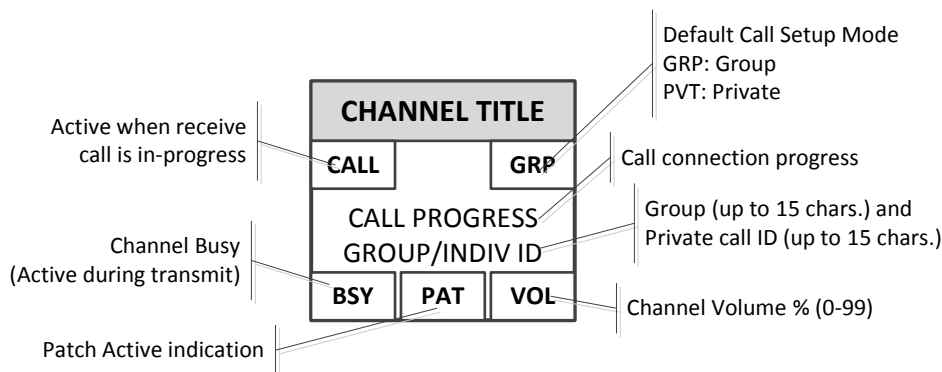
Call History Window

When enabled, the window (as shown in Figure 20) shows a list of received status codes, call alerts, and calls as they are received from the field units. The information includes:

- **TalkGroup/Chan** - The talkgroup on which a group call was received, or the SDC channel on which a private call or call status/call alert was received. Talkgroup IDs may be aliased to a 10-character alphanumeric string. The SDC channel displayed matches the display in the channel box.

- **Group Name** - Alias(es) for associated Radio Groups of identified Subscriber IDs are displayed here.

- **ID** - Used for private Calls, Call Alerts, and Status Messages, the ID (up to 15 characters) of the calling radio. Private call IDs can be aliased to a 10 character alphanumeric string.

- **Long Alias** - User can program a longer alias, up to a 20 character alphanumeric string, for a private ID. This is optional and is only displayed in the call history window.

- **Status** - Used for all calls, the call or message status. For status messages, the status displayed depends on the received status code. The status codes can be aliased to a 10-character alphanumeric string. For call alerts, the status "`--Alert--`" is always shown. For private calls, the status "`NDC Privat`"is always shown. For group calls, "`--Group--`" is always shown. For Emergency calls, the icon is a red double triangle.

- **Date/Time** - In all cases, the date and time of reception is shown.

Figure 28: Call History Window with SDC calls

The icon at the front of each entry in the Window identifies the type of call received. Referring to Figure 20, the entries from top to bottom are as follows:

- A Group Call from I_325_2 on talk group TG3. The long alias for I_325_2 is "I_325_2Radio".

- A Call Alert from I_325_2, on channel 34.

The operation of the Call History window is as follows:

- New received information displays on the top line with the old information scrolling down.

- Up to 64 calls are maintained in the queue. If the display is full, the last line of the display is pushed "off the bottom" of the screen. If the **CALL DELETE** key is used to remove a line on the display, calls kept in the queue are shifted up.

- The **STATUS UP** and **STATUS DOWN** keys are used to move the status highlight bar. You can also highlight an entry using the mouse.

- The **CALL REPLY** key can be used to reply to the private ID that is displayed on the highlighted line automatically. This only applies to iDEN, SDC, and MAP27.

> **Note** Close IntegratorRD submenus, such as the Paging submenu, before using the **Call Reply** key. If a submenu is active, the system is operating with that context in mind and any attempt to use **Call Reply** may result in operation that is different than expected.

- The **CALL DELETE** key is used to remove the highlighted call from the queue. All entries with the same ID as the highlighted call, old or new, are also deleted.

- The **HIDE OLDER CALLS** key is a toggle button used to hide or display old calls.

- The **PRINT** key is used to print the current content of the Call History window.

- Mouse left click on an entry displays the caller ID on the entry line.

When printed (using the PRINT key), the Call History data will look like the following.

(S: Selected channel, A: Acknowledged, E: Emergency)

Info.	Talkgroup/Chan.	Group Name	ID	Long Alias	Status	Date Time
	ICOM-17		Call Dr 1		Indiv	05-27 16:37:54
	ICOM-17		Call Dr 3		Indiv	05-27 15:59:32
S	TG3	TG3	i_325_2	i_325_2Radio	Group	05-27 11:32:35
	SDC - 34	TG3	1234	Mountain	Alert	05-27 11:32:20

Call Log Files

The console logs each 24 hours of call activity to the PC hard disk. Each individual daily log file is created at 00:00 (midnight) and captures all entries made to the dispatch queue. The log file name is derived from the date. Table 10 shows example file names.

Table 11: Example Log File

File Name	Log File Date
Calls_2013.04.11.log	11 April 2013
Calls_2013.12.27.log	27 December 2013

Default location for call log files in Windows XP:
C:\Documents and Settings\All Users\Documents\Zetron\IntegratorRD\CallLogs

Default location for log files in Windows 7:
C:\Users\Public\Documents\Zetron\IntegratorRD\CallLogs

> **Note** This is the default location for the current version of IntegratorRD. The default location for prior versions varies.

An excerpt from a typical log file is shown below:

```
RX   04/11/2001 12:30:54   SDC   SDC 4     SDC9                           Alert
RX   04/11/2001 12:31:14   SDC   Group:6   SDC12                          Group
RX   04/11/2001 12:31:18   SDC   SDC 4     20                             Private
RX   04/11/2001 12:31:21   SDC   SDC 4     31                             Status:4
RX   04/11/2001 12:31:41   SDC   Group:6   SDC12                    Ack   Group
RX   04/11/2001 12:31:51   SDC   SDC 4     20                       Ack   Private
RX   04/11/2001 12:31:55   SDC   SDC 4     31                       Ack   Status:4
RX   04/11/2001 12:37:16   SDC   SDC 4     SDC8                           Private
RX   04/11/2001 12:37:25   SDC   SDC 4     SDC8                     Ack   Private
RX   04/11/2001 12:40:47   SDC   Group:2   SDC5            (E)      Ack   Group
```

Following is the description for each of the columns:

- Signal type RX (incoming call)

- Date and time the call came in

- Channel Type

- Channel Name/Alias
- Source ID or Alias
- Source Long Alias
- Destination ID or Alias (only for MDC-1200)
- Destination Long Alias (only for MDC-1200)
- Emergency
- Acknowledge
- Call Type – private, group, alert, or status code

Sprint Direct Connect (SDC) Operation

This subsection describes sending and receiving calls using the Sprint Direct Connect interface of IntegratorRD.

Receiving a Call

When receiving a call, the channel box shows "`Receive..`", and indicate the radio ID making the call; the "`CALL`" indication is activated. This indication shows the user that a received call is active. The calling unit radio ID (or alias, if enabled) is shown in the channel box during the call (see Figure 29). The current call mode (GRP or PVT) is shown in the channel box. The call mode has no effect during the receipt of a call.

Figure 29: Channel Box During Receipt of a Call
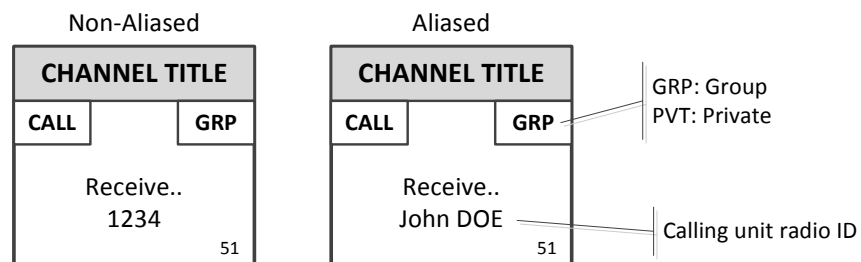
When the call is received, it is entered into the Call History Window with the channel, radio ID, status, and time of the reception. The status is either "`NDC Privat`" for a private call, or "`Group`" for a group call. If Radio ID aliasing is enabled, then the alias string (up to 10 characters) is shown in place of the Radio ID. The ID alias table is preconfigured using the RDPS (Radio Dispatch Programming System) program.

Responding to a Call

To respond to a call that has been received and is still active ("Hang..."), the user can transmit voice to the distant end radio by selecting the channel and using the selected channel XMIT button, or (if a mouse is being used) by placing the mouse over the channel box and hitting the right mouse button. The call progress indication "`Transmit..`" and the "`BSY`" indication activates, indicating to other console positions that the transmitter is

busy. See Figure 22.

> 📝 **Note** When responding to a call that is no longer active, the channel must be in GRP mode to respond to Group calls and PVT mode for private call, when using the above mentioned methods. The current mode can be changed by pressing the CHAN MODE button.

A third way to respond to a call is by highlighting the call in the Call History Window, using the STATUS UP and STATUS DOWN buttons or mouse, and then pressing the CALL REPLY button. If this method of responding to a call is used, GRP/PVT call mode setting is irrelevant.

Releasing the pressed XMIT, Reply, or right mouse button clears the BSY indication.

Figure 30: Channel Box Transmitting Indicators
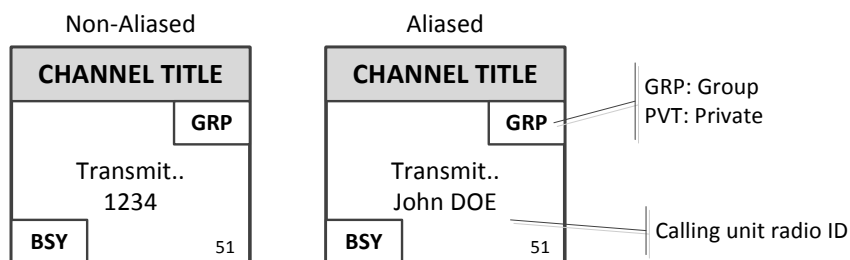
Receiving a Status Message

A radio in the field can send a status update to the dispatcher. The received status is displayed in the Call History Window along with the time and radio ID from which the status was received.

The status numbers can be aliased to 10-character alphanumeric strings. Up to 20 status messages are available.

The status reception condition clears automatically from the radio by the SDC Dual Channel Card software to allow continued dispatching operation.

Receiving a Call Alert

A radio in the field can send a call alert to get the dispatcher to call back. The call alert is displayed in the Call History window with a status of "--Alert--" along with the time, radio ID, and channel from which the alert was received.

> 🛑 **Warning!** SDC infrastructure does not support Emergency Call at this time. Therefore there is no audible alert for SDC call alerts.

Setting the Call Mode (Group vs. Private)

Generic transmits (Xmit button, footswitch PTT, etc.) initiate a group or a private call dependent on the currently selected call mode. The current call mode can be changed by pressing the CHAN MODE button. This button toggles the mode between GRP and PVT.

Dependent on current call mode, the private ID or talkgroup of the last call initiated or received is displayed in each channel window. Calls always display the appropriate private ID or talkgroup during the duration of the call. In the idle state, the most recent private ID or talkgroup transmitted, or received, displays according to the channels call mode.

Initiating a Group Call

The dispatcher can initiate a group call from the SDC call submenu, from the main video screen if programmed to do so, or from the Subscriber List window using the toolbar buttons if enabled, and then clicks the CALL REPLY button. To make a group call, the dispatcher first highlights the channel (using the mouse pointer and the left mouse button) that is used for the transmission, and then presses the XMIT button.

Alternatively, the TRANSMIT button on the audio panel, the XMIT screen button, or a footswitch can be used to perform a group call when in GRP call mode (See *Setting the Call Mode (Group vs. Private)* on page 107). Each of these buttons operates on the selected (green-highlighted) channel.

Initiating a Private Call

To make a private call, the dispatcher first selects the channel that is used for the transmission, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then presses the PRIVATE CALL button.

When the selected channel is in PVT call mode, a private call can be placed by clicking TRANSMIT on the audio panel, the XMIT screen button, or a footswitch. The private call goes to the private ID of the last private call initiated or received.

The supported ID format is *urban*fleet*member* with the following rules:
- The ID is up to 15 characters long and purely numeric except for the two asterisks as field separator characters.
- Each field valid range is 1 to 1048575. The binary value of the combined numeric value of all fields shall not exceed 35 bits in length.
- The first field is the urban, second is fleet, and third is member.

If the called radio is not available, the call is logged in the Call History window but the channel icon displays "`Tgt Nt Rsp`" (Target Not Responding) instead of the ID value.

Maintaining a Group or Private Call

Once a group or private call has been set up, the standard TRANSMIT, XMIT, or footswitch PTT buttons can be used to maintain a conversation on the selected channel.

Initiating a Call Alert

The dispatcher can send a call alert to another radio from the SDC Call submenu, from the main video screen, if programmed to do so, or from the Subscriber List window if enabled. The dispatcher first selects the channel that is used for the transmission, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then click CALL ALERT. If the message is successfully sent, "Alert OK" is displayed. If not successful, "Alert Fail" is displayed.

Sending a Status Message

If the SDC network supports status calls, the dispatcher can send a status call to another radio from the SDC Call submenu, or from the Subscriber List window. The dispatcher first selects the channel that is used for the transmission, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then click STATUS SELECT. This brings up a Status call selection submenu or subwindow, which shows any programmed SDC Status ID aliases (see Figure 31 and Figure 32). After selecting a Status ID button or entering the status code (1-20) manually, click "Send Status" to send the message. Click "Exit" to return to the main SDC Call submenu, or to the main Subscriber List window.

Figure 31: SDC Status Select Submenu
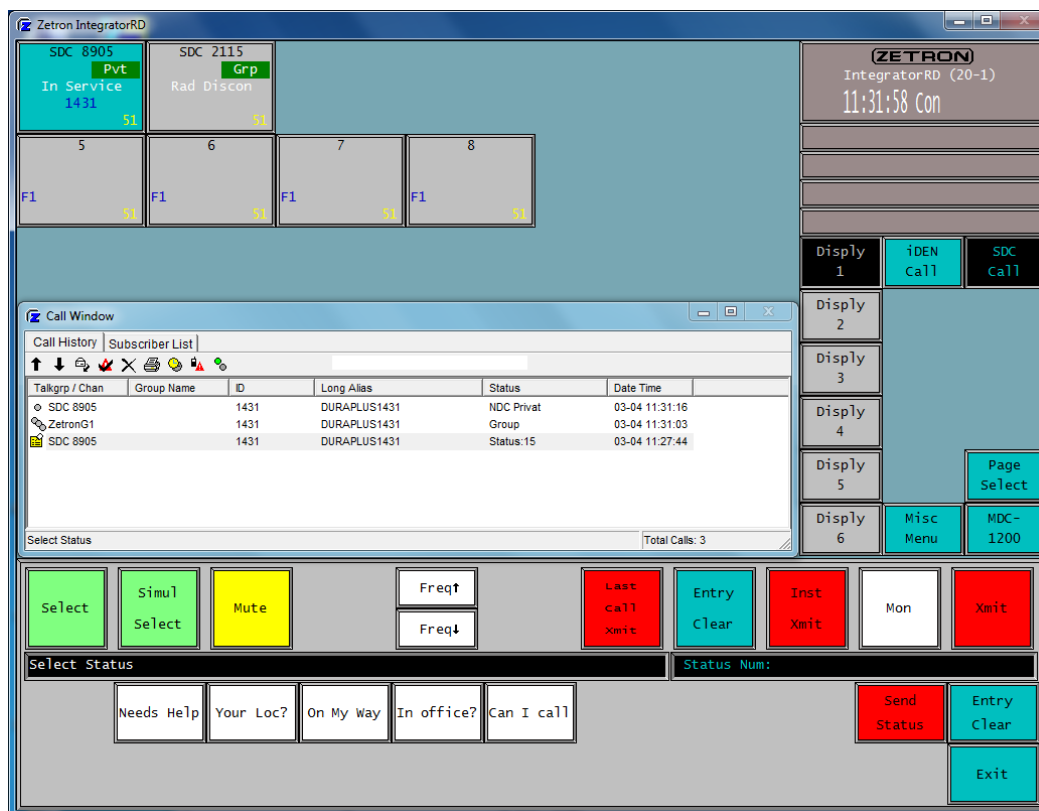
Figure 32: SDC Status Select Subwindow
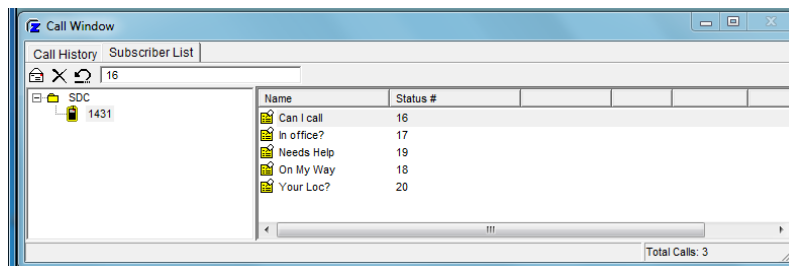
Ending a Call

The END CALL button terminates an SDC private call or removes the radio from an SDC group call.

Resetting the Radio

If the radio supports the reset function, it can be reset from the IntegratorRD Misc menu by clicking SDC RESET. Pressing this button commands the radio to perform a full reset of the radio as if the radio had been powered up. The reset process takes about 20 seconds to complete, during which time the radio can not send or receive calls.

> **Note**   Not all SDC radios support this function.

MAP27 Functions

Incorporation of MAP27 interface support into the IntegratorRD adds a MAP27 Call submenu, and the option of adding MAP27 specific buttons to the main screen, so the user can make calls on each MAP27 radio. A Call Window can be enabled, which has two subwindows. The first tab displays the Call History window to show a list of received status codes, call alerts, and private calls. The second tab displays the Subscriber List window to show the subscriber ID. It is equipped with MAP27 specific buttons so that calls can be made from this window.

MAP27 Call Submenu

A MAP27 Call submenu is available with the submenu buttons on the right hand side of the main screen. This submenu replaces the bottom two rows of the IntegratorRD buttons with a list of the programmed MAP27 subscribers and all the MAP27 specific control buttons while active.

If the configuration is programmed for multiple groups of MAP27 radios (up to 10 groups), a screen similar to Figure 33 is displayed. Selecting one of these group buttons displays a set of related MAP27 Subscriber IDs as shown in Figure 34. If more than 10 IDs are programmed for the group selected, the IDs can be navigated using the "Next" and/or "Prev" buttons. At any point the "Back (Grps)" button returns the user to the main screen showing the Radio groups.

If no MAP27 radio groups are programmed, all the radio IDs (10 per screen with "Next" and/or "Prev" buttons to navigate) are shown on the main screen. See Figure 35.

The alias labeled Subscriber ID buttons allow the entry of ID digits into the Radio ID entry field using the mouse or a touch screen.

The user can also manually enter a radio ID using the audio panel keypad or the keyboard.

Figure 33: MAP27 Call Submenu, MAP27 Radio groups
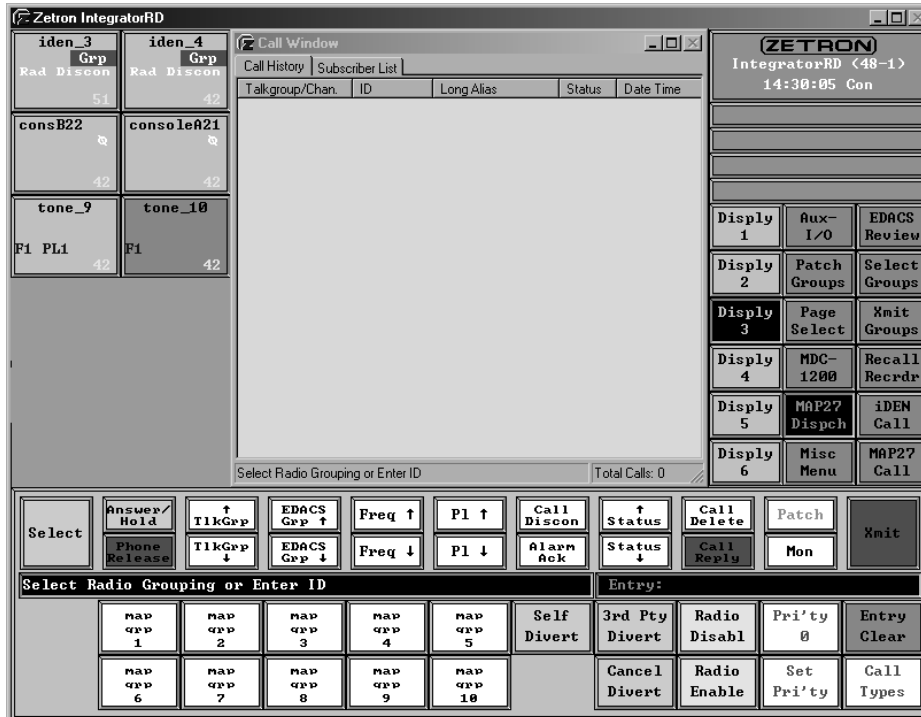
Figure 34: MAP27 Call Submenu, MAP27 Radio IDs within a group
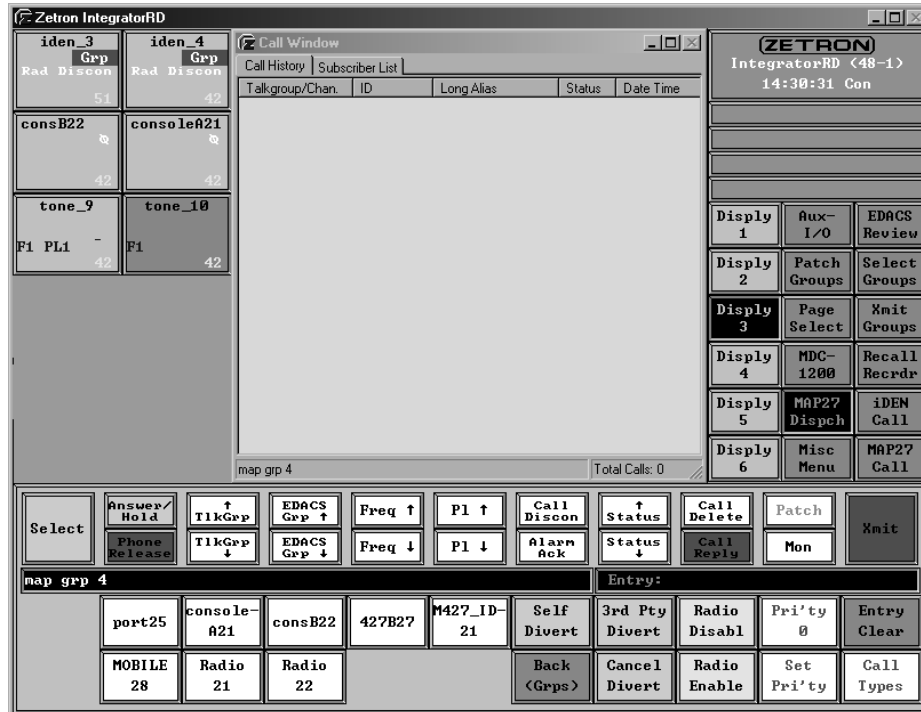
Figure 35: MAP27 Call Submenu, IDs with no Radio Groups
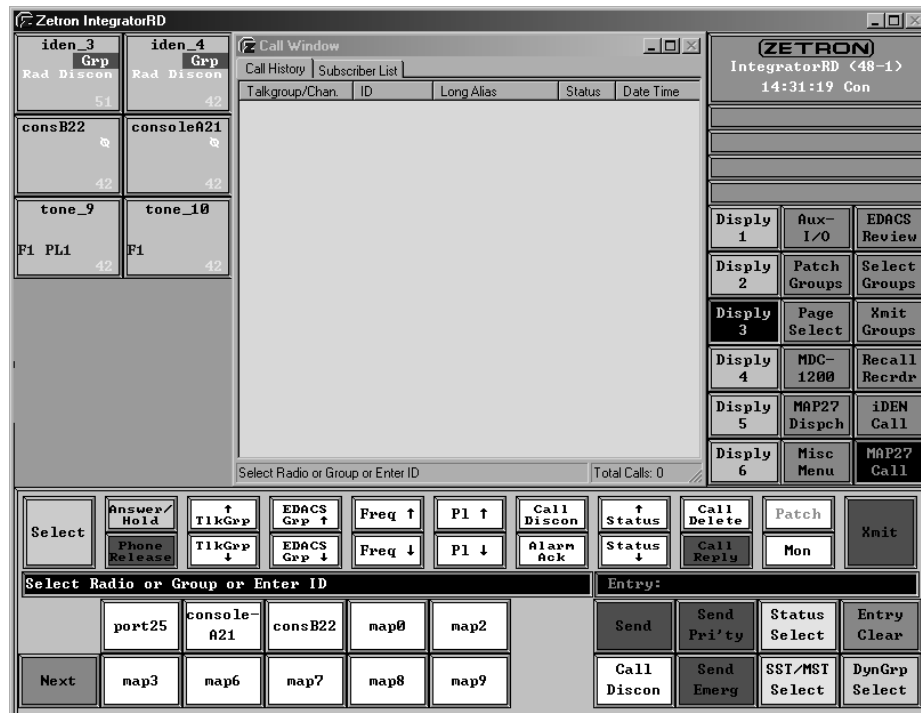
MAP27 Subscriber List Window

The user has the choice of using the Subscriber List window instead of the MAP27 Call submenu. This window also displays the MAP27 groups with the subscriber IDs programmed for those groups, and the MAP27-specific Call and Dispatch control buttons, similar to the MAP27 Call and Dispatch submenu. Please see Figure 36.

Figure 36: MAP27 Subscriber List Window
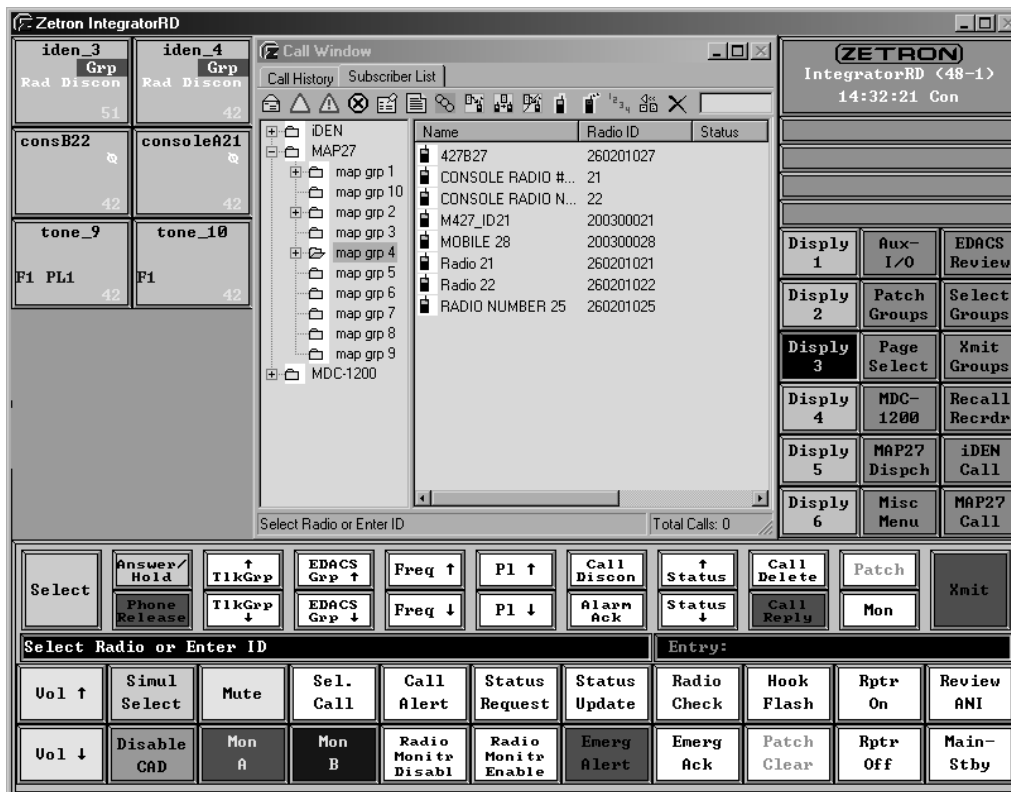
Channel Box

Each channel box on the IntegratorRD displays the transmit/receive activity and status for that particular channel. The MAP27 channel box has the following indicators as shown in Figure 37:

Figure 37: MAP27 Channel Box
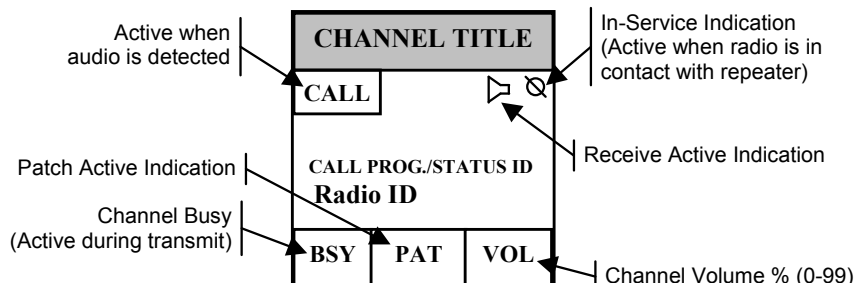
Radio Disconnected State

If data communication between the Common Control Equipment (CCE) and the radio has not been established, then "Rad Discon" displays in the Call Progress area of the channel box and the Radio ID field is blank.

Idle State

When the radio has acquired the repeater control channel, which is required before any radio communication can occur, the in service indication becomes visible (see Figure 38). While no calls and messaging are active on a specific channel, the Call Progress area is blanked and Radio ID area of the channel box indicates the last call ID or alias. If no calls have been connected on the channel (following initial startup), the Radio ID field is blank.

Figure 38: MAP27 Idle State

Non-Aliased | Aliased | (Startup)

CHANNEL TITLE — Unit 23 — 51
CHANNEL TITLE — LT. SMYTHE — 51
CHANNEL TITLE — 51
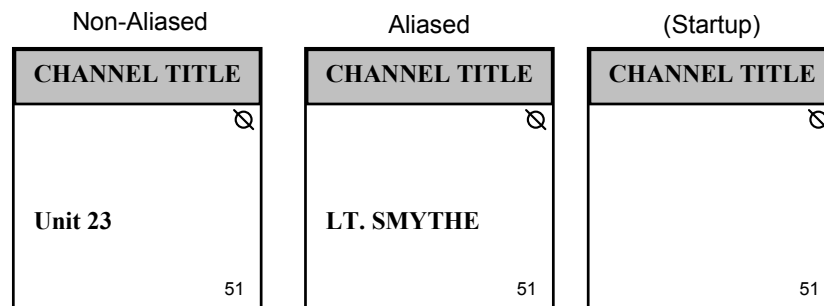
Call Connected State

When the radio is in a call and a maximum call duration is setup for that radio, the remaining call duration is displayed instead of the service indication. 10 seconds before the call times out, a warning tone shall be activated.

> **Note** When the channel is connected to a M427, the call duration is not displayed but a warning tone shall be activated 10 seconds prior to the call timing out.

Call History Window

When enabled, the window, as shown in Figure 39, shows a list of received status codes, SST messages, and calls as they are received from the field units. The information includes the following:

- **TalkGroup/Chan** (the MAP27 channel on which a group, individual, status, or SST call was received) - The MAP27 channel displayed matches the display in the channel box.
- **Group Name** - Alias(es) for associated Radio Groups of identified Subscriber IDs are displayed here. (Group Names must be programmed during configuration.)
- **ID** (the calling radio's ID) - Individual call IDs can be aliased to a 10-character alphanumeric string.

- **Long Alias** - User may program a longer alias (up to a 20 character, alphanumeric string) for a private ID. This alias is optional and is only displayed in the Call History Window.

- **Status** (the call or message status) - For status messages, the displayed status depends on the received status code. The status codes can be aliased to a 10-character alphanumeric string. For SST messages, the SST Text (up to 25 characters) is shown. For individual calls, the status "`-Indiv.-`" is always shown. For group calls, "`--Group--`" is always shown. For Emergency calls, the icon is a red double triangle.

- **Date/Time** - In all cases, the date and time of reception are shown.

The icon at the front of each entry in the window identifies the type of call received. If a call is replied to, the icon is "checked" to indicate a reply. Several examples are shown in Figure 39.

Figure 39: Call History Window
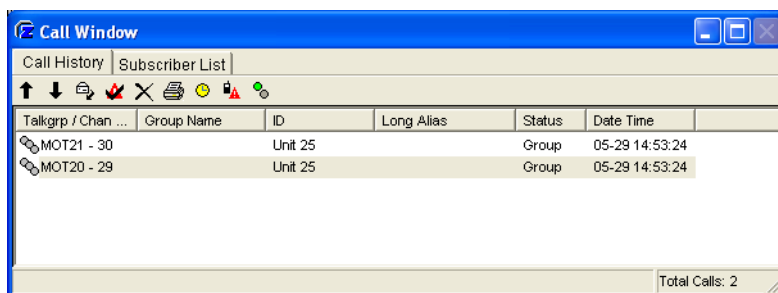
Call Log Files

The console logs each 24 hours of call activity to the PC hard disk. Each individual daily log file is created at 00:00 (midnight) and captures all entries made to the dispatch queue. The log file name is derived from the date. Table 12 shows example file names.

Table 12: Example Log File

File Name	Log File Date
Calls_2001.04.11.log	11 April 2001
Calls_1999.12.27.log	27 December 1999

Default location for call log files in Windows XP:
C:\Documents and Settings\All Users\Documents\Zetron\IntegratorRD\CallLogs

Default location for log files in Windows 7:
C:\Users\Public\Documents\Zetron\IntegratorRD\CallLogs

> 📝 **Note** This is the default location for the current version of IntegratorRD. The default location for prior versions varies.

An excerpt from a typical log file is shown below:

RX	04/11/2001 14:46:26	MAP27	map21	Unit 29					Indiv
RX	04/11/2001 14:46:29	MAP27	map21	Unit 23					Group
RX	04/11/2001 15:01:56	MAP27	map22	map21					GO TO 123 ELM ST
RX	04/11/2001 15:02:00	MAP27	map21	Unit 23					Indiv
RX	04/11/2001 15:02:04	MAP27	map21	Unit 23				Ack	Indiv
RX	04/11/2001 15:10:12	MAP27	map21	Short25	Kelly Smith				Indiv
RX	04/11/2001 15:10:13	MAP27	map21	Unit 29					Group
RX	04/11/2001 15:10:24	MAP27	map22	map21					On Break
RX	04/11/2001 15:10:27	MAP27	map22	Unit 23			(E)		Indiv

Following is the description for each of the columns:

- Signal Type – RX (incoming call)
- Date Time – date and time the call came in
- Channel Type
- Channel Name/Alias
- Source ID or Alias
- Source Long Alias
- Destination ID or Alias (only for MDC-1200)
- Destination Long Alias (only for MDC-1200)
- Emergency
- Acknowledge
- Call Type – individual, group, status code, or short text message

MAP27 Controls Operation

Receiving a Voice Call

When receiving a voice call, the channel box displays the radio ID making the call; the receive active indication is activated (see Figure 40). "Indiv" or "Group" is shown in the Call Progress/Status field. If voice audio is detected, the CALL indicator activates.

These indications show the user that the call has been connected. The calling radio ID displays as "Unit" plus a two or three digit address (per MPT1343), as the alias string (up to 10 characters) if the calling radio ID matches an alias entry in the alias table, or "Interfleet" if the address is not part of the radio's programmed fleet.

Figure 40: MAP27 Received Call Indications
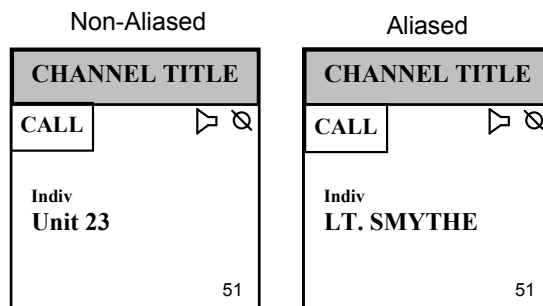
Responding to a Call

Once a call has been received, the user can transmit voice to the distant end radio by either selecting the channel and using the selected channel Xmit button, by highlighting the channel and using the Inst Xmit button, or (if a mouse is being used) placing the mouse over the channel box and pressing the right mouse button. If RDPS "Go To Channel Beep" is enabled, a beep is activated to inform the operator when the channel is ready for voice transmission. The "BSY" indication activates, indicating that the transmitter is busy. The receive active indication is removed during transmit.

Releasing the Xmit button (or right mouse button) clears the BSY indication, and the receive active indication returns.

Terminating a Call

Pressing the Call Disconnect button terminates the call on the highlighted channel. The channel box Call Progress area is blanked.

Receiving an Emergency Call

When receiving an emergency call, 5 beeps or continuous tone (set through RDPS) should be heard through the audio panel; the channel box indicates the radio ID or alias as in a normal voice call, but the ID is <u>flashing</u> and in <u>red</u>. The emergency tone may be deactivated using "Alarm Ack" key and the display may be cleared by transmitting on the channel receiving the emergency or activating the "Call Discon" key.

Receiving a Site-Wide Call

When a console channel is receiving a site-wide call and if the radio connected to the channel supports site-wide call display, the channel icon displays "Sys Wide" indicating that the channel is part of a site-wide call.

Receiving a Status Message

A radio in the field can send a status update to the dispatcher. The received status is displayed in the Call Progress/Status area of the channel box, and the radio ID that sent the status is displayed in the Radio ID area (see Figure 41). The status code can be aliased, as shown below. The status aliasing table is configured using the RDPS program.

Figure 41: MAP27 Status Call indication

Non-Aliased

CHANNEL TITLE

Status
27

Aliased

CHANNEL TITLE

In Route
STEVE H.
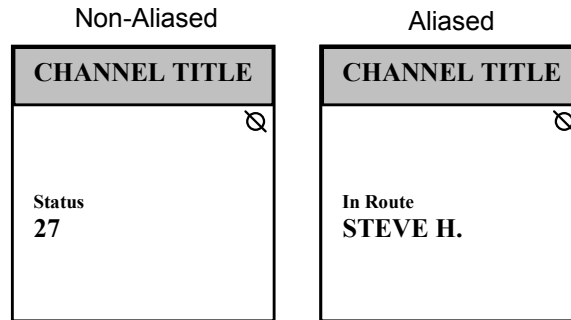
Receiving an SST (Short Status Text) Message

A radio in the field can send an SST message to the dispatcher. "SST Rx'd" appears in the Call Progress/Status area of the channel box, and the radio ID that sent the status is displayed in the Radio ID area (see Figure 42).

Figure 42: MAP27 SST Call indication

CHANNEL TITLE

SST RX'd
Radio 27
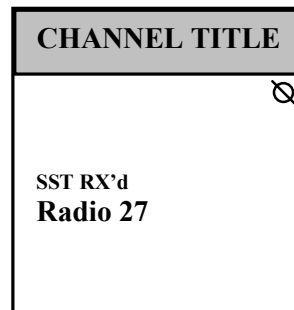
Initiating a Call

A channel always stores the radio ID of the last call. If the desired destination of the user's call is the same radio, the user can press one of the standard transmit buttons (Xmit, Inst Xmit, right mouse button, footswitch, etc.) to setup a voice call. The Send, Send Pri'ty, or Send Emerg call buttons also initiate a specific type of call to the last radio ID. The radio ID or alias displays in the Radio ID area of the channel box.

If "Default Call ID" is configured for the channel, any call initiated from this channel is directed to the ID configured in "Default Call ID".

If you want a different ID, or if you press Status Select, SST Select, or DynGrp Select from the MAP27 Call submenu or the Subscriber List Window, then you must enter a new ID. The ID entry can be entered either by pressing a Subscriber ID button on the MAP27 Call submenu or in the Subscriber List Window, or by manually entering the ID from the keyboard or audio panel keypad.

Once the call is connected and the operator is keying up, if RDPS **Go To Channel Beep** is enabled, a beep is activated to inform the operator when the channel is ready for voice transmission.

Initiating a call on a busy channel may result in two ways depending on whether the option, **Trunk outgoing calls when busy**, is enabled or disabled. If this option is enabled, the call is trunked to the next available MAP27 channel; otherwise, a busy indication is displayed.

Terminating a Call

Pressing the Call Discon button on the screen terminates an active voice call.

For all call types, the Call Progress area of the channel box shows the progress of the call setup. The progress conditions are shown in Table 13.

Table 13: MAP27 Operation Call Progress Messages

Indication	Description
Rad Discon	The connection between the channel card and the radio is not responding.
Indiv	An individual call has been set up.
Group	A group call has been set up.
Status OK	The status transmission was acknowledged.
SST RX'd	SST message received – the text of the message is shown in the Call History window.
Inv Number	The ID entered does not conform to MPT1343 rules.
No Number	No ID was entered.
Alerted	The call unit is alerted.
Alerting	The call unit is alerting.
Queued	A call attempt has been queued.
Emergency	The emergency call is proceeding.
Diverted	The call has been diverted.
Rejected	A call attempt has been rejected (system overload).
Canceled	The call was aborted/not successful.
Out of Rch	Called unit is unavailable (normal or diverted).
Unit Busy	The called unit is busy.
Call Back	Called unit will call back.
Inv Status	The status number sent is invalid.
Regroup Proc	The radio is currently sending the Dynamic Regroup information over the air.
Regroup OK	The Dynamic Regroup message was successful.
Regroup Fail	The Dynamic Regroup message failed to complete.

Initiating a Site-wide Call

The console allows operator to send a site-wide call by activating an instant call page button that has been configured to send a site-wide call. Please refer to *Series 4000*

Installation and Configuration Manual (Zetron Part # 025-9533) for the command sequences.

Initiating a Diverted Call

When an operator calls a radio that has been diverted to another radio, the call is automatically routed to the diverted radio. If the channel used to make the call out is connected to a Motorola radio, the channel icon displays the original called ID. If the channel is connected to a Tait or M427, the channel icon displays the diverted ID.

MAP27 ID Entry

From the main screen, the MAP27 Call submenu, or the Subscriber List Window, enter the desired radio ID in standard 2-digit to 10-digit MPT1343 form. Press a MAP27 call button (Send, Send Pri'ty, Send Emerg) to initiate the call.

Here are some examples of ID entries:

- 2-digit (ID2 only): 21, 25, 34, 90, 91
- 3-digit (ID3 only): 201, 245, 223, 901, 923
- 6-digit (base ident + ID2): 201025, 201025, 200192
- 7-digit (base ident + ID3): 2010205, 2010223, 2001923
- 9-digit(prefix + base ident + ID2): 260201026, 260200195
- 10-digit(prefix + base ident + ID3): 2602010224, 2602001905

Sending a Status Code

There are two ways to send a status code to another radio:

- From the main screen, enter the status code followed by the radio ID, and then press **Send**. The entry format is as follows:

  0nn<ID> where "nn" is a two digit status number between 00 and 31.

  An example (send status code "12" to ID 28) is,

  *012*28 "Send"

- From the MAP27 Call submenu or the Subscriber List window, enter the radio ID (either by clicking Subscriber ID or by manually entering the ID), then click the "Status Select" button. This brings up a Status selection submenu or subwindow, which shows any programmed MAP27 Status ID aliases (see Figure 43 and Figure 44). After selecting a Status ID button, or manually entering the 2-digit status code (1-31), click **Send Status** to send the message. Pressing the **Exit** button returns you to the main MAP27 Call submenu or to the main Subscriber List window.

Figure 43: MAP27 Status Selection Submenu
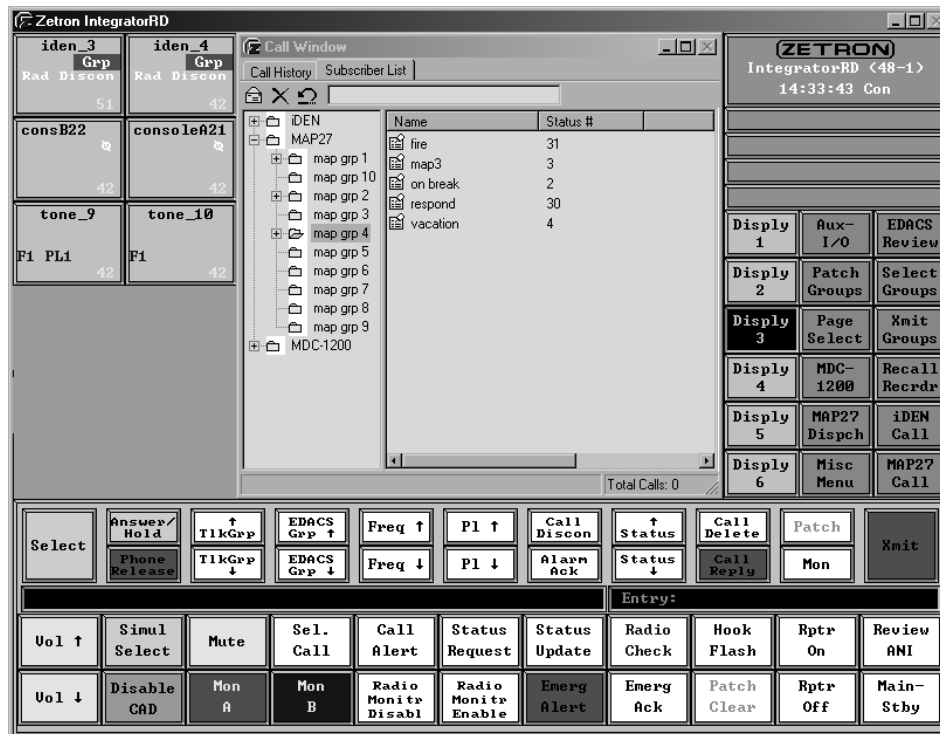
Figure 44: MAP27 Status Selection Subwindow
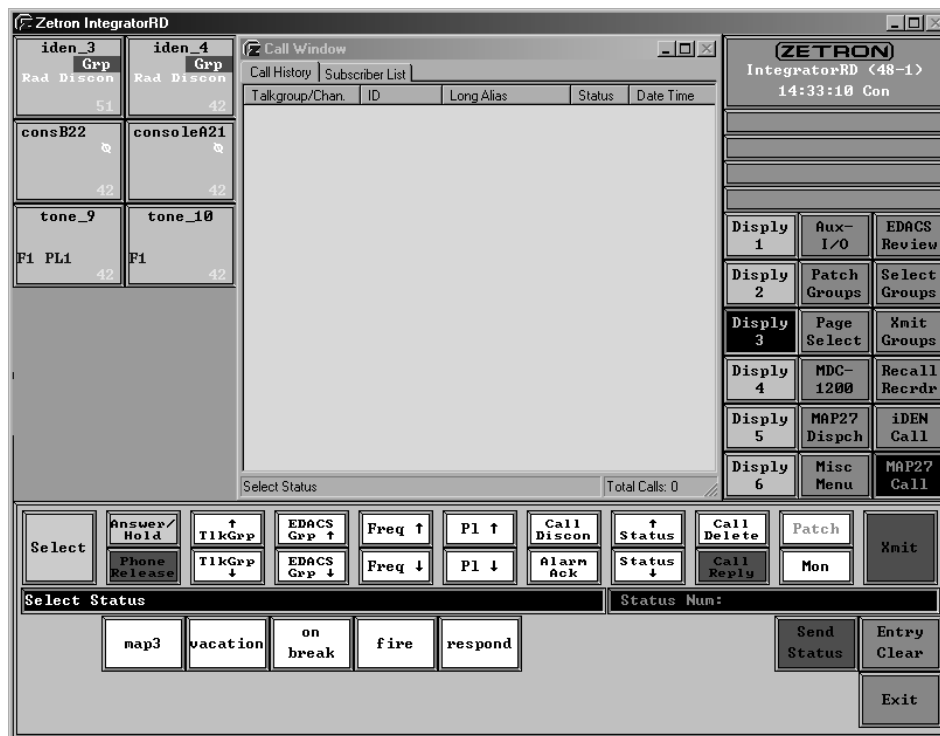
Sending an SST (Short Status Text) Message

From the MAP27 Call submenu or the Subscriber List window, enter a radio ID (either by pressing a Subscriber ID button or by manually entering the ID), then press the **SST/MST Select** button. This brings up an SST message selection submenu/subwindow (see Figure 45 and Figure 46), which shows any programmed SST buttons. After selecting an SST button, or manually entering the SST text from the keyboard (from 1 to 100 characters), click **Send SST/MST** to send the message. Clicking **Exit** returns you to the main MAP27 Call submenu, or to the main Subscriber List window.

Figure 45: MAP27 SST/MST Selection Submenu
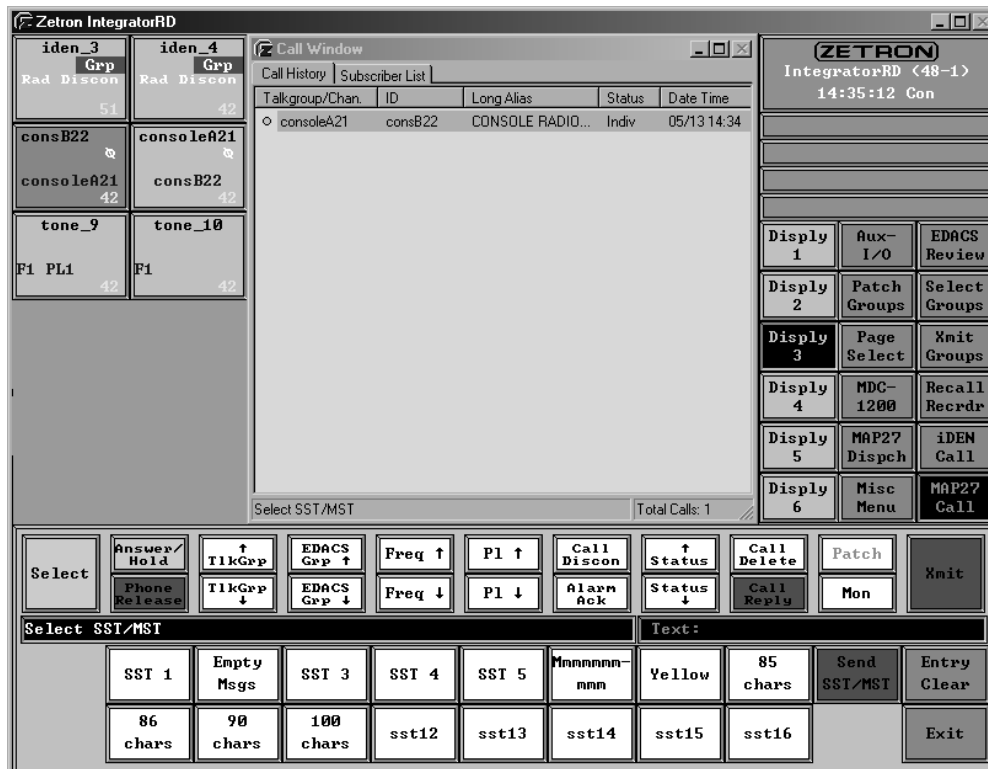
Figure 46: MAP27 SST/MST Selection Subwindow
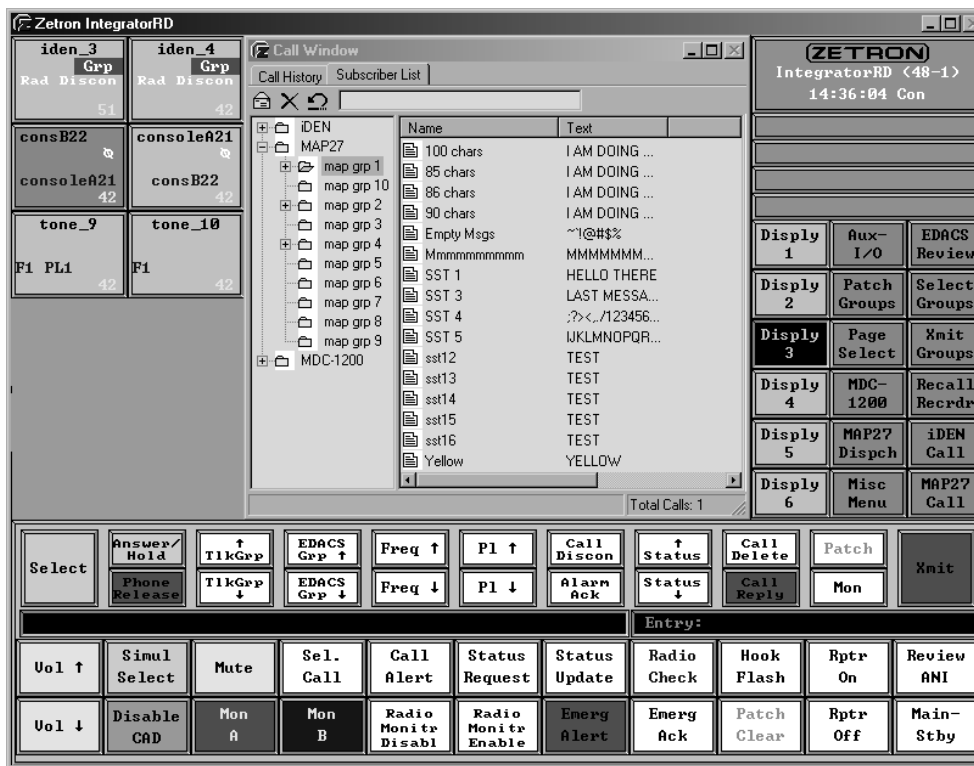
Setting Dynamic Groups

In addition to the group IDs that the radios (any field radio) are preprogrammed to respond to, they can be configured to respond to an additional set of group IDs. This is termed "dynamic regrouping." The console configuration can include buttons that assign any combination of 1-16 groups to any radio selected.

From the MAP27 Call submenu or the Subscriber List window, enter a radio ID (either by pressing a **Subscriber ID** button or by manually entering the ID), then press the **DynGrp Select** button. This displays a Dynamic Regroup button selection submenu or subwindow (see Figure 47 and Figure 48), which shows any programmed Dynamic Regroup buttons.

A valid Dynamic Regrouping entry contains from 1 to 16 group ID entries, separated by commas. For example, an entry of `90,91,92,93,94` would tell the radio to monitor groups 90, 91, 92, 93, and 94 and would clear any previously set groups in the dynamic group space.

After selecting a Dynamic Regroup button, or manually entering the group(s) from the keyboard, press **Send DynGrp** to send the message. If the command is successful, "Regroup OK" is displayed in the Call Progress area. If the command is not successful, "Regrp Fail" displays.

The **Clear DynGrps** button clears the entire Dynamic group space in the radio selected. Pressing the **Exit** button returns the main MAP27 Call submenu or to the main Subscriber List window.

Figure 47: MAP27 Dynamic Group Selection Submenu
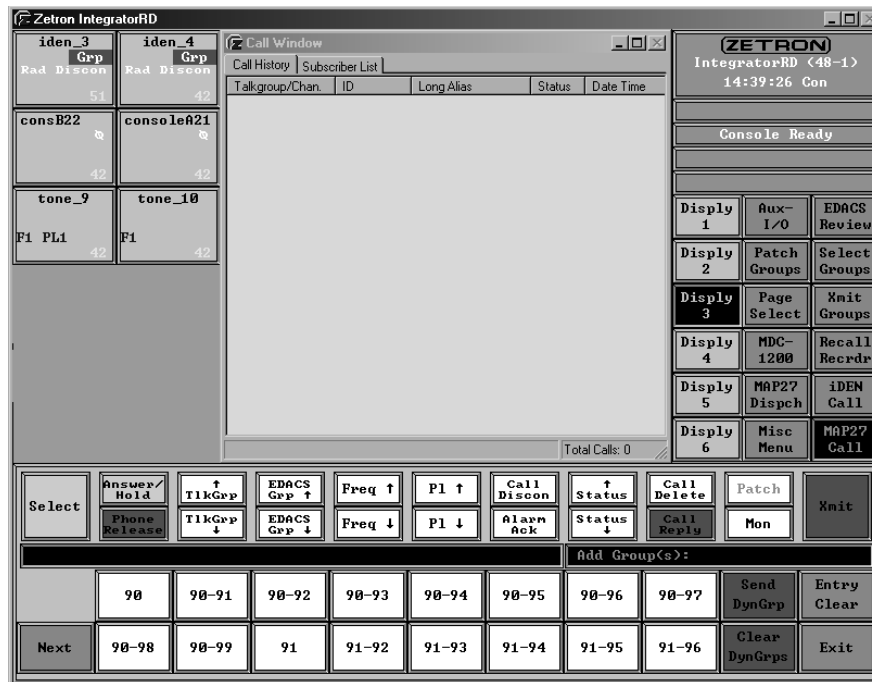
Figure 48: MAP27 Dynamic Group Selection Subwindow
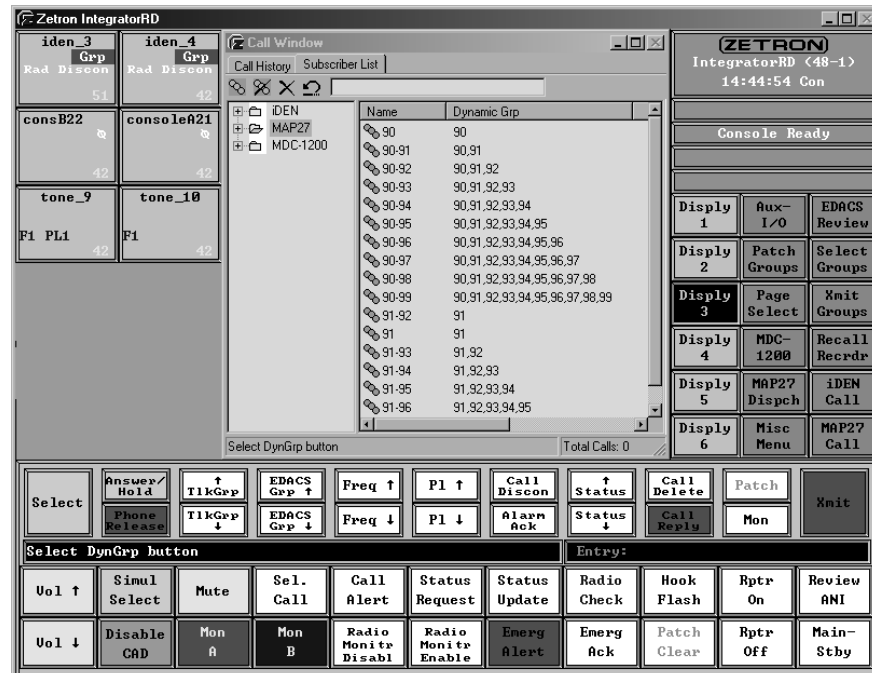
MAP27 Operation From The Audio Panel

Basic calling is available from the Audio Panel, using the programmable buttons and keypad. The front of the Audio Panel is shown in Figure 49.

Figure 49: MAP27 Audio Panel Entry

Display Area

Keypad   Programmable
Keys
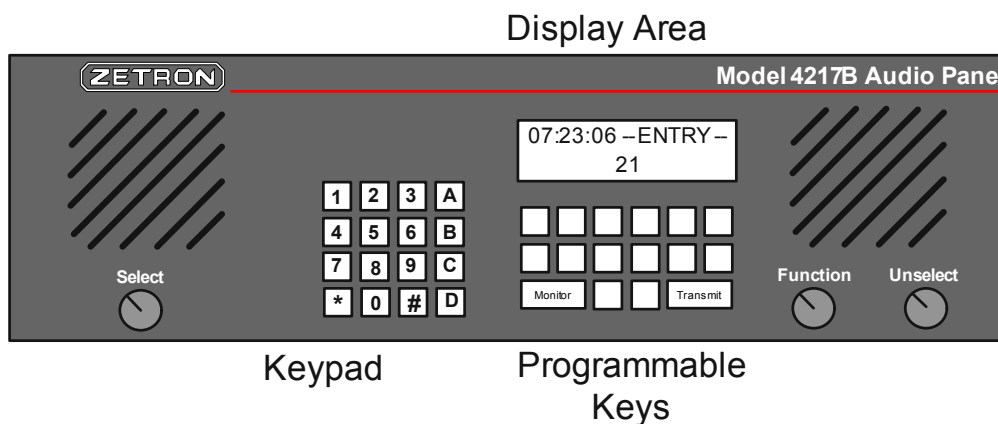
In order to use the Audio Panel with the MAP27 interface, at least one Call key (Send, Send Pri'ty, or Send Emerg) and a Call Disconnect key must be preprogrammed (using RDPS). Dynamic Regrouping and SST are available from the audio panel as instant call pages.

Call setup entries at the audio panel operate on the highlighted channel for the Send, Send Pri'ty, Send Emerg, and Inst Xmit buttons and on the selected channel for the Xmit button.

Making a Call

An ID entry can be done from the audio panel keypad at any time regardless of the menu that is currently displayed on the video screen. The format for the ID is a standard 2 to 10 digit MPT1343 form. This ID entry is displayed as it is entered in the lower right quadrant of the audio panel display (see Figure 49). An entry at the audio panel is not shown on the IntegratorRD.

After the desired ID is entered, press the Send, Send Pri'ty, or Send Emerg button on the audio panel to initiate a call. The call is made on the currently selected channel.

Terminating a Call

Pressing the Call Disconnect button on the audio panel terminates an active call on the selected channel.

MAP27 Instant Call Paging

You may configure instant call page(s) to execute some of the MAP27 functions. Please refer to the Radio Dispatch Programming Software manual (Zetron Part # 025-9457) for the command sequences.

MAP27 Dispatcher (427) Functions

Incorporation of M427 Dispatcher Port interface support into the IntegratorRD adds a MAP27 Dispatcher submenu, and the option of adding Dispatcher-specific buttons to the main screen, so the user can perform Dispatcher operations on each M427 Dispatcher Port. In addition, each M427 Dispatcher Port supports all existing MAP27 features using the MAP27 Call submenu or preprogrammed buttons or Subscriber List window.

> **Note** Call Diversion and MST messaging has been added for both M427 Dispatcher Ports and standard MAP27 radios.

MAP27 Dispatcher Submenu

A MAP27 Dispatcher submenu is available with the submenu buttons on the right hand side of the main screen. This submenu replaces the bottom two rows of the IntegratorRD buttons with a list of the programmed MAP27 subscribers and all the Dispatcher-specific control buttons while active. See Figure 50.

The alias labeled Subscriber ID buttons allow the entry of ID digits into the Radio ID entry field using the mouse or a touch screen.

The user can also manually enter a radio ID using the audio panel keypad or the keyboard.

The Dispatcher-specific control buttons are also available from the Subscriber List window.

Figure 50: MAP27 Dispatcher Submenu
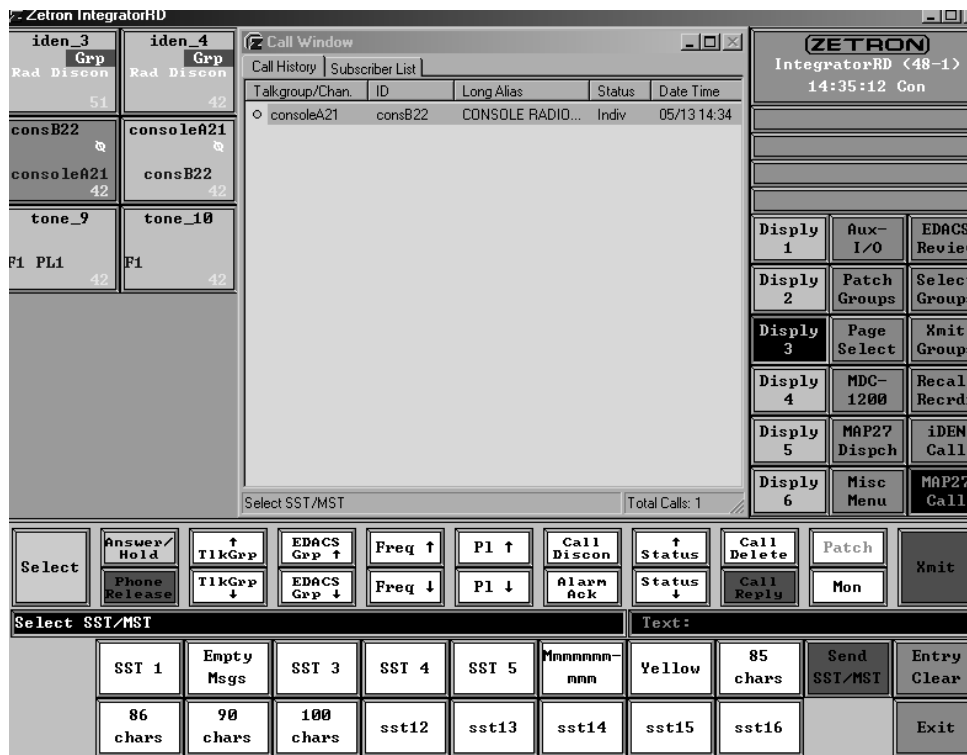
M427 Dispatcher Controls Operation

Radio Availability Check

To query a field radio's availability status, enter a radio ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then press the **Radio Check** button (preprogrammed button only, not available on any submenu or Subscriber List window). The first idle M427 Dispatcher Port is automatically highlighted. The result of the radio availability check is displayed in the channel box (example: "Rad Avail.").

The **Radio Check** button can also be used to query the complete identification (prefix + fleet + ID Number) of a MAP27 channel connected to the console. To do this, highlight the MAP27 channel and press the **Radio Check** button. The highlighted channel box displays the complete identification number of that channel.

Radio ESN (Electronic Serial Number) Check

To query a field radio's ESN information, enter a radio ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then press the **Check ESN** button (preprogrammed button only, not available on any submenu or Subscriber List window). The first idle M427 Dispatcher Port is automatically highlighted. Then the ESN of the queried radio is displayed in the lower left text area of the console. (Example: "ESN INFO: Man. Code: 2 / Model # 7 / Serial # 79245").

Self-diversion

Calls to a console-connected radio or M427 Dispatcher Port may be diverted to another radio ID by the dispatcher. This is termed a "self-diversion." To divert calls from a console or M427 Dispatcher Port, highlight the channel corresponding to that ID. Next enter a radio ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then press the **Self Divert** button (available in the "MAP27 Dispatcher" submenu or Subscriber List window or as a preprogrammed button). A message indicating success or failure of the operation is displayed in the channel box, and the channel name changes to "DIVERTED." To cancel the diversion, highlight the diverted channel and press the **Cancel Divert** button (available in the "MAP27 Dispatcher" submenu or Subscriber List window or as a preprogrammed button). Assuming the diversion cancel is successful, the channel name reverts to the Radio ID.

Third Party Call Diversion

Calls to a field radio may be diverted to another field radio ID by the dispatcher. This is termed a "third party diversion." To divert calls from a field radio, enter the radio's ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then click **3rd Pty Divert** (available in the "MAP27 Dispatcher" submenu or Subscriber List window or as a preprogrammed button). Now enter a second ID (the radio to which the calls should be diverted) and click **3rd Pty Divert** again. The first idle MAP27 channel should be automatically highlighted, then a message indicating success or failure of the operation is displayed in the channel box. To cancel the diversion, enter the diverted radio's ID and press the **Cancel Divert** button (available in the "MAP27 Dispatcher" submenu or Subscriber List window or as a preprogrammed button). A message indicating success or failure is displayed in the channel box.

Example: Radio ID #25 goes off duty and wants calls diverted to Radio ID #22. One of these IDs would ask the dispatcher to do the diversion. The dispatcher would enter 25, **3rd Pty Divert**, 22, **3rd Pty Divert**. When the diversion should be cancelled, the dispatcher would enter 25, **Cancel Divert**.

Radio Disable/Enable

A field radio may be disabled by the dispatcher. In this case, the field radio is blocked by the trunking equipment from making any voice or data calls. The radio may also be re-enabled. To perform a Radio Disable or Enable, enter a radio ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then press the **Radio Disable** or **Radio Enable** button (available in the "MAP27 Dispatcher" submenu or Subscriber List window or as a preprogrammed button). The first idle M427 Dispatcher Port is automatically highlighted, then a message indicating success or failure of the operation is displayed in the channel box (example: " Disable OK" or "Enable Fail").

System Priority Change/Restore

The System Priority level may be changed by the dispatcher (for instance in an emergency you may want to increase the priority level to filter out non-priority traffic). To change the System Priority level, press the **Pri'ty x** button (available in the "MAP27 Dispatcher"

submenu or Subscriber List window). From the MAP27 Dispatcher submenu, pressing the button multiple times displays Priority 0, 1, 2, 3, then "Restore." The Subscriber List subwindow lists the priority selections 0, 1, 2, 3, and "Restore." Select the desired Priority level ("Restore" brings the level back to the level programmed in the M827 database), then press the **Set Pri'ty** button. The first idle M427 Dispatcher Port is automatically highlighted, then a message indicating success or failure of the operation displays in the channel box. The **Pri'ty x** button displays the current Priority level.

Call Type Filtering

The Call Types allowed by a radio or M427 Dispatcher Port may be changed by the dispatcher. To view or change the Call types allowed for a console-connected radio or M427 dispatcher port, highlight the desired MAP27 channel and click **Call Types** (available in the "MAP27 Dispatcher" submenu or Subscriber List window). A new sub-menu/sub window displays showing the current state of the Call filtering for the selected radio or Dispatcher Port (options are Voice Call, Status Call, SST/MST call, and CallBack mode). A black button or "1" indicates the option is enabled and a white button or "0" indicates the option is disabled. Click the buttons or select the options to toggle the state of any options, then click **Perform Update**. A message indicating success or failure of the operation appears in the channel box, and the option buttons reflect the revised status of Call filtering. See Figure 51.

> 📝 **Note** Some radios do not support this feature. In this case, the message **Not Spprtd** is displayed in the channel box.

Figure 51: MAP27 Call Type Filtering Submenu
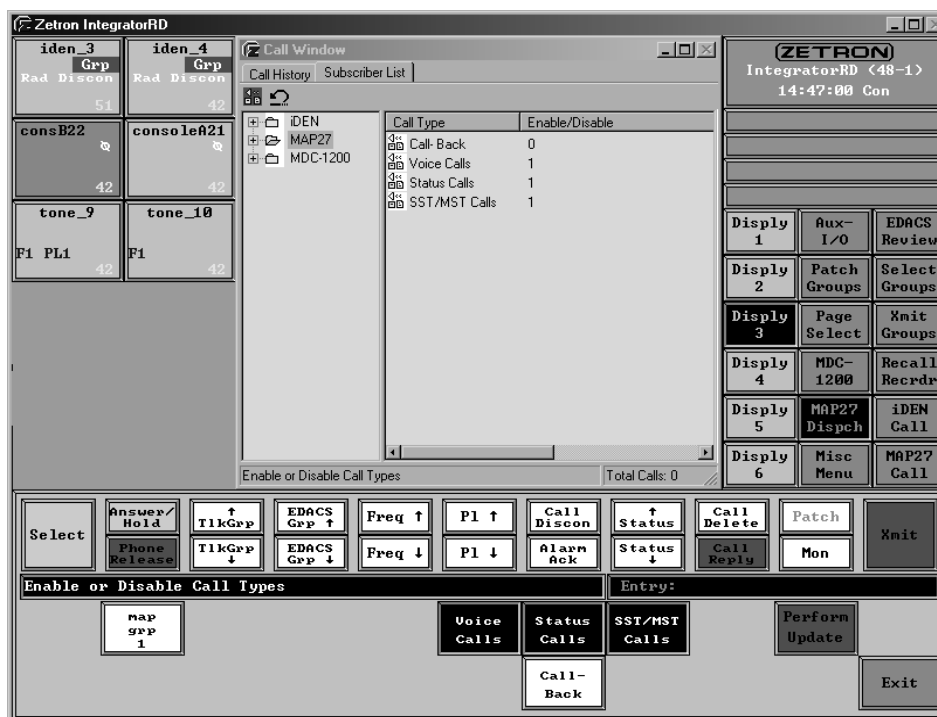
Dynamic Regrouping (M427 Port)

In addition to supporting dynamic regrouping of a field radio, the M427 Dispatcher Ports may also reassign its own 16 dynamic groups (termed "self-regrouping"). In this case, you highlight the Dispatcher Port channel and click **DynGrp Select** (available in the "MAP27 Call" submenu or Subscriber List window). Please note that, NO ID should be entered before this operation. This is how the console program knows that a self-dynamic regroup is required instead of a field radio regroup. At this point you may either click **Clear DynGrps** to clear all sixteen dynamic group slots, or assign from 1 to 16 slots by selecting a preprogrammed group button, or entering valid group IDs (comma-separated), then clicking **Send DynGrp**. In both cases, the channel box displays a message indicating success or failure of the operation.

Table 14 shows channel box status messages that are new to the M427 Dispatcher Port operation.

Table 14: M427 Dispatcher Operation Progress Messages

Indication	Description
Divert OK	The diversion request was successful.
Divrt Fail	The diversion request failed.
Dcancel OK	The diversion cancel request was successful
Cancel Fail	The diversion cancel request failed.
Enable OK	The request to re-enable a radio was successful.
Enabl Fail	The request to re-enable a radio failed.
Disable OK	The request to disable a radio was successful.
Disabl Fail	The request to disable a radio failed.
Rad Avail.	The Radio ID is available and idle (availability check).
Invalid ID	The ID requested is not valid (availability check).
Rad Busy	The Radio ID is busy (availability check).
Rad Queued	The Radio ID is queued (availability check).
No Respnse	The Radio ID did not respond (availability check).
ESN Below	Full ESN information is shown in the console text window.
Pri'ty OK	The priority change request was successful.
Invld P'ty	Invalid priority level request.
Alrdy Used	Priority already restored to requested level.
Proc'ing	The Call filtering request is processing.
SettingsOK	The Call filtering request was successful.
Msg Fail	The Call filtering request failed.
Mismatch	Radio state mismatch.
Not Spprtd	Feature not supported by radio.
Unrecognized	Command requested not recognized by radio.

MDC-1200 Functions

> **Note** Some MDC functions require an optional license. If you do not have the license and you attempt to access the optional features, the following message is displayed: **MDC-1200 Feature is disabled**.

Incorporating the MDC-1200 interface support into the IntegratorRD adds the MDC-1200 Call submenu, and the option of adding MDC-1200-specific buttons, to the main screen. This allows calls to be made on each MDC-1200 radio. A Call Window can be enabled, which has two sub-windows. The first tab displays the Call History Window to show a list of received status codes, call alerts, and selective calls. The second tab displays the Subscriber List window, which shows subscriber IDs and MDC-1200-specific buttons so that calls can be made from this window instead of the MDC-1200 Call submenu.

MDC-1200 Submenu

An MDC-1200 Call submenu is available with the submenu buttons on the right hand side of the main screen. This submenu replaces the bottom two rows of the IntegratorRD buttons with a list of the programmed MDC-1200 subscribers and all of the MDC-1200 specific control buttons. This submenu is only accessible if the RDPS "Full-featured MDC-1200" option is selected and an MDC-1200 feature license is installed.

If the configuration is programmed for multiple groups of MDC-1200 radios (up to 10 groups), a screen similar to Figure 52 is displayed. Selecting one of these group buttons displays a set of related MDC-1200 Subscriber IDs as shown in Figure 53. If more than 12 IDs are programmed for the group selected, the IDs can be navigated using the **Next** and/ or **Prev** buttons. At any point, using the **Back (Grps)** button returns the user to the main screen showing the Radio groups.

If no MDC-1200 radio groups are programmed, all the radio IDs (8 per screen with **Next** and/or **Prev** buttons to navigate) are displayed on the main screen as shown in Figure 54.

Figure 52: MDC-1200 Call Submenu, MDC-1200 Radio groups
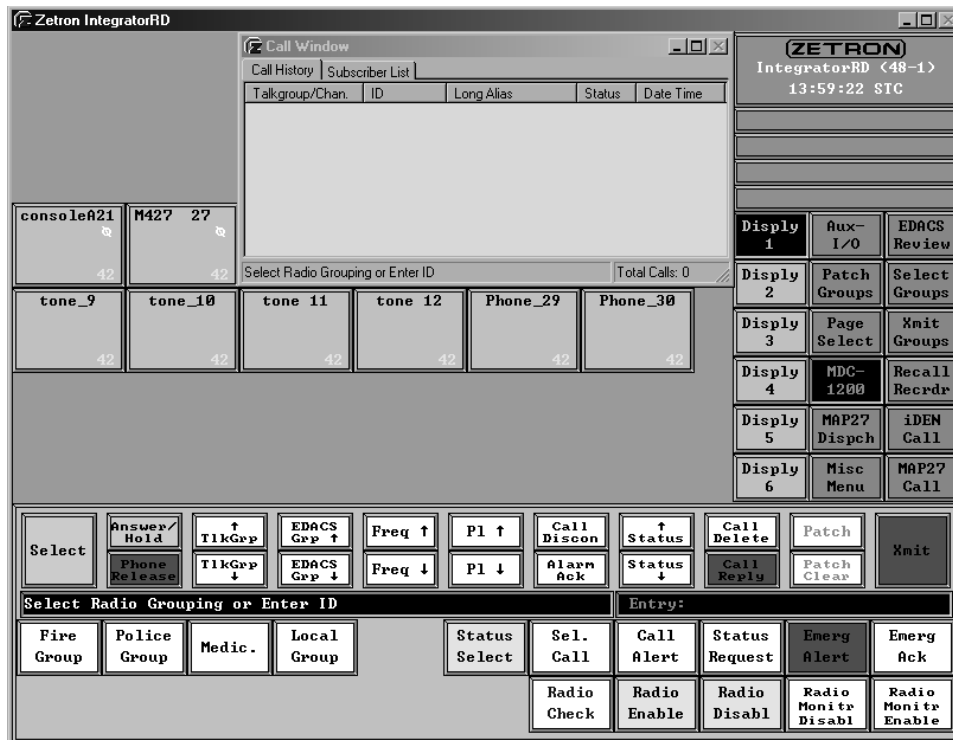
Figure 53: MDC-1200 Call Submenu, MDC-1200 Radio IDs within a Group
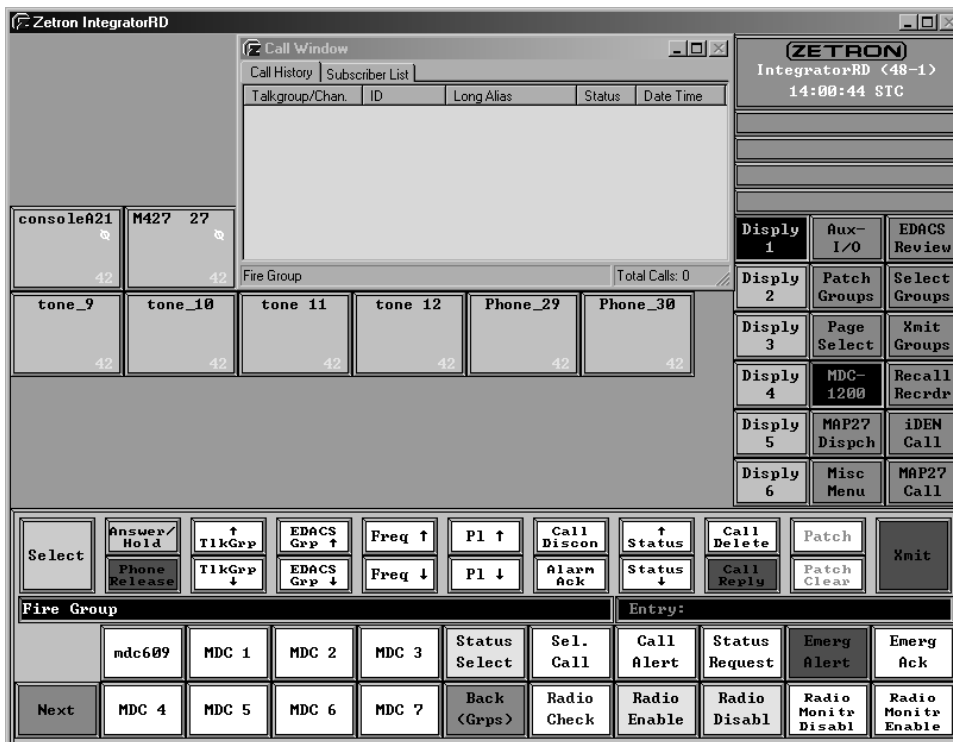
Figure 54: MDC-1200 Call Submenu, IDs with no Radio Groups
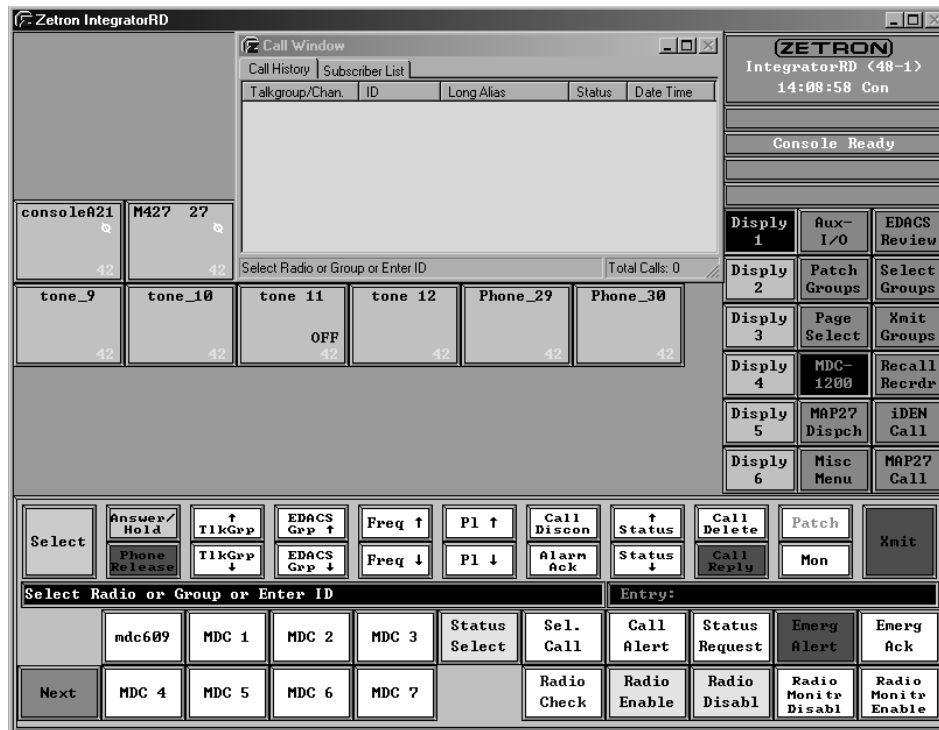
The alias-labeled Subscriber ID buttons allow the entry of ID digits into the Radio ID entry field using the mouse or a touch screen. The user can also manually enter a radio ID using the audio panel keypad or the keyboard.

MDC-1200 Subscriber List Window

The user can use the Subscriber list window instead of the MDC-1200 Call submenu. This window also displays the MDC-1200 groups, the subscriber IDs programmed for those groups, and the MDC-1200-specific control buttons. This allows operation similar to the MDC-1200 Call submenu. See Figure 55.

Figure 55: MDC-1200 Subscriber List Window
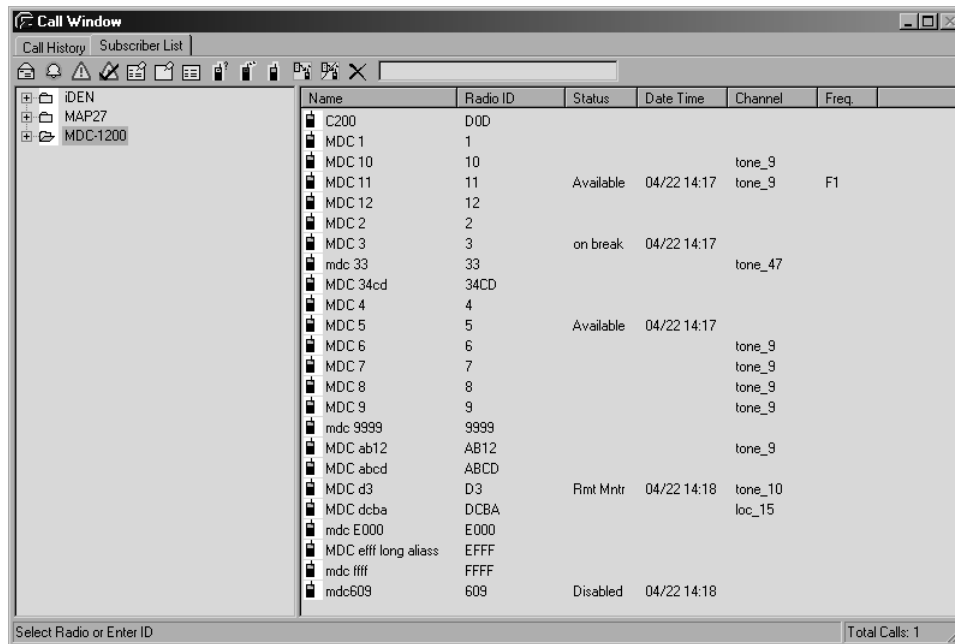
The Subscriber List window includes the following information:

- Name – the alias of a subscriber ID.
- ID – the ID number of the subscriber. (For information about Zetron iRIM IDs, see *Zetron iRIM Type A and B Operation* on page 141.)
- Status – the latest status information received.
- Date Time – the time when the status information was received.
- Channel – the subscriber's revert channel.
- Freq. – the subscriber's revert frequency.

Table 15: MDC-1200 basic status information

Indication	Description
Available	The radio is available (on line).
No Respnse	The radio did not respond to the radio check message.
Disabled	The radio is disabled (off line).
Rmt Mntr	The radio is being remotely monitored.

Channel Box

Each channel box on the IntegratorRD displays the transmit/receive activity of that particular radio channel. The MDC-1200 channel box has the indicators shown in Figure 56.

Table 16 lists the MDC-1200 call progress messages.

Figure 56: MDC-1200 Channel Box
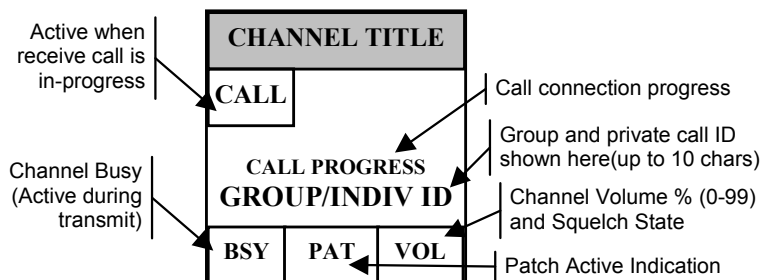
Table 16: MDC-1200 Operation Call Progress Messages

Indication	Description
Proc'ing	Processing the request, sending MDC-1200 signal.
Transmit..	Transmitting over the air (talk time).
Emergency	The operator has declared an emergency.
Disabled	The workstation channel is disabled.
Stat Rx'd	The radio Status Request message has completed successfully.
Stat Fail	The radio Status Request message has failed.
No Respnse	No respond from the workstation channel.
Alert OK	The Call Alert requested has completed.
Alert Fail	The Call Alert requested has failed.
Rad Avail.	The Radio Check message has completed and the radio responded.
Enable OK	The Radio Enable request has completed successfully.
Enabl Fail	The Radio Enable request has failed.
Disable OK	The Radio Disable request has completed successfully.
Disbl Fail	The Radio Disable request has failed.
Msg OK	The requested command has completed.
Msg Fail	The requested command could not be completed.
Rejected	The requested command is not a valid request.

Call History Window

When enabled, the window (as shown in Figure 57) shows a list of received status codes, call alerts, and calls as they are received from the field units. The information includes the following:

- **TalkGroup/Chan** - The talkgroup on which a group call was received, or the MDC-1200 channel on which a selective call or call status/call alert was received. Talkgroup IDs may be aliased to a 10 character alphanumeric string. The MDC-1200 channel displayed matches the display in the channel box.

- **Group Name** - Alias(es) for associated Radio Groups of identified Subscriber IDs are displayed here. (Group Names must be programmed during configuration.)

- **ID** - Used for Selective Calls, Call Alerts, and Status Messages, the ID of the calling radio. Individual or group call IDs can be aliased to a 10 character alphanumeric string.

- **Long Alias** - User can program a longer alias, up to a 20 character alphanumeric string, for an individual or group ID. This is optional and is only displayed in the call history window.

- **Status** - Used for all calls, the call or message status. For status messages, the status displayed depends on the received status code. The status codes can be aliased to a 10-character alphanumeric string.

- **Date/Time** - In all cases, the date and time of reception is shown.

Figure 57: Call History Window with MDC-1200 calls
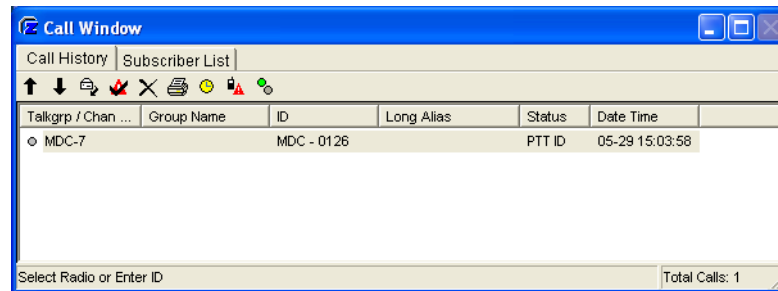
The icon at the front of each entry in the Window identifies the type of call received. Referring to Figure 57, the entry shown indicate:

- A PTT ID call from MDC 0126 received on channel tone 7.

Call Log Files

The console logs call activity to the PC hard disk. Each individual daily log file is created at 00:00 (midnight) and captures all entries made to the dispatch queue. The log file name is derived from the date. Table 17 shows two examples of file names.

Table 17: Example Log File Names

File Name	Log File Date
Calls_2001.04.11.log	11 April 2001
Calls_1999.12.27.log	27 December 1999

Default location for call log files in Windows XP:
C:\Documents and Settings\All Users\Documents\Zetron\IntegratorRD\CallLogs

Default location for log files in Windows 7:

C:\Users\Public\Documents\Zetron\IntegratorRD\CallLogs

Note This is the default location for the current version of IntegratorRD. The default location for prior versions varies.

An excerpt from a typical log file is shown below:

RX	02/14/2002 14:22:37	MDC-1200	tone_9	MDC 1				Selective
RX	02/14/2002 14:24:29	MDC-1200	tone_9	MDC 2	mdc609			Alert
RX	02/14/2002 14:24:49	MDC-1200	tone_9	MDC 3				PTT ID
RX	02/14/2002 14:25:19	MDC-1200	tone_9	MDC 5			(E)	Emergency
TX	02/14/2002 14:25:22	MDC-1200	tone_9	MDC 1				PTT ID
RX	02/14/2002 14:25:34	MDC-1200	tone_9	MDC 9				Emg. Ack
RX	02/14/2002 14:33:04	MDC-1200	tone_10	MDC 9				fire

Following is the description for each of the columns:

- Signal Type – RX or TX (incoming or outgoing call)
- Date Time – date and time the call came in or went out
- Channel Type
- Channel Name/Alias
- Source ID or Alias
- Source Long Alias
- Destination ID or Alias
- Destination Long Alias
- Emergency
- Acknowledge
- Call Type – PTT ID, Selective Call, Call Alert, Emergency, Emergency Acknowledge or the status code

MDC-1200 OPERATION

This subsection describes sending and receiving calls using the MDC-1200 interface of IntegratorRD.

Receiving a Selective Call

When receiving a selective call the "CALL" indication is activated and the calling unit radio ID (or alias, if enabled) is shown in the channel box during the call.

When the call is received, it is entered into the Call History Window with a status of "Selective," along with the channel, radio ID, and time of reception. If Radio ID aliasing is enabled, the alias string (up to 10 characters) is shown in place of the Radio ID. The ID alias table is preconfigured using the RDPS (Radio Dispatch Programming System) program.

Receiving a Status Message

A radio in the field can send a status update to the dispatcher. The received status is displayed in the Call History Window along with the time and radio ID from which the status was received.

The status numbers can be aliased to 10-character alphanumeric strings.

Receiving a Call Alert

A radio in the field can send a call alert to get the dispatcher to call back. The call alert is displayed in the Call History window with a status of "Alert" along with the time, radio ID, and channel from which the alert was received.

The call alert condition is automatically answered by the Dual Channel Card software if call alert response in enabled. This allows continued dispatching operation.

Receiving an Emergency Alert

When receiving an emergency call, the channel box indicates the radio ID or alias as in the normal voice call, but the ID is flashing and in red. An alarm also sounds if configured in RDPS that is cancelled when the dispatcher sends an emergency acknowledge message to the unit that declared the emergency or transmits on the channel where the emergency alert was received. The emergency display may also be cleared with **Review ANI** key and the audible alert may also be deactivated with **Alarm Ack** key.

The emergency alert is displayed in the Call History window with a status of "Emergency" along with the time, radio ID, and channel from which the emergency alert was received.

Initiating a Selective Call

To make a selective call, first select or enter the destination radio ID, then click **Selective Call**. If the selected radio does not have a revert channel programmed, you must select a channel for the transmission. You may now press the **Xmit** to activate the transmission. When the selective call mode is configured for toggle mode, **Selective Call** shall remain pressed after the transmission, and the same destination ID is used for subsequent transmissions until the **Selective Call** is toggled. When the mode is configured for "momentary", the **Selective Call** is deactivated after the first transmission.

The revert channel and selective call mode are configured using the RDPS program.

Initiating a Call Alert

The dispatcher can send a call alert to a radio from the MDC-1200 Call submenu, from the main video screen if programmed to do so, or from the Subscriber List window if enabled. The dispatcher selects the channel to be used for the transmission if no revert channel is configured for the destination radio, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then presses the **Call Alert** button. If the alert is successful, "Alert OK" is displayed temporarily in the channel display. If the alert is not successful, "Alert Fail" is displayed.

Initiating a Status Request

The dispatcher first selects the channel that is used for the transmission if no revert channel is configured, enters the destination radio ID (either by manual key entry or a Subscriber ID alias button), then presses the **Status Request** button. If the request is successful, "Stat Rx'd" is displayed temporarily in the channel display and the status response message is added to the Call History window. If the request is not successful, "Stat `Fail`" is displayed.

Updating Channel Status

To update a channel's status the dispatcher first selects/highlights the channel whose status is to be updated, then pressed the **Status Select** button from the MDC-1200 Call submenu or the Subscriber List window. This brings up a status selection submenu or subwindow (see Figure 58 and Figure 59), which shows any programmed MDC-1200 status ID aliases. After selecting a Status ID button, or manually entering the status code (1-255), the dispatcher presses **Status Update** to send the message. Pressing the **Exit** button returns the user to the main MDC-1200 Call submenu or to the main Subscriber List window.

Radio Availability Check

To query a field radio to determine its availability, the dispatcher must select a channel if no revert channel is configured for the destination radio. The dispatcher then enters the destination radio ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then presses the **Radio Check** button. If the radio responds, "Rad Avail." is displayed in the channel box. If the request fails, "No Respnse" is displayed.

If the destination radio ID is listed in the Subscriber List window, its status is updated to "Available" if it responds to the request or "No Respnse" if it does not.

Figure 58: MDC-1200 Status Selection Submenu
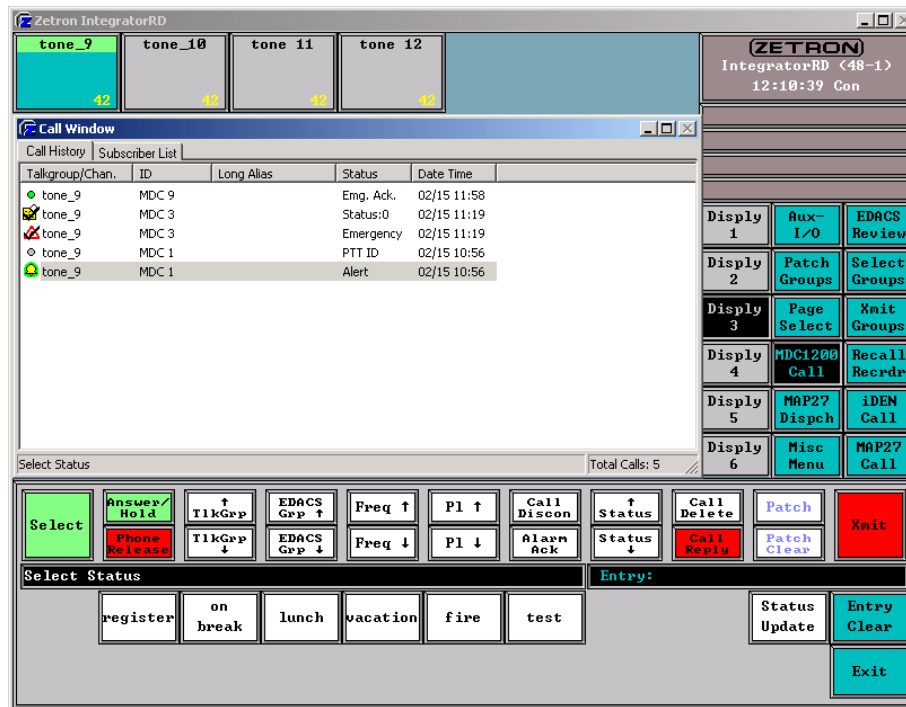
Figure 59: MDC-1200 Status Selection Subwindow
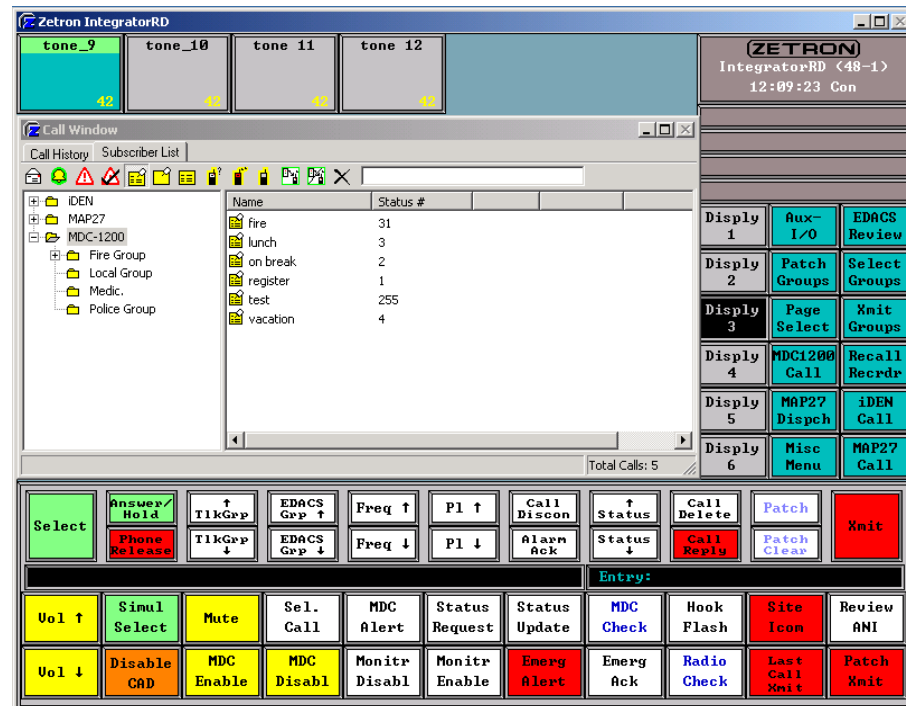
Radio Enable/Disable

A field radio may be disabled by the dispatcher. In this case, the field radio is blocked from making any voice or data calls. The radio may also be re-enabled. To perform a Radio Disable or Enable, select a channel if the destination radio is not configured with a revert channel. Enter the destination radio ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then press the **Radio Disable** or **Radio Enable** button. A message indicating success or failure of the operation is displayed in the channel box. (Example: "Disable OK" or "Enable Fail"). Access to this button requires UMS IntegratorRD MDC-1200 permission.

If the destination radio ID is listed in the Subscriber List window, its status is updated to "In Service" if enabled, "Disabled" if disabled or "Disabled?" if an attempt was made to disable a radio that did not respond.

Remote Monitor Enable/Disable

A field radio may be remotely monitored by the dispatcher. First select a channel if the destination radio is not configured with a revert channel; enter the destination radio ID (either by pressing/selecting a Subscriber ID button or by manually entering the ID), then press **Radio Monitr Disabl** or **Radio Monitr Enable.** A message indicating success or failure of the operation displays in the channel box (i.e., "Enable OK" or "Disable Fail"). Access to this button requires UMS IntegratorRD MDC-1200 permission.

If the destination radio ID is listed in the Subscriber List window, its status is updated to "In Service" if the monitor is disabled or "Rmt Mntr" if the monitor is enabled.

Emergency Alert

You may declare an emergency on a selected channel or on an emergency revert channel configured using RDPS. When sending an emergency call, the channel box displays a flashing red "Emergency" banner. The emergency indication is cleared when an emergency acknowledge is received.

RDPS can also be used to configure the emergency alert to functions silently. If the Emergency Mode is programmed for silent operation, the emergency alert is still sent but no indication is presented to the operator.

Emergency Acknowledge

You may send an emergency acknowledgment to a radio that has declared an emergency to indicate that the dispatcher is aware of the emergency. Pressing the **Emerg Ack** button acknowledges the last unacknowledged emergency call received. If the acknowledgment is successful, the channel box displays "Msg OK." If it fails, "Msg Fail" is displayed.

Zetron iRIM Type A and B Operation

This subsection describes receiving calls using the iRIM interface of IntegratorRD.

'Zetron iRIM Type A' operation is used to decode 'Mapped' IDs (Fleetsync and P25 protocols). 'Zetron iRIM Type B' operation is used to decode 'Full Fleetsync' IDs.

> **Note** The button-based Series 4000 console equipment is capable of using *only* the Zetron **iRIM Type A** ID functionality. Systems using the Integrator RD software-based consoles may use both the Type A or the Zetron **iRIM Type B** ID functionality.

Receiving a PTT-ID

When receiving a PTT ID call, the "CALL" indication is activated and the calling unit radio ID (or alias, if enabled) is shown in the channel box during the call.

When the call is received, it is entered into the Call History Window with the channel, radio ID, and time of reception. If Radio ID aliasing is enabled, the alias string (up to 10 characters) is shown in place of the Radio ID. The ID alias table is preconfigured using the RDPS (Radio Dispatch Programming System) program.

Receiving a Status Message

A radio in the field can send a status update to the dispatcher. The received status is displayed in the Call History Window along with the time and radio ID from which the status was received.

The status numbers can be aliased to 10-character alphanumeric strings.

Receiving an Emergency Alert

When receiving an emergency call, the channel box indicates the radio ID or alias as in the normal voice call, but the ID is flashing and in red. An alarm also sounds if configured in RDPS that is cancelled when the dispatcher transmits on the channel where the emergency alert was received. The emergency display may also be cleared with **Review ANI** key and the audible alert may also be deactivated with **Alarm Ack** key.

The emergency alert is displayed in the Call History window with a status of "Emergency" along with the time, radio ID, and channel from which the emergency alert was received.

Global Call Management

When RDPS "Global Call Management" option is enabled, any of the following actions performed by an IntegratorRD console position is updated to all other IntegratorRD console positions:

Alarm Acknowledge

When an alarm is cleared with **Alarm Ack** at one console position, it is also cleared at all other console positions.

ANI Review

Reverse Selective Calling mode

When an ANI is removed from the channel icon with **Review ANI** at one console position, it is also removed at all other console positions.

PTT ID mode

When an emergency ANI is reviewed from the channel icon with **Review ANI** at one console position, it is also reviewed at all other console positions.

Emergency Display Clear

For all emergency types except EDACS emergency, when an emergency display is cleared at one console position, it is also cleared at all other console positions.

Call Reply

When a MAP27, iDEN, SDC, or Full-Featured MDC-1200 call is check marked in the Call History window at one console position, the same call is also check marked at all other console positions' Call History window.

Call Delete

When a call item is removed from the Call History window at one console position, it is also removed at all other console positions' Call History window. This feature also requires "Include Global Call Delete" to be enabled.

Console Messages

Operational Messages

During normal operation, it is common to have messages appear on the display. Generally, these messages are displayed only briefly; exceptions are noted in Table 18.

Table 18: Operational Messages

Message	Explanation
B U S Y	An attempt was made to transmit on a channel already in use by another console or parallel remote.
CIC Reset	The Console Interface Card for this position has been reset.
Console Discon	The Model 4217B Audio Panel is disconnected from the Dispatch Workstation. This message is removed when communication is reestablished.
Console Ready	Displayed following a system power up or reset to indicate that all functions have been initialized and are operational. If the system includes a Diagnostic Printer, a log report is printed. The message is removed after the first key press.
Console Reset	An operator induced console reset has been performed. This message is displayed following a "Set Console Position" operation from the File Maintenance option of the Miscellaneous Menu.
Demo	The console program has been invoked in the "demo" mode. In this mode, all channel and system activity is simulated – no control of the Common Control Equipment is provided.
Disconnected	The Common Control Equipment is disconnected from the Dispatch Workstation. The channel status region greys out and becomes unavailable for use. When communication is reestablished, the disconnected message disappears and the channel status region is restored to a usable state.
Initializing	During a power up or reset condition, this message is displayed while the system configuration is loaded.
Intercom	Another console position is calling this position over the console intercom.
Priority TX	A Supervisory console has overridden your transmission using Priority Transmit.
Released	The supervisor console position has released control back to this position.
Takeover	The supervisor console position has inhibited control of this position.
T A L K - ##	After an Instant Call Page is sent, the transmitter stays on for a configurable amount of talk time. This status message indicates the remaining talk time.
TX Keyup Fail	Transmit keyup status was not received during an attempted transmit operation.
TX Timeout	The 3-minute transmission time out expired on a system channel. This can be due to a stuck transmit switch.

Diagnostic Messages

The messages shown in Table 19 occur during abnormal operation, such as an incorrectly configured system or an equipment failure.

Table 19: Diagnostic Messages

Message	Explanation
Check CIC card	A failure of the Console Interface card has been detected.
Invalid card	The system configuration does not match the console configuration.
E Queue Full CIC T Buf Full Con T Buf Full	These conditions indicate improper operation of the console. The information should be recorded for the factory to use to help isolate the problem.
No Option	The Channel Volume Control card option was not detected or an enhanced paging format was selected that the Model 4217B Audio Panel does not support.

Updating the Console Configuration

The console configuration is shipped according to the information provided when you returned the preshipment configuration package. You may find it necessary to make changes to this configuration. You can do this by using the Integrator Radio Dispatch Programming Software (RDPS) on a standard desktop or laptop PC. Then, the "File Maintenance" menu allows you to arrange the channel displays, define select, transmit, and patch groups, and to copy the configuration files from the floppy disk to the PC system unit.

After pressing the **MISC MENU** button, select the **FILE MAINT** item. The **FILE MAINT** key is only accessible if the user has the UMS IntegratorRD change settings and configuration permission.

If the user has the necessary permission, a menu with the following buttons is displayed:

- DEFINE SELECT GROUPS
- DEFINE XMIT GROUPS
- DEFINE PATCH GROUPS
- SHOW CALL WINDOW
- HIDE CALL WINDOW
- MOVE CHANNEL
- START/STOP LOG
- SET CONSOLE CONFIG
- COPY FILES

• CANCEL

Select a menu item by pressing the desired button. The following subsections describe each item.

Move Channel

The "Move Channel" menu item is used to move channel modules in and out of the Channel Status Region display. When this item is selected, the menu is replaced with one or two screens showing the channel list buttons.

To add a channel to the Channel Status Region, use the touch screen or mouse to highlight the Channel Selector zone for the position of the channel. Next, press the desired channel button. The channel displays in the Channel Status Region.

To remove a channel display module from the Channel Status Region, press the channel button. As shown in Table 20, the color of the channel buttons designates the status of the channel.

Table 20: Channel Button Colors

Button Color	Label Color	Channel Status
White	Green	Active, not displayed
Green	White	Active, displayed
Black	White	Inactive, not displayed
Gray	White	Inactive, displayed

Inactive channels display in the Channel Status Region but do not have any channel control status displayed nor do they respond to channel control functions. The Channel Selector zone for an inactive channel is dark gray.

Saving the Channel Display Configuration

The configuration of the Channel Status Region display is saved by selecting the "Save Display" item from the Move Channel Menu. When this is done, six channel setup buttons replace the menu. Each of these buttons can be selected to catalog the configuration of the display, as well as to store the volume settings for the channels. A Green button with white lettering is the current setup. White buttons with green lettering are setups that have an assigned configuration. Black buttons, with white lettering, designate setups that do not have a display configuration.

You may designate whether those channels not included in the setup display automatically "pop up" on received call activity. The **Chanl Popup On/Off** button selectively enables or disables the pop up function for each setup.

Show/Hide Call Window

The Show Call Window and the Hide Call Window menu items activate or deactivate the Call Window. The Call Window can be configured as visible in some display settings and not shown in others.

Define Select Groups

Predefined sets of channels can be configured for Group Select using the Group Select Definition menu. These group selects can then be activated from the "Select Groups" menu selection of the "Group Menu" menu. When the Group Select Definition menu is selected, the Misc. Menu is replaced with a list of 16 group select buttons.

To define a group, press the desired setup button. The group select buttons are then replaced with the channel list buttons. Channels that are included in the group are displayed in green; those not included are displayed in white.

To add or remove a channel from the group, press the channel button. For multi-frequency channels, the current channel frequency selection is saved with the group. When the group is activated, the channel frequency is set to that stored with the group and then the channels selected.

To save the group setup and return to the Miscellaneous Menu, press the **Save Setup** button. To cancel the setup, press the **Cancel** button. Further groups may be defined by repeating the above steps.

Start/Stop Log

This selection starts or stops a diagnostic log file that may be used by Zetron service personnel in the event of a problem.

Define Xmit Groups

Predefined sets of channels may be configured for Group Transmit by using the Group Transmit Definition menu. These transmit groups are activated from the "Xmit Groups" menu selection of the "Group Menu" menu. When the Group Transmit Definition menu is selected, the Miscellaneous Menu is replaced with a list of 16 transmit group buttons.

To define a group, press the desired setup button. The group transmit buttons are replaced with the channel list buttons. Channels that are included in the group display in green; those not included are displayed in white. To add or remove a channel from the group, press the channel button. For multi-frequency channels, the current channel frequency selection is saved with the group. When the group is activated, the channel frequency is set to that stored with the group and then the channels are keyed up.

To save the group setup and return to the Miscellaneous Menu, press the **Save Setup** button. To cancel the setup, press the **Cancel** button. Further groups are defined by repeating the above steps.

Define Patch Groups

Predefined sets of channels are configured for Group Patch using the Group Patch Definition menu. These patch groups are activated from the "Patch Groups" menu selection of the "Group Menu" menu. When the Group Patch Definition menu is selected, the Miscellaneous Menu is replaced with a list of 16 patch group buttons.

To define a group, press the desired setup button. The group patch buttons are replaced with the channel list buttons. Channels that are included in the group display in green; those not included are displayed in white. To add or remove a channel from the group, press the channel button. For multi-frequency channels, the current channel frequency selection is saved with the group. When the group is activated, the channel frequency is set to that stored with the group and then the channels are patched.

To save the group setup and return to the Miscellaneous Menu, press the **Save Setup** button. To cancel the setup, press the **Cancel** button. Further groups are defined by repeating the above steps.

Copy Files

Pressing this button brings a set of menu selections:
- SAVE SCNDRY CONFIG
- LOAD SCNDRY CONFIG

Saving the Current Console Configuration File

Use this selection to copy the configuration of the console from the PC hard disk to a backup floppy disk. You may want to do this to archive the changes.

Insert a floppy disk on which you want the console configuration stored into the A: drive on the console PC. Press **SAVE SCNDRY CONFIG**. Press **COPY FILES** to start the copy process. The program copies the configuration files from the hard disk to the floppy disk.

Loading a New Console Configuration from a Floppy Disk

Use this selection if you have entered a new console configuration using RDPS, on an offline desktop or laptop PC, and wish to update the console operation.

Insert the floppy disk containing the RDPS configuration files into the A: drive on the console PC. Press **LOAD SCNDRY CONFIG**. Press **COPY FILES** to start the copy process. The program copies the configuration files from the floppy to the hard disk.

Set Console Config (Number)

This selection requests the number of the configuration before resetting the console program. It is necessary to set the correct configuration number to ensure that the console program loads the correct configuration files.

Up to 16 configurations can be programmed by RDPS. Typically, a single configuration is used at all console positions. In this case, configuration number 1 contains all settings used at all console positions. In some cases, there can be different operational needs associated with specific console positions. The "Set Console Config" function allows the selection of the specific configuration to be matched to the console position.

Cancel

This selection returns you to the main Misc. Menu submenu.

Appendix A: Glossary

In this chapter:

Paging Glossary

Paging Term	Definition
Capcode	The ID of a pager.
Instant Call	An Instant Call can have multiple pages (called a page stack) assigned to it. Each page in the stack can be a different format (e.g., DTMF, Two-Tone, Alert) and be steered to different channel(s).
Inter-Stack Delay	This is more like an inter-page delay, as it is the time delay between pages in a stack. This delay will only occur for manually entered page stacks (i.e., for two or more pages entered via Paging/DTMF keypad). Because each page can be sent out over different channels, Instant-Call (single button) paging stacks always use the Keyup Delay between pages even if the next page uses the same channel as the previous page.
Keyup Delay	The time between a channel finished keying up the transmitter and the start of the first page in a stack.
Leading Digit	The leading digit of a page is used to specify the format of that page.
Page	A single leading digit and associated capcode to be sent out on a channel/frequency.
Page Enter	This paging function is used during manual page entry (via the console DTMF/paging keypad) to terminate the entry and add the page to the stack. The use of this key is only required for variable-length paging formats (i.e., DTMF). Fixed-length paging formats (i.e., Two-Tone and Alerts) are self-terminating.

Paging Term	Definition
Page Clear	If manual page entry (via the console DTMF/paging keypad) is in progress, this function will abort the current key entry sequence and clear the paging display without altering the existing page stack. If a page entry is not in progress, pressing this key will delete all console page stacks. If a page transmission is in progress, it will also immediately abort the page transmission. This function should always be programmed if the console is to be used for paging.
Page Safety	If this function is programmed, instant-call pages will not be transmitted until this key is pressed, allowing the operator to review the selected instant-call pages before sending them. If this key has not been programmed, pressing an Instant Call page key will begin the page transmission immediately.
Page Send	This paging function will terminate any manual page entry in progress (as if a PAGE ENTER key had been pressed), and begin transmitting the manual page stack on the currently selected channel(s) in the order the pages were stacked (entered). The page stack is retained and can be transmitted again (on different channel(s), for example) by pressing this key again.
Page Stack	A set of one or more pages, ordered in a stack to be sent out in sequence.
Talk Time	Talk Time is the default amount of time after a page is finished that the microphone and transmitter are keyed up for the purpose of allowing the dispatcher to transmit an audio/voice message.

General Glossary

Name	Description
ANI	Automatic Number Identification
CAD	Computer Aided Dispatch
CCE (Common Control Equipment)	Comprises all backroom system elements such as racks and card cages.
Channel	Used to describe the point-to-point communication path within the Series 4000 system.
Clipping	Audible distortion that occurs when a signal's level exceeds the limits of the amplifier circuit. When the analog signal is a sine wave, clipping results in a waveform with a "flat top." Clipping can be reduced by decreasing the input signal amplitude to the amplifier or by reducing the gain of the amplifier.
CTCSS	Continuous Tone-Coded Squelch System
CTS	Clear To Send
DTMF	Dual Tone Multi-Frequency

Name	Description
E&M **(Ear and Mouth Signaling)**	E&M (Ear and Mouth) signaling originated from early telephone systems to provide a means of establishing calls between exchanges. Modern systems do not use E&M signaling and use either in-band signaling or dedicated data channels to set up calls. E&M leads are now commonly used as multipurpose signaling connections. To avoid confusion, the terms E and M are often replaced by SO (Signaling Out) and SI (Signaling In) throughout this manual set.
ESD	Electrostatic Discharge
Gain	A figure used to describe amplification. For example, an amplifier with a gain of two will produce an output signal that is twice the amplitude of an input signal.
Handshaking	Handshaking is a term used to describe the signaling lines (RTS, CTS, etc.) of serial communication links such as RS-232.
iDEN	Integrated Digital Enhanced Network, a technology built by Motorola that combines trunked radio and cellular phone features.
IRR **(Instant Recall Recorder)**	IRR is an application used to control the voice recording process.
MAP27	A protocol used to access trunked radios.
MDC-1200	A low-speed data system for two-way radios that allows features such as radio status, emergency messages, and selective calling.
PTT	"Push to talk" or "press to talk".
RX	Receive
SDC	Sprint Direct Connect, a technology by Sprint that combines traditional trunked radio features with traditional cellular phone features.
Transceiver	A circuit that can connect to a shared bus for the purpose of receiving and transmitting. A cooperative protocol for the bus ensures that only one transceiver on a bus transmits at any one time.
TX	Transmit
UMS **(User Management System)**	UMS is a client/server application used to control system access and privileges.
VF **(Voice Frequency)**	An audio signal in the band 300-3400 Hz.

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