MOTOROLA SOLUTIONS

ASTRO® 25

INTEGRATED VOICE AND DATA

ZoneWatch User Guide

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Contents

Intellectual Property and Regulatory Notices **2**
Contact Us **3**
Document History **4**
List of Figures **7**
List of Tables **8**
List of Procedures **9**
About ZoneWatch User Guide **10**
Related Information 10
Chapter 1: ZoneWatch Description **11**
1.1 ZoneWatch Purpose 11
1.2 Watch Profile Elements 12
1.3 Access Rights to ZoneWatch 13
Chapter 2: ZoneWatch Components **14**
2.1 ZoneWatch Menu Bar 14
2.2 ZoneWatch Main Window 16
2.3 Main Window Title Bar and Status Bar 17
2.4 Color Schemes of Watch Window Entries 17
2.5 Single-Site Watch Window 18
2.6 Multi-Site Scroll Watch Window 19
2.7 Channel Grid Watch Window 20
2.8 Site Header Color 22
2.9 Channel Header Color 22
2.10 Channel Activity Icons 23
2.11 Busy Queue Watch Window 24
2.12 Raw Display Watch Window 25
2.13 Select Watch Profile Dialog Box 25
2.14 General Configuration Dialog Box 26
2.14.1 Start Up Tab 26
2.14.2 Disk Logging Options Tab 27
2.14.3 Data Format Tab 28
2.15 Watch Window Options Dialog Box 28
2.16 Alarm Status Window 30
2.17 Site Selectable Alerts 30
2.18 Station Control Commands 32

Chapter 3: ZoneWatch Operation..... 34
3.1 Starting the ZoneWatch Application.....34
3.2 Configuring Watch Profiles.....35
3.2.1 Creating a New Watch Profile..... 35
3.2.2 Setting Up an Initial Watch Profile.....35
3.2.3 Changing the Selected Watch Profile.....36
3.3 Configuring Watch Windows.....36
3.3.1 Setting the Data Format..... 36
3.3.2 Setting Disk Logging Options.....37
3.3.3 Enabling Disk Logging..... 37
3.3.4 Viewing Log Files in the Base Logging Directory.....38
3.3.5 Changing the Font Size in a Watch Window.....38
3.3.6 Turning Grid Window Icons On and Off..... 39
3.3.7 Clearing Trunking Data in a WatchWindow.....39
3.3.8 Adjusting Channel Grid Display..... 39
3.3.9 Refreshing Configuration Data.....40
3.4 Freezing a Single Watch Window..... 40
3.5 Freezing All Watch Windows..... 41
3.6 Thawing a Single Watch Window.....41
3.7 Thawing All Watch Windows.....41
3.8 Viewing Alarm Status.....42
3.9 Closing a Single Watch Window..... 42
3.10 Reopening a Closed Watch Window.....42
3.11 Monitoring System Activity..... 43
3.11.1 Monitoring Radio Call Activity for a Single Site..... 43
3.11.2 Monitoring Radio Call Activity for Multiple Sites Within a Zone.....44
3.11.3 Monitoring Channel Usage Activity Within a Zone..... 44
3.11.4 Monitoring Busy Queue Activity Within a Zone..... 45
3.12 Exiting ZoneWatch.....45
Chapter 4: ZoneWatch Troubleshooting..... 46
4.1 Troubleshooting with Microsoft Windows Settings.....46

List of Figures

Figure 1: ZoneWatch Main Window....14
Figure 2: Busy Queue on Single Site Scroll Window....19
Figure 3: Multisite Scroll Watch Window with Call Attributes....20
Figure 4: ZoneWatch Channel Grid Watch Window....21
Figure 5: Channel Grid Watch Window with Call Attributes and Types Of Call Activity....22
Figure 6: ZoneWatch Busy Queue Watch Window....24
Figure 7: Busy Queue Watch Window with Call Attributes and Types of Call Activity....25
Figure 8: Select Watch Profile Dialog Box....26
Figure 9: General Configuration Dialog Box: Start Up Tab....26
Figure 10: General Configuration Dialog Box: Disk Logging Options Tab....27
Figure 11: General Configuration Dialog Box: Data Format Tab....28
Figure 12: Watch Window Options Dialog Box....28
Figure 13: Alarm Status Window....30
Figure 14: Site Selectable Alerts – Channel Grid Watch Window....31
Figure 15: Site Selectable Alerts – Single-Site Watch Window....31
Figure 16: PRNM Suite Icon....34
Figure 17: ZoneWatch Single-Site Watch Window....43
Figure 18: ZoneWatch Multi Site Scroll Watch Window....44

List of Tables

Table 1: Description of Watch Profile Elements..... 12
Table 2: ZoneWatch Menu Bar Options..... 14
Table 3: ZoneWatch Windows Description..... 16
Table 4: Watch Window Color Schemes..... 17
Table 5: Site Header Color..... 22
Table 6: Channel Header Color..... 22
Table 7: Channel Activity Icons..... 23
Table 8: Start Up Tab..... 26
Table 9: Disk Logging Options Tab..... 27
Table 10: Data Format Tab..... 28
Table 11: Watch Window Options Dialog Box..... 29
Table 12: Alarm Status Window..... 30
Table 13: Conventional Station Control Commands..... 32
Table 14: Digital Conventional Station Control Commands..... 33
Table 15: ZoneWatch – General Troubleshooting..... 46

List of Procedures

Starting the ZoneWatch Application 34
Configuring Watch Profiles 35
Creating a New Watch Profile 35
Setting Up an Initial Watch Profile 35
Changing the Selected Watch Profile 36
Configuring Watch Windows 36
Setting the Data Format 36
Setting Disk Logging Options 37
Enabling Disk Logging 37
Viewing Log Files in the Base Logging Directory 38
Changing the Font Size in a Watch Window 38
Turning Grid Window Icons On and Off 39
Clearing Trunking Data in a WatchWindow 39
Adjusting Channel Grid Display 39
Refreshing Configuration Data 40
Freezing a Single Watch Window 40
Freezing All Watch Windows 41
Thawing a Single Watch Window 41
Thawing All Watch Windows 41
Viewing Alarm Status 42
Closing a Single Watch Window 42
Reopening a Closed Watch Window 42
Monitoring System Activity 43
Monitoring Radio Call Activity for a Single Site 43
Monitoring Radio Call Activity for Multiple Sites Within a Zone 44
Monitoring Channel Usage Activity Within a Zone 44
Monitoring Busy Queue Activity Within a Zone 45
Exiting ZoneWatch 45
Troubleshooting with Microsoft Windows Settings 46

About ZoneWatch User Guide

This guide covers the use of the ZoneWatch software application to monitor call processing resource assignments at sites in ASTRO® 25 systems.

Related Information

Related Information	Purpose
Standards and Guidelines for Communication Sites	Provides standards and guidelines that should be followed when setting up a Motorola Solutions communications site. Also known as R56 manual.
System Overview and Recovery Reference Guide	Provides an overview of the new features, technical illustrations, and system-level disaster recovery for the ASTRO® 25 radio communication system.

Chapter 1

ZoneWatch Description

ZoneWatch is an application that lets you monitor radio call traffic for an individual zone in real time. This application uses different Watch Windows that allow you to display only the information you want to see.

Examples of trunking activity and radio call traffic displayed in the Watch Windows include the following:

- Radio IDs
- Talkgroup IDs
- Conventional Talkgroup IDs
- Aliases
- Specific call information
- Channel and talkpath (TDMA) assignments

Licensing in ZoneWatch

In the ASTRO® 25 system, you need to purchase a license or licenses to get access to selected applications, features, and services. ZoneWatch is a licensed application, which means that to use ZoneWatch, you need to purchase one or more session licenses. The session license is used to manage a number of application client sessions. For ZoneWatch, you can buy several licenses for a group of users. When a user starts a ZoneWatch session, a license from a pool of your session licenses is used. For more information, see the *License Manager User Guide*.

1.1 ZoneWatch Purpose

The ZoneWatch application monitors all radio call activity by pulling trunking information from the Air Traffic Router (ATR) server application, which receives updates from the Air Traffic Information Access (ATIA) stream distributed by the zone controller.

ZoneWatch also receives fault information relating to repeater sites, console sites, conventional talkgroup sites, and the zone controller from the Unified Event Manager (UEM).

If Dynamic System Resilience is implemented on your system, the application can connect to the primary zone core or to the backup zone core. The title bar displays the zone core (primary or secondary) the application is connected to. For non-Dynamic System Resilience zones, the indication is always “Primary Zone Core”. For details, see the *Dynamic System Resilience User Guide*.

ZoneWatch uses different types of Watch Windows to display zone, site, talkgroup, and radio information for a specific zone. The different window profiles, which contain window definitions and filters, define how to display the information and how to apply limits to the type of data that you can view. The following are examples of the types of information that you may choose to view:

- **Activity in a Zone**
  You can open ZoneWatch to monitor radio call activity within a zone. You can see constantly updated information on who is using the system, where the radio users are located, what infrastructure resources are being used, and any significant changes in system usage.
- **Message Type**
  Information is displayed by one or any combination of two types of messages: Secure and Emergency.
- **Raw Data**

A Raw Data filter allows the selection or exclusion of information. The data that is selected for inclusion is displayed as raw data (no formatting).

- **Site Information**
  A site filter object allows you to specify the site that you want to monitor. The site selection must consist of a site within the same zone as the ZoneWatch. The site filter essentially limits the view to only a specific site in a zone. You can, however, have other windows open to show information from other sites in the zone. You can have a maximum of 20 ZoneWatch windows open at any time on the workstation. Typically, you use between 4 and 8 open windows to monitor the radio call traffic on the system.

  NOTE: For a consistent view of single call related events, the following filtering rule applies: If the event starting the call is displayed, then all consecutive events related to the call are also displayed, even if they do not match the applied filter criteria.
  Within the system, all dispatch console units are affiliated to the virtual site whose ID is 0. As a consequence, if the only site participating in the call is the Console Site, the call is displayed regardless of applied site filter settings.

- **New Resources**
  Restart ZoneWatch each time you add radios and group resources to the system. As these resources generate radio call activities, ZoneWatch displays the activity information.

1.2 Watch Profile Elements

How ZoneWatch displays radio call traffic depends on the configuration of the following elements:

- **Watch Profiles** – containers for different Watch Window Definitions.
- **Watch Window Definitions** – made up of combinations of Filters.
- **ZoneWatch Filters** – determine the type of system traffic that is directed to the Watch Windows. You can apply them through the Provisioning Manager.

These three elements define how you view the call information and also provide various ways to change the view. The following table describes each of these elements in detail.

Table 1: Description of Watch Profile Elements

ZoneWatch Element	Description
ZoneWatch Filter	Defines the type of radio traffic information that is associated with a particular window. You can apply filters through the Provisioning Manager. The following filters can be applied: • Message Qualifier Filter • Message Set Filter • Raw Data Filter • Site Filter • Channel Filter • Radio ID Filter • Radio Range Filter • Talkgroup/Multigroup ID Filter • Talkgroup/Multigroup Range Filter • System Filter

ZoneWatch Element	Description
	• Transcoder Filter
Watch Window Definition	Defines the type of window to open and how the information is displayed. Applying a definition is a quick way to vary the display for the same types of information.
Watch Profile	Identifies a group of Watch Window definitions. **NOTE:** A watch profile must contain Watch Window definitions and filters from the same security group.

1.3

Access Rights to ZoneWatch

Only domain users with permissions can open and use this application. For more information, see the *Authentication Services Feature Guide*.

Chapter 2

ZoneWatch Components

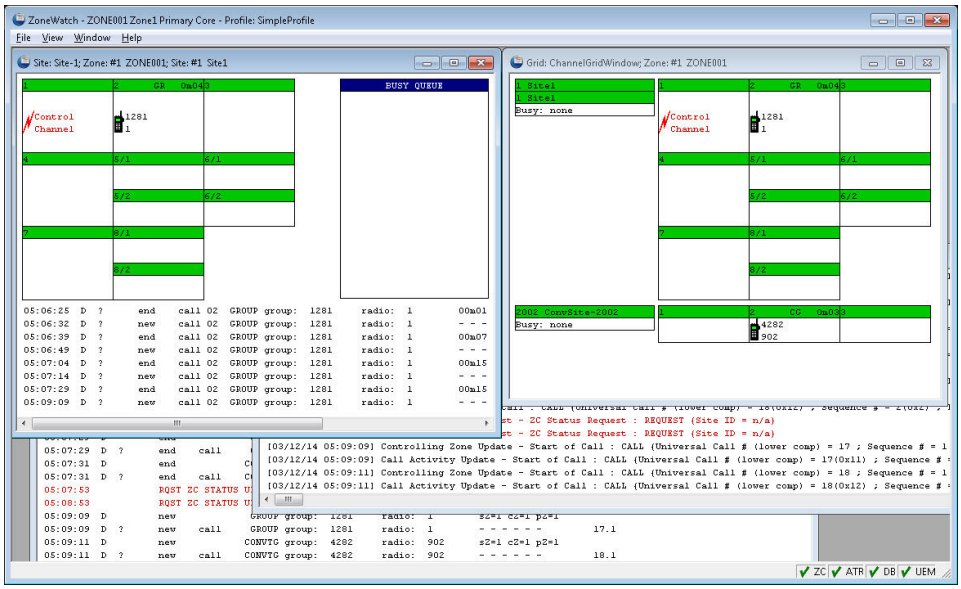
This chapter provides description of the ZoneWatch application components.

2.1 ZoneWatch Menu Bar

The menu bar across the top of the ZoneWatch main window provides access to five Watch Windows:

- Single-Site Watch Window
- Multi-Site Scroll Watch Window
- Channel Grid Watch Window
- Busy Queue Watch Window
- Raw Display Watch Window

Figure 1: ZoneWatch Main Window



The following table lists the ZoneWatch menu bar options.

Table 2: ZoneWatch Menu Bar Options

Menu	Option	Description
File	Open Watch Profile...	Opens the Select Watch Profile dialog box so that you can select another profile.
	Close	Closes a single selected Watch Window.
	Properties...	Opens the General Configuration dialog box, which lets you choose:

Menu	Option	Description
		• logging options • startup profile • the way IDs are displayed in Watch Windows
	Exit Program	Closes the ZoneWatch application.
View	Freeze	Stops a single selected window from updating with new information. You see only the data that was present when you froze the window. Select **Thaw** for the window to resume updating.
	Thaw	Restarts a single selected Watch Window that has been frozen and updates the display with the latest trunking activity and radio call information.
	Freeze All	Stops all Watch Windows from updating with new information. You see only the data that was present when you froze the window. Select **Thaw All** for the windows to resume updating.
	Thaw All	Restarts all Watch Windows that have been frozen and updates the displays with the latest trunking activity and radio call information.
	Options	Opens the Watch Window Options dialog box where you can: • change the font size for text on one Watch Window at a time • select whether to show icons • change channel width • enable logging • force-set channel grid width and header height overriding the previous text size and channel width controls settings
	Refresh Configuration Data	Checks the Provisioning Manager database for changes to the watch profile configuration and updates the associated Watch Windows with these changes. The Watch Windows resume updating with radio call information after they are reset.
	Clear Trunking Data	Clears all Watch Windows of data and resumes updating with the latest trunking activity and radio call information.
Window		This menu contains a list of Watch Windows from the current watch profile. Using this menu, you can move quickly from one Watch Window to another and also reopen the Watch Windows which were already closed.
Help	Help Topics...	Opens online help for the ZoneWatch application.
	About...	Opens the About ZoneWatch window, which displays the version number and copyright information for the application.

2.2
ZoneWatch Main Window

The ZoneWatch main window displays all Watch Windows for the selected watch profile. This window uses some basic Windows elements, such as the menu bar, to provide navigation and perform tasks.

The display area contains all Watch Windows that are open for the selected watch profile. Initially, these windows are stacked on top of one another. You can arrange the Watch Windows in the display area by selecting and dragging a window to the location where you want it to appear. The Watch Window position is stored when you exit.

Watch windows display the trunking activity and radio call traffic information for a specific zone. Each of the five different Watch Windows displays information for a specific activity or designated site.

Table 3: ZoneWatch Windows Description

Type of Watch Window	Description
Single-Site	The Single-Site Watch Window displays all of the data necessary to monitor radio call information for a single site. This window may contain, if enabled, the Channel Grid, the Busy Queue for the site and entries from Multi-Site Scroll Watch window.
Multi-Site Scroll	This Watch Window displays all important radio call information for two or more sites within a zone. This information includes: ● Time of event ● Start of event and end of event ● Call attributes ● Type of event ● Talkgroup alias or ID ● Conventional Talkgroup alias or ID ● Radio alias or ID ● Elapsed time of event
Channel Grid	This Watch Window lets you monitor the Control Channel and call information within the zone for trunking and conventional talkgroup channels. You can view all information or use filters to limit what you view in the window. In the grid, TDMA-only and Dynamic channels are depicted as divided into two slots, whereas FDMA-only and conventional talkgroup channels are not divided. Therefore, you can easily differentiate between TDMA and FDMA calls, and see if a channel is TDMA-capable. When an FDMA call is placed to a Dynamic channel, the slots become merged for the duration of the call.
Busy Queue	This Watch Window monitors all busies that occur within the zone. When a call request receives a busy, the call information is put into the queue of the Busy Queue Watch Window. Call requests are removed from the queue as the call is granted after a busy. If a call request does not require resources at all sites and the request receives a busy at one or more sites, the call request can appear active and busy at the same time. This means you might see the call taking place in a site window while the busy queue shows a busy condition for one or more sites.

Type of Watch Window	Description
	The information displayed in the Busy Queue window includes: • Radio aliases or IDs of the radio users involved in the busy • Talkgroup aliases or IDs where the radios are affiliated • Conventional Talkgroup aliases or IDs where the radios are affiliated • Call attributes • Type of call activity, such as talkgroup call or private call • Sites involved in the busy • Reason for the busy condition
Raw Display	This Watch Window displays all of the raw packet data for trunking activities in the zone. This raw packet data is not formatted and is displayed in a single line, which does not wrap in the window.

2.3 Main Window Title Bar and Status Bar

For ASTRO® 25 systems equipped with the Dynamic System Resilience feature, the title bar provides information about the zone core (primary or backup) the application is connected to. For non-Dynamic System Resilience zones, the indication is always “Primary Zone Core”.

The status bar displays the status of connections to the NM servers (ZC, ATR, DB, and UEM).

Server connected.

Server disconnected.

2.4 Color Schemes of Watch Window Entries

ZoneWatch displays radio call information using different color schemes to identify each type of message and to group similar activities. Colors are also used to draw your attention to specific messages, such as emergency calls.

Each color scheme has a background color and a foreground color to designate the type of message being displayed. The following table lists the different types of messages and the color scheme used for each message type.

Table 4: Watch Window Color Schemes

Watch Window Entry	Background Color	Foreground Color
System level information (shared by the entire system, such as Control Channel at each site)	White	Red

Watch Window Entry	Background Color	Foreground Color
Group calls (talkgroup, conventional talkgroup, multigroup, patch, MultiSelect, talkgroup data) and busies	White	Black
Private calls, busies, and private ring	White	Bright Blue
Site wide calls and busies	Green	White
Phone calls, phone busies, and phone rings	White	Dark Blue
Patch update messages	White	Gray
Affiliation, deaffiliation, registration, association	White	Blue-green
Rejects (radio unable to affiliate at a site or an attempt to make an unauthorized call), data calls, and group text messages during calls	White	Purple
Call Alert, status, message, remote monitor, and radio trace	White	Green
Emergency calls, busies, and alarms	Red	White
Dynamic commands, such as inhibit, regroup, and selector lock	White	Orange
Dynamic frequency blocking	White	Olive
Unexpected packet	Gray	Red

2.5
Single-Site Watch Window

The Single-Site Watch Window displays all of the data necessary to monitor radio call information for a single site. This window may contain the Channel Grid, the Busy Queue for the site and entries from the Multi-Site Scroll Watch window.

Entries to this Watch Window are color coded.

The Single-Site Watch Window monitors all busies that occur within the site. When a call request receives a busy, the call information is put into the queue of the Single-Site Watch Window . Call requests are removed from the queue as the call is granted after a busy.

In the channel grid, TDMA-only and Dynamic channels are depicted as divided into two slots, whereas FDMA-only channels are not divided. Therefore, you can easily differentiate between TDMA and FDMA calls, and see if a channel is TDMA-capable. When an FDMA call is placed to a Dynamic channel, the slots become merged for the duration of the call.

For a consistent view of single call related events, the following filtering rule applies: If the event starting the call is displayed, then all consecutive events related to the call are also displayed, even if they do not match the applied filter criteria.

On Single-Site Window, when enabled, Busy Queue displays the following call attributes and types of call activity:

Call Attributes and Types of Call Activity

Call Attributes:

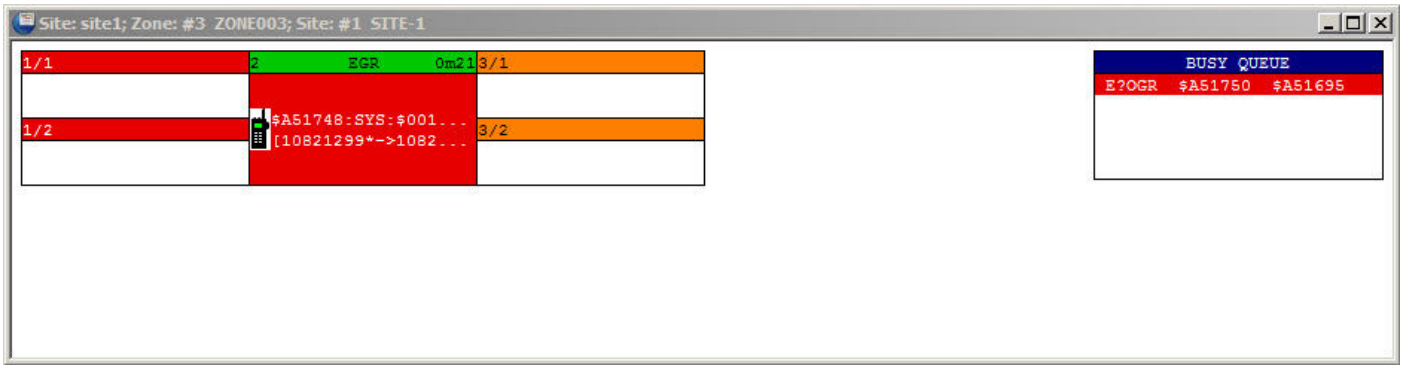
- P - Secure call
- E - Emergency call
- T - access type: TDMA
- F- access type: FDMA

- M - access type: Mixed (Transcoded call)
- ? - access type: unknown
- O - foreign radio/talkgroup is involved in the call

Types of Call Activity:

- GR - Group Call
- GT - group data transmission over voice channel
- MG - Multi Group Call
- PA - Patch Call
- MS - Multiselect Call
- PV - Private Call
- SI - Site Call
- PH - Phone Call
- CG - Conventional Call
- DA - Data Call
- FW - Firmware Download Call
- VP - Virtual Partner Call
- SW - System Wide Call (for the 2020.1 and later system releases)

Figure 2: Busy Queue on Single Site Scroll Window



NOTE: For the channel status colors within a Single-Site Watch Window, see: Table 6: Channel Header Color on page 22.

2.6 Multi-Site Scroll Watch Window

The Multi-Site Scroll Watch Window displays all important radio call information for two or more sites within a zone. The information includes:

- Time of event
- Start of event and end of event
- Call attributes
- Type of event
- Talkgroup alias or ID

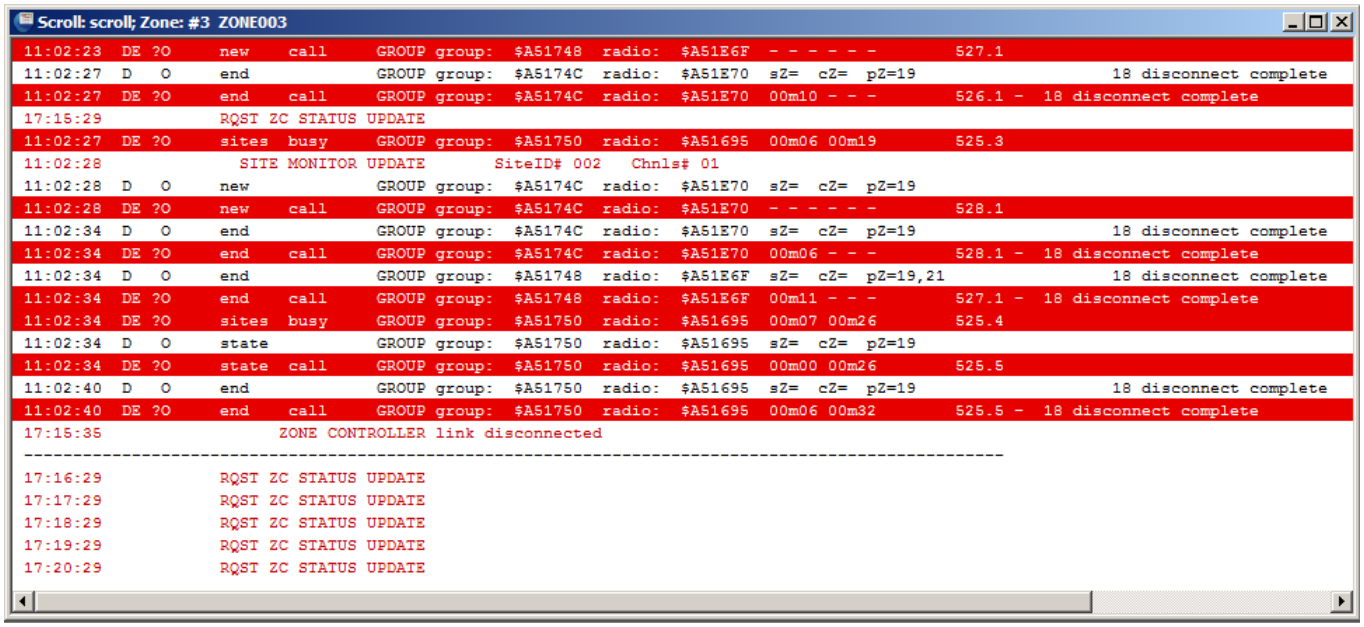
- Conventional Talkgroup alias or ID
- Radio alias or ID
- Elapsed time of event

Entries to this Watch Window are color coded.

The Multi-Site Scroll Watch window displays the following call attributes:

- P – Secure call
- D - Digital call
- E - Emergency call
- L - Landline call
- T - access type: TDMA
- F- access type: FDMA
- M - access type: Mixed (Transcoded call)
- ? - access type: unknown
- O - foreign radio/talkgroup is involved in the call
- G - group data transmission over voice channel

Figure 3: Multisite Scroll Watch Window with Call Attributes



2.7
Channel Grid Watch Window

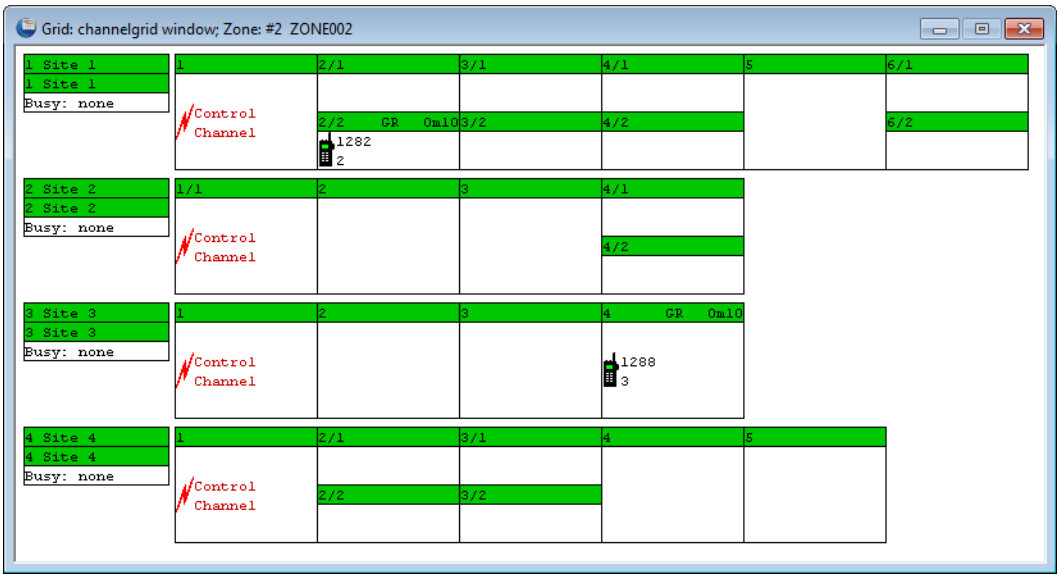
The Watch Window lets you monitor the Control Channel and call information within the zone for trunking and conventional talkgroup channels. You can view all information or use filters to limit what you view in the window.

In the grid, TDMA-only and Dynamic channels are depicted as divided into two slots, whereas FDMA-only and conventional talkgroup channels are not divided. Therefore, you can easily differentiate between TDMA and FDMA calls, and see if a channel is TDMA-capable. When an FDMA call is placed to a Dynamic channel, the slots become merged for the duration of the call.

When an outbound and inbound frequency on the conventional channel are occupied by different source, the channel cell alternates between the inbound and outbound source every 3 seconds.

NOTE: In the channel grid, aliases and IDs of talkgroups and radios from foreign systems are followed respectively by alias or ID of foreign system.

Figure 4: ZoneWatch Channel Grid Watch Window



The Watch Window utilizes a grid display that shows radio call activity by channel for the zone. A color-coded **site status indicator** displays the status of each site within the zone and a color-coded **channel status indicator** displays the status of each channel within a site.

NOTE: For the 3600 RF sites, and Conventional Talkgroup channels connected via v24, the green color may either mean that the channel is fully functional, or that no status has been reported. This is because the physical channel equipment does not have direct IP connectivity to the UEM. To verify the site type, hover over the Channel or Site Grid.

Channel Grid Watch Window displays the following call attributes and types of call activity:

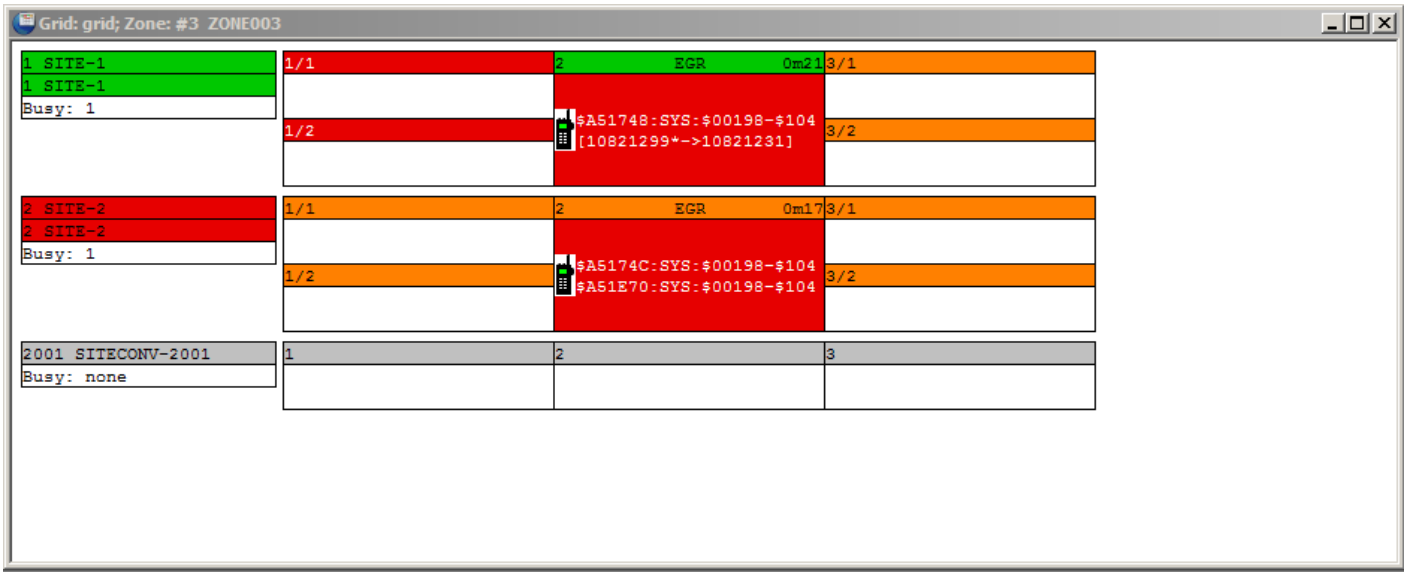
Call attributes:

- P - Secure call
- E - Emergency call

Types of call activity:

- GR - Group Call
- GT - group data transmission over voice channel
- MG - Multi Group Call
- PA - Patch Call
- MS - Multiselect Call
- PV - Private Call
- SI - Site Call
- PH - Phone Call
- CG - Conventional Call
- FWDL - Firmware Download
- SW - System Wide Call (for the 2020.1 and later system releases)

Figure 5: Channel Grid Watch Window with Call Attributes and Types Of Call Activity



2.8
Site Header Color

The color of the header bar for the first cell within a Channel Grid Watch Window indicates the status of the site. The status colors for sites are:

Table 5: Site Header Color

Site Header Color	Indication
Green	Fully functional (wide trunking or site-to-wide transitioning)
Orange	Failsoft, Site Trunking, partially functional
Red	Out-of-service (not wide trunking)
Gray	Unknown or indeterminate

2.9
Channel Header Color

The color of the header bar for each channel cell within a Channel Grid Watch Window indicates the status of the channel. These status colors are:

Table 6: Channel Header Color

Channel Header Color	Indication
Green	Fully functional
Orange	Diminished function or out-of-service (via disabled access)
Red	Out-of-service (via malfunction)

Channel Header Color	Indication
Gray	Unknown, indeterminate, or undefined

NOTE: For the 3600 RF sites, the green color may either mean that the channel is fully functional, or that no status has been reported. This is because the physical channel equipment does not have direct IP connectivity to the UEM. To verify the site type, hover over the Channel or Site Grid.

2.10

Channel Activity Icons

The Watch Window Options dialog box is opened with the menu item **View** → **Options**. It allows you to change the font size, alias length, and disk logging for the display in each watch window.

Table 7: Channel Activity Icons

The channel activity icons depict the type of activity present on the channel. You can enable and disable these icons through the **Show Icons** check box on the Watch Windows Options dialog box.

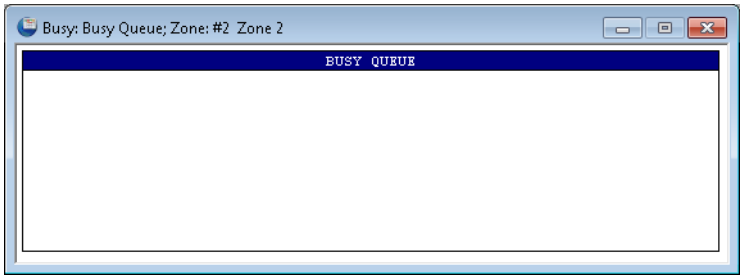
Icon	Traffic Type
	Emergency calls
	Talkgroup calls
	Telephone interconnect calls
	Control Channel
	Private calls
	Data calls or Firmware Download
	Random Access Data calls
	Base Station Identification (BSI) broadcast in Morse code
	Multigroup calls
	Call Overlap. Appears when on one conventional channel 2 calls are made.
	Group call with group text transmission

Icon	Traffic Type
	System Wide calls

2.11
Busy Queue Watch Window

The Busy Queue Watch Window monitors all busies that occur within the zone. When a call request receives a busy, the call information is put into the queue of the Busy Queue Watch Window. Call requests are removed from the queue as the call is granted after a busy.

Figure 6: ZoneWatch Busy Queue Watch Window



If a call request does not require resources at all sites and the request receives a busy at one or more sites, the call request can appear active and busy at the same time. This means you might see the call taking place in a site window while the busy queue shows a busy condition for one or more sites. However, no voice channels are assigned and the call does not take place.

Fields displayed in the Busy Queue Watch Window include:

- Radio aliases or IDs of the radio users involved in the busy
- Talkgroup aliases or IDs where the radios are affiliated
- Conventional Talkgroup aliases or IDs where the radios are affiliated
- Call attributes
- Type of call activity, such as talkgroup call or private call
- Sites involved in the busy
- Reason for the busy condition

The Busy Queue Watch window displays the following call attributes:

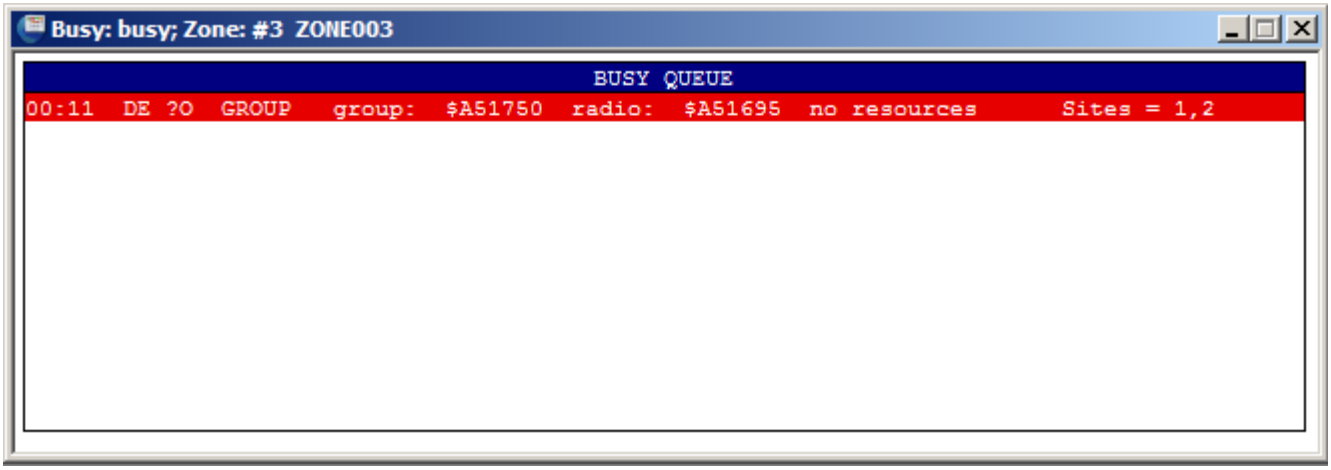
Call attributes:

- P - Secure call
- D - Digital call
- E - Emergency call
- L - Landline call
- T - access type: TDMA
- F- access type: FDMA
- M - access type: Mixed (Transcoded call)
- ? - access type: unknown
- O - foreign radio/talkgroup is involved in the call

Types of call activity:

- GROUP - Group Call
- MULTI - Multigroup Call
- PATCH - Patch Call
- MSEL - Multiselect Call
- SITE - SiteWide Call
- PRVT - Private Call
- PHONE - Phone Call
- DATA - Data Call
- FWDL - Firmware Download Call
- RADATA - reserved access Data Call
- CONVGRP - Conventional Call
- SWIDE - System Wide Call

Figure 7: Busy Queue Watch Window with Call Attributes and Types of Call Activity



2.12
Raw Display Watch Window

The Raw Display Watch Window displays all of the raw packet data for trunking activities in the zone. This raw packet data is not formatted and is displayed in a single line, which does not wrap in the window.

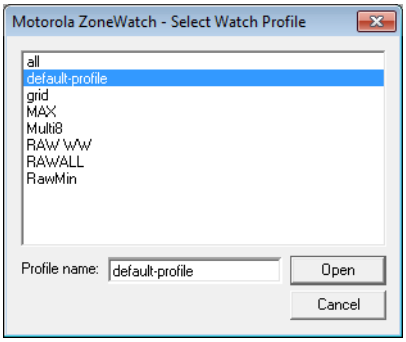
Entries to this Watch Window are color coded.

2.13
Select Watch Profile Dialog Box

The Select Watch Profile dialog box defines the Watch Windows to open.

The Select Watch Profile Dialog Box contains names of all available watch profiles configured through the Provisioning Manager. Select a profile name and click the **Open** button to apply the profile to the current session.

Figure 8: Select Watch Profile Dialog Box



2.14

General Configuration Dialog Box

The General Configuration dialog box defines how to choose a watch profile, how the data appears in each of the selected windows, and how the disk logging feature is configured.

2.14.1

Start Up Tab

The Start Up tab lets you choose a watch profile as your default on startup from the drop-down list.

Figure 9: General Configuration Dialog Box: Start Up Tab

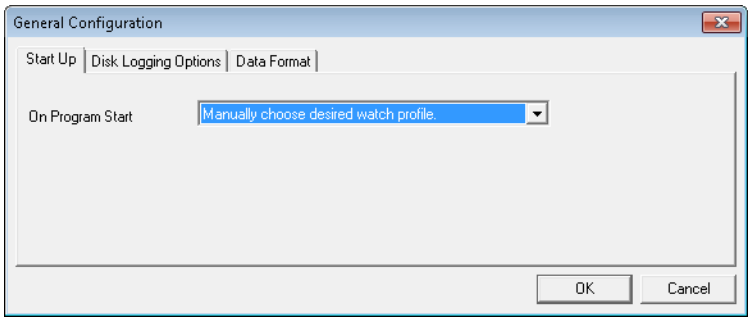


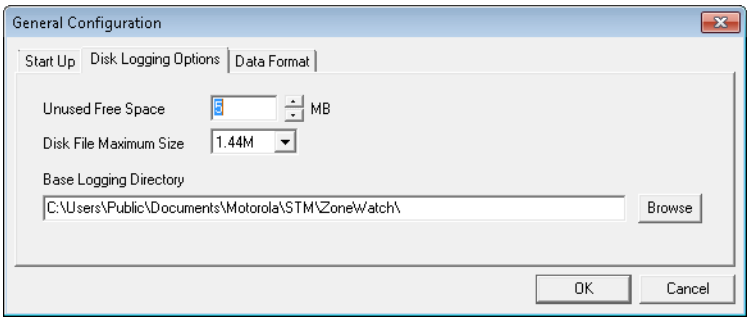
Table 8: Start Up Tab

Field	Options	Description
On Program Start	Manually choose desired watch profile	Opens the Select Watch Profile dialog box each time you start ZoneWatch.
	Automatically select most recently used watch profile	Opens the window profile used in the last session.
	Automatically select default watch profile	Opens the window profile that is selected as the default watch profile. If you select this option, a second data entry area appears in the dialog box which lists all available watch profiles.

2.14.2

Disk Logging Options Tab

Figure 10: General Configuration Dialog Box: Disk Logging Options Tab



The Disk Logging Options tab lets you set options for storing the log file produced by the disk logging feature.

Table 9: Disk Logging Options Tab

Field	Default	Options	Description
Unused Free Space	5 MB	Specified in Megabytes (MB). **NOTE:** If the current free space amount is insufficient, an error message is generated. Log files are deleted automatically when there is an insufficient amount of free space for a new log file. Old files are deleted until a sufficient amount of free space is available for a newer log file.	Spin box to specify an amount of disk free space necessary for the ZoneWatch application. This space is left unused. Log files can fill the hard disk until this limit is reached.
Disk File Maximum Size	1.44 MB	Use **1.2 M** when you plan to copy log files on to a 5 1/4 inch floppy disk. Use **1.44 M** when you plan to copy log files on to a 3 1/2 inch floppy disk. Use **5 M** to hold more data, yet keep file size manageable in most editors. Use **10 M** to increase file size. Use **30 M** if you want the log file to contain a day's worth of a single site data (including raw OSWs).	Drop-down list box allows you to select the maximum size of a single disk logging file.
Base Logging Directory	`C:\Users\Public\Documents\Motorola\STM\ZoneWatch`	The **Browse** button opens the standard Windows directory selection dialog box. You can browse the hard drive and select a base logging directory. Once the selection has been made, the dialog box is closed and the selection is displayed in the field.	Specifies the directory location for storage of log files.

2.14.3
Data Format Tab

The Data Format tab lets you change how IDs are displayed in the Watch Windows. IDs can use either a decimal format or a hexadecimal (hex) format.

Figure 11: General Configuration Dialog Box: Data Format Tab

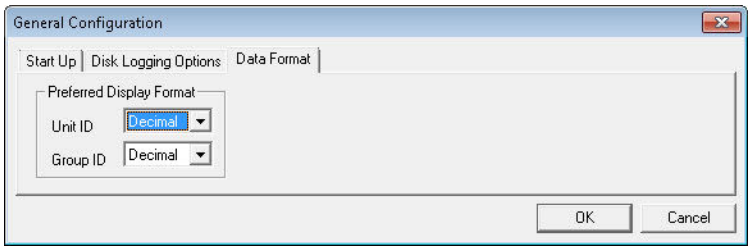


Table 10: Data Format Tab

Field	De-fault	Options	Description
Unit ID	N/A	Decimal or Hexadecimal	Select a format to display radio IDs in the Watch Windows.
Group ID	N/A	Decimal, Hexadecimal, or 80 million	Select a format to display talkgroup and multigroup IDs in the Watch Windows.

2.15
Watch Window Options Dialog Box

The **Watch Window Options** dialog box is opened with the menu item **View** → **Options**. It allows you to change the font size, alias length, and disk logging for the display in each watch window.

Figure 12: Watch Window Options Dialog Box

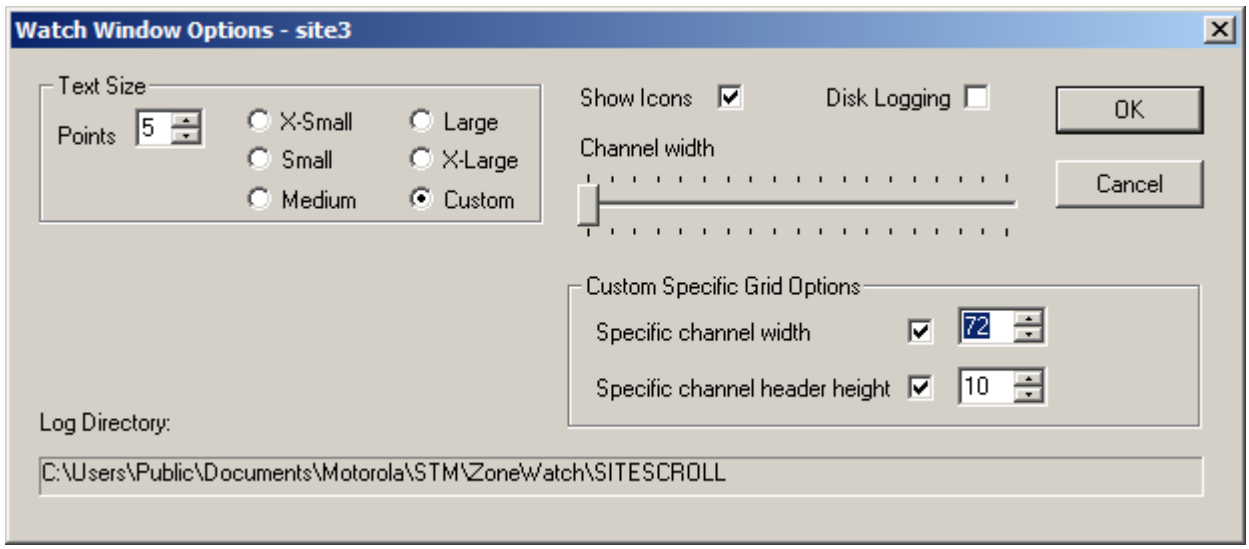


Table 11: Watch Window Options Dialog Box

The **Watch Window Options** dialog box lets you set the following options:

Field	Default	Parameters	Description
Points	8	5 to 30	This spin box allows you to set the font size to the number you want. Click the up and down arrows to the right of the box to change the number.
Text Size	Small	• X-Small • Small • Medium • Large • X-Large • Custom	Select one of the following to choose a preset font size: • **X-Small** preset to a point size of 7. • **Small** preset to a point size of 8. • **Medium** preset to a point size of 9. • **Large** preset to a point size of 10. • **X-Large** preset to a point size of 11. • **Custom** appears when you select a point size with the **Points** spin box that is not a preset font size.
Show Icons	Yes	Yes or No	Allows you to view icons in the Channel Grid Watch Window.
Channel Width	N/A	N/A	Enables changing the width of the grid cells. The Channel Width field only appears for the Channel Grid window and the Single-Site window with channel grid.
Disk Logging	Disabled	N/A	Enables logging of raw events to a file on the disk drive. The location is listed at the bottom of the window. This box is selectable only for the following Watch Window types: • Multi-Site Scroll • Single-Site (when scroll data is enabled) • Raw Display Otherwise, the check box does not appear on the screen.

2.16
Alarm Status Window

The **Alarm Status** window lets you view the status of alarms and provides additional information about their causes.

Figure 13: Alarm Status Window

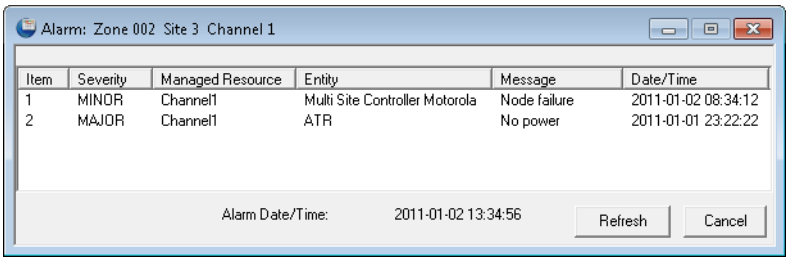


Table 12: Alarm Status Window

The fields of **Alarm Status** window include:

Field	Description
Item	Object position in the window
Severity	Displays the severity of an alarm. Seven severities are possible: Unknown, Clear, Warning, Minor, Major, Critical, or Commfailure.
Managed Resource	Displays the affected resource.
Entity	Displays the affected entity within the resource.
Message	Describes the details of the failure (including the state and cause information associated with the failure).
Date/Time	Displays the date and time when the alarm occurred.
Alarm Date/Time	Displays the date and time of the recently downloaded data.
Refresh	The button that refreshes the alarm status in the list. **NOTE:** If the alarm status changes in time, the information about it is not updated in the Alarm Status window. Press the Refresh button to get the latest alarm status information.

2.17
Site Selectable Alerts

Site Selectable Alerts are initiated by specially configured supervisor subscribers to alert personnel that an event such as a blast is impending. They can be sent for a single site or all sites in the zone and are played by all subscribers at the site.

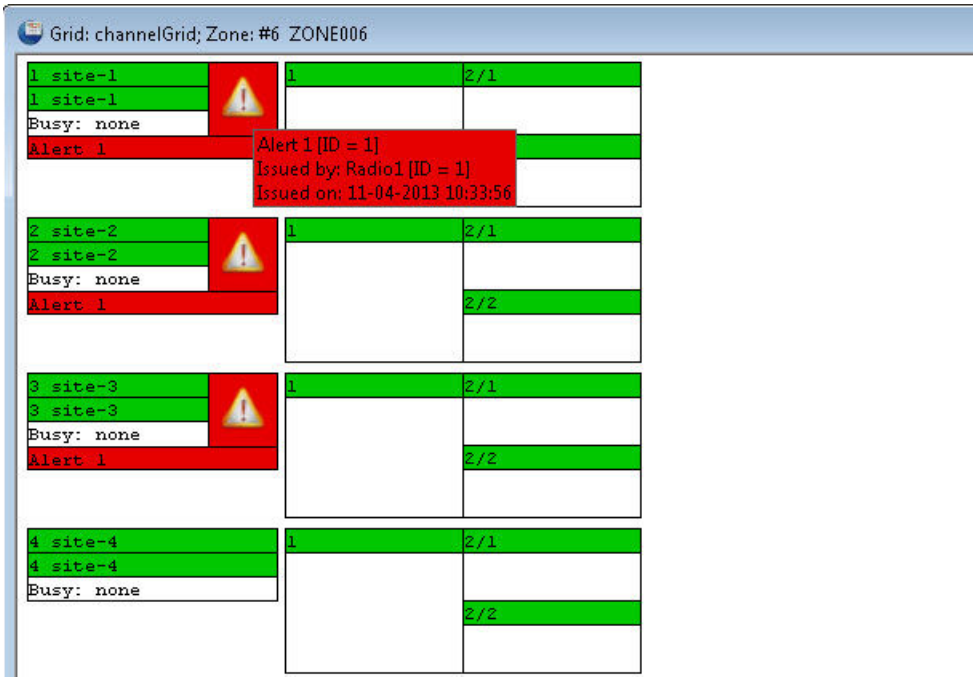
The alerts are displayed in the ZoneWatch Channel Grid Watch Window, and the Single-Site Watch Window.

In the Channel Grid Watch Window, a red icon and the description of the alert are displayed for each impacted site. Additionally, the tooltip displays the following information:

- alert alias and alert ID
- alias and Unit ID of the initiating subscriber

- date and time that the alert was initiated

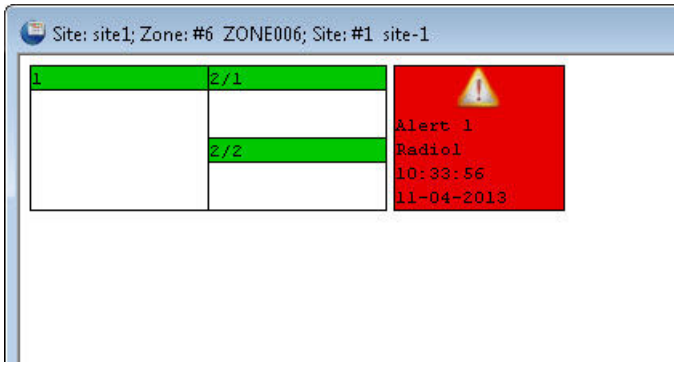
Figure 14: Site Selectable Alerts – Channel Grid Watch Window



In the Single-Site Watch Window, if an alert arrives for the site, a red field with an alert icon and the following information is displayed:

- alert alias
- alias of the initiating subscriber
- date and time that the alert was initiated

Figure 15: Site Selectable Alerts – Single-Site Watch Window



Additionally, all Site Selectable alert events are displayed in the Single-Site and Multi-Site Scroll Watch Windows (alert submissions and cancellations).

2.18
Station Control Commands

The ASTRO® 25 Conventional station control commands are displayed in ZoneWatch and logged in Historical Reports displaying the command type as a numerical value.

Table 13: Conventional Station Control Commands

Command	Numerical Value
Select Frequency 1	1
Select Frequency 2	2
Select Frequency 3	3
Select Frequency 4	4
Select Frequency 5	5
Select Frequency 6	6
Select Frequency 7	7
Select Frequency 8	8
Select Frequency 9	9
Select Frequency 10	10
Select Frequency 11	11
Select Frequency 12	12
Select Frequency 13	13
Select Frequency 14	14
Key Frequency 1	32
Key Frequency 2	33
Key Frequency 3	34
Key Frequency 4	35
Key Frequency 5	36
Key Frequency 6	37
Key Frequency 7	38
Key Frequency 8	39
Key Frequency 9	40
Key Frequency 10	41
Key Frequency 11	42
Key Frequency 12	43
Key Frequency 13	44
Key Frequency 14	45
Key without PL (not a unique Station Control command)	63
PL Monitor	64
Select PL 1	65

Command	Numerical Value
Select PL 2	66
Select PL 3	67
Select PL 4	68
Select PL 5	69
Select PL 6	70
Select PL 7	71
Select PL 8	72
Second Receiver On	96
Second Receiver Off	97
Repeat Mode Enable	112
Repeat Mode Disable	113
Wild Card 1 Enable	128
Wild Card 1 Disable	129
Wild Card 2 Enable	130
Wild Card 2 Disable	131

Table 14: Digital Conventional Station Control Commands

Command	Numerical Value
Select Frequency	1
Repeat Mode Enable	2
Repeat Mode Disable	3
Monitor Mode Enable	4
Key without PL (not a unique Station Control command)	5
Select PL	6
Second Receiver Mute Enable	7
Second Receiver Mute Disable	8
Wild Card 1 Enable	9
Wild Card 1 Disable	10
Wild Card 2 Enable	11
Wild Card 2 Disable	12
Select CKR ID	13

NOTE: The Frequency Select command is used to disable the Monitor mode. There is no distinct Monitor OFF station control command.

Chapter 3

ZoneWatch Operation

This chapter specifies tasks that you perform once the ZoneWatch is installed and operational on your system.

3.1 Starting the ZoneWatch Application

A watch profile of the ZoneWatch determines the Watch Windows to open and display trunking activity and radio call information. A watch profile defines the Watch Windows you see when using ZoneWatch. You can configure ZoneWatch to open a profile automatically, or to prompt you to select a profile each time you open the application. Watch profiles, Watch Windows definitions, and filters are created and edited in the Provisioning Manager application. See the *Provisioning Manager User Guide* manual.

Procedure:

1. Double-click the **PRNM Suite <version>** icon on the desktop.

   Figure 16: PRNM Suite Icon

   The Application Launcher opens.

2. Double-click the **Primary Zone Core** or **Backup Zone Core** icon.

   NOTE: For systems without the DSR feature, it is always **Primary Zone Core**.

   A list of the available zones appears.

3. Double-click the icon for the zone that you want to monitor.

   The applications associated with the selected zone appear in the contents pane.

4. Double-click the **ZoneWatch** icon.

   The Select Watch Profile dialog box appears.

   NOTE: The Select Watch Profile dialog box appears only if the **Manually choose desired watch profile** option was previously selected in the startup tab of the General Configuration window.
   Only the profiles assigned to the same security group as you, appear in the Available Watch Profiles list. (If you are supermgr, all watch profiles are listed.)

5. In the Available Watch Profiles list, select the profile that you want to use.

6. Click **Open**.

   The ZoneWatch main window opens and displays a set of Watch Windows associated with the selected watch profile.

3.2 Configuring Watch Profiles

Watch profiles are configured in the Provisioning Manager. See the *Provisioning Manager User Guide*.

3.2.1 Creating a New Watch Profile

To create a watch profile, use the Provisioning Manager application. See the *Provisioning Manager User Guide*.

3.2.2 Setting Up an Initial Watch Profile

Procedure:

1. In the ZoneWatch main window, select **File** → **Properties**.

   The **General Configuration** dialog box appears with the Start Up tab selected.

2. From the On Program Start drop-down list, select one of the following to define how you want ZoneWatch to start each time:
   - **Manually choose desired watch profile**
   - **Automatically select most recently used watch profile**
   - **Automatically select default watch profile**

   NOTE: See: Start Up Tab on page 26 for more details on each of the options in the drop-down list.

3. Perform one of the following actions:

If…	Then…
If you have selected the **Manually choose desired watch profile** option or the **Automatically select most recently used watch profile** option,	click **OK**.

If…	Then…
If you have selected the **Automatically select default watch profile** option,	perform the following actions: **a.** Use the arrow button at the end of the **default watch profile** field to display a list of watch profiles. **b.** Select the watch profile you want to use as the default. **NOTE:** When you close and restart ZoneWatch, the main window displays the Watch Windows associated with the default watch profile you selected without opening the Select Watch Profile dialog box first. **c.** Click **OK**.

The dialog box closes.

3.2.3
Changing the Selected Watch Profile

When and where to use:
You can change the Watch Windows that you are viewing by selecting another watch profile in the Select Watch Profile dialog box.

Procedure:

1. In the ZoneWatch main window, select **File** → **Open Watch Profile...**.
2. In the **Select Watch Profile** dialog box, select the profile that you want to use and click **Open**.

   The ZoneWatch main window displays a set of Watch Windows associated with the selected watch profile.

3.3
Configuring Watch Windows

You can configure individual Watch Windows to view specific information, such as font size and icons. You can also configure Watch Windows to enable disk logging and to clear trunking data.

3.3.1
Setting the Data Format

When and where to use:
By default, ZoneWatch displays IDs (such as radio IDs and talkgroup IDs) in decimal format. You can change this data format to hexadecimal (hex) format, using the General Configuration dialog box.

Procedure:

1. In the ZoneWatch main window, select **File** → **Properties**.
2. In the **General Configuration** dialog box, select the **Data Format** tab.
3. In the Preferred Display Format region, select one or all the numeric formats that you want to change:
   - **Unit ID** – Individual radio IDs

- **Group ID** – Talkgroup or multigroup IDs

4. Click **OK**.

   All new activity in the window appears with the format you selected in the **Data Format** tab. (The existing activity still displays the previous format.)

3.3.2
Setting Disk Logging Options

When and where to use:
You can set the options for the disk logging feature, using the **General Configuration** dialog box.

NOTE: For information on the available menu options, see: Disk Logging Options Tab on page 27.

Procedure:

1. In the ZoneWatch main window, select **File** → **Properties**.
2. In the **General Configuration** dialog box, select the **Disk Logging Options** tab.
3. Set the desired options for the disk logging feature.
4. Click **OK**.

   The dialog box closes.

3.3.3
Enabling Disk Logging

When and where to use:
You can archive message data sent to the Single-Site, Multi-Site Scroll, and Raw Display Watch Windows in a log file.

Procedure:

1. In the ZoneWatch main window, select the Watch Window for which you want to enable disk logging.

   NOTE: Disk logging can be enabled for Single-Site, Multi-Site Scroll, and Raw Display Watch Windows.

2. Do one of the following:
   - Select **View** → **Options...**
   - Right-click the active window and select **Options** from the pop-up menu.

   The Watch Window Options dialog box appears.

   NOTE: The title bar of the Watch Window Options dialog box includes the name of the currently selected window.

3. Select the **Disk Logging** check box.
4. Click **OK**.

   The dialog box closes.

3.3.4
Viewing Log Files in the Base Logging Directory

When and where to use:
If Disk Logging is enabled, you can access the log files for analysis and troubleshooting purposes.

NOTE: The message data stored in a log file is encoded in binary format. The ATIA Log Viewer is the application used to see logs in decoded text format.

Procedure:

1. In the Base Logging Directory, right-click the log file you want to view.

   A shortcut menu appears.

   NOTE: The Base Logging Directory path name is listed in Disk Logging Options Tab on page 27.

2. Click **Send To**, and then **ATIA Log Viewer**.

   The log file appears.

3.3.5
Changing the Font Size in a Watch Window

You can change the size of the display text font in a selected Watch Window.

Procedure:

1. In the ZoneWatch main window, select the Watch Window where you want to change the font.
2. Do one of the following:
   - Select **View** → **Options...**
   - Right-click the active window and select **Options** from the pop-up menu.

   The Watch Window Options dialog box appears.

   NOTE: The title bar of the Watch Window Options dialog box includes the name of the currently selected window.

3. Do one of the following to change the font size:
   - In the **Points** box, use the up and down arrows to select a point size for the font. Sizes range from 7 to 30 points. When you select values that are not preset, the **Custom** option appears.
   - Click the option in front of the name for each preset font size.
4. Click **OK**.

   The dialog box closes.

3.3.6
Turning Grid Window Icons On and Off

Grid windows can display icons that correspond to the type of channel activity displayed. This feature may be turned on and off.

Procedure:

1. In the ZoneWatch main window, select the Watch Window where you want to turn the icons on or off (it must be a Channel Grid or Site Watch Window).
2. Do one of the following:
   - Select **View** → **Options...**
   - Right-click the active window and select **Options** from the pop-up menu.

   The Watch Window Options dialog box appears.

   NOTE: The title bar of the Watch Window Options dialog box includes the name of the currently selected window.

3. Select the **Show Icons** check box to turn on the icons. Clear the **Show Icons** check box to turn off the icons.
4. Click **OK**.

   The dialog box closes and the icons appear or disappear from the selected window.

3.3.7
Clearing Trunking Data in a WatchWindow

Use the Clear Trunking Data menu option to clear all information from the Watch Windows and start over with new radio call information.
To clear trunking data in all Watch Windows, select **Clear Trunking Data** in the View menu of the ZoneWatch main window. As a result, all Watch Window displays are cleared of data and begin filling with new information.

3.3.8
Adjusting Channel Grid Display

The size of the grid corresponding to selected channels in the Channel Grid Display can be adjusted.

Procedure:

1. In the Channel Grid or Site Watch Window, perform one of the following actions:
   - Select **View** → **Options...**
   - Right-click the active window and select **Options** from the pop-up menu.

   The Watch Window Options dialog box appears.

   NOTE: The title bar of the Watch Window Options dialog box includes the name of the currently selected window.

2. Perform one of the following actions:

If…	Then…
If you want to increase or decrease your channel width,	perform the following action: **a.** Move the **Channel width** slider right or left.
If you want to override previous text size and channel width controls settings,	perform the following actions: **a.** In the **Custom Specific Grid Options**, select the check box corresponding to the parameter you want to change. **b.** Click the up and down arrows to set a value for the chosen parameter.

3. Click **OK**.

   The dialog box closes and the size of the grid is changed.

3.3.9
Refreshing Configuration Data

If changes are made to the ZoneWatch configuration (watch profile, Watch Windows, or filters) while you are running ZoneWatch, the windows do not show these changes. You can use the Refresh Configuration Data option to check the database for any watch profile changes and update the display without stopping and restarting ZoneWatch.

Procedure:

Perform one of the following actions:

- In the ZoneWatch main window, select **View** → **Refresh Configuration Data**.
- Press **F5**.

The displayed Watch Windows are reset with the updated configuration and begin to update with new radio call information.

3.4
Freezing a Single Watch Window

ZoneWatch lets you stop a window from updating with new radio call information. This function allows you to examine a particular call for specific data.

Procedure:

1. In the ZoneWatch main window, select the Watch Window that you want to freeze.
2. Do one of the following:
   - Select **View** → **Freeze**
   - Right-click in the window and select **Freeze**.

   The selected Watch Window stops updating with new information. The word `FROZEN` appears before the name of the window on the title bar.

   NOTE: Upon freezing a Watch Window, all data received for the window between freezing and thawing is not retrievable.

3.5
Freezing All Watch Windows

ZoneWatch lets you stop a window from updating with new radio call information. This function allows you to examine a particular call for specific data.

Procedure:

In the ZoneWatch main window, select **View** → **Freeze All**.

All the Watch Windows stop updating with new radio call information. Each window displays the word `FROZEN` before the name in the titlebar.

NOTE: Upon freezing Watch Windows, all data received between freezing and thawing is not retrievable.

3.6
Thawing a Single Watch Window

After you freeze one or more Watch Windows, use the Thaw function to allow the windows to begin updating with the latest radio call information.

Procedure:

1. In the ZoneWatch main window, select the frozen Watch Window that you want to thaw.
2. Do one of the following:
   - Select **View** → **Thaw**.
   - Right-click in the window and select **Thaw**.

   NOTE: Upon thawing a Watch Window, all data received for the window between initial freezing and thawing is not retrievable.

   The selected Watch Window begins to update with the most recent radio call information.

3.7
Thawing All Watch Windows

After you freeze one or more Watch Windows, use the Thaw function to allow the windows to begin updating with the latest radio call information.

Procedure:

In the ZoneWatch main window, select **View** → **Thaw All**.

All Watch Windows begin to update with the most recent radio call information.

NOTE: Upon thawing Watch Windows, all data received between initial freezing and thawing is not retrievable.

3.8
Viewing Alarm Status

You can monitor alarm statuses using Grid Window.

Procedure:

1. In the Site Reported State field in the Grid Window, right-click within a channel header if you want to view the channel alarm status, or right-click within the site header if you want to view the site alarm status.
2. From the pop-up menu, select **Alarms**.

   NOTE: No alarms are displayed if the site and channel are operating correctly.
   You can also check the alarms for this channel in the Single-Site Watch Window.

   The alarm status dialog box appears with the status of the active channel or site alarms.

3.9
Closing a Single Watch Window

You can close a single Watch Window without having to close the entire ZoneWatch application.

Procedure:

1. In the ZoneWatch main window, select the Watch Window that you want to close.
2. Do one of the following:
   - Select **File** → **Close**.
   - Click the **Close** button in the upper right-hand corner of the Watch Window.

   The selected Watch Window closes.

3.10
Reopening a Closed Watch Window

You can reopen a Watch Window that you recently closed by using the Window menu.

Procedure:

1. Click the **Window** menu.

   A drop-down list displays currently open Watch Windows in the first section and any recently closed Watch Windows in the second section.

2. Select the recently closed Watch Window that you want to reopen.

   The selected window appears in the main window.

3.11
Monitoring System Activity

Use the ZoneWatch application to monitor activities such as radio calls, channel usage, and raw trunking activity.

NOTE: If a site controller is configured with an incorrect Site ID, the UEM may display two separate site objects (not only as a redundant group name), and the ZoneWatch application may show gray for the site or zone. Re-configuring the site controller with the correct Site ID alone do not automatically result in the correct state change displayed in the UEM. To remedy this situation, the site objects in the UEM should be (manually) deleted, and a re-discovery operation should be performed in the UEM. If a UEM re-discovery operation is not performed after re-configuring the site controller with the correct Site ID, the UEM display and ZoneWatch display will not be updated. After re-discovery, refresh the configuration data in the ZoneWatch.

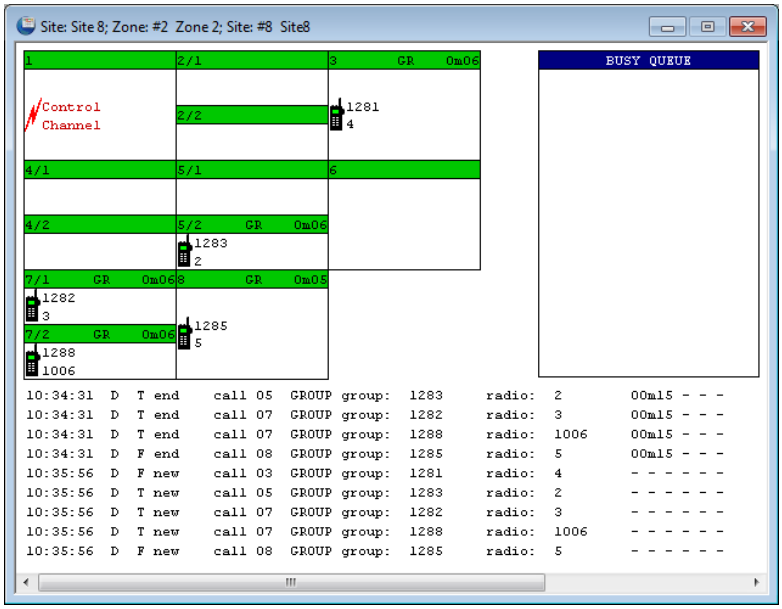
3.11.1
Monitoring Radio Call Activity for a Single Site

Monitor the Single-Site Watch Window to view radio call activity for a specific site. This Watch Window provides a comprehensive view of call activity by channel, as well as a listing of radio call events and busy queue activity.

Procedure:

1. Within ZoneWatch, select a watch profile that contains the Single-Site Watch Window.

   Figure 17: ZoneWatch Single-Site Watch Window



   In the channel grid, TDMA-only, and Dynamic channels are depicted as divided into two slots, whereas FDMA-only channels are not divided. Therefore, you can easily differentiate between TDMA and FDMA calls, and see if a channel is TDMA-capable. When an FDMA call is placed to a Dynamic channel, the slots become merged for the duration of the call.

2. Monitor the Single-Site Watch Window for information about radio call activity within the site. Three types of information can be presented:

   - A grid display showing the channel usage for the site (upper-left corner of the window).

- A scrolling text display showing the trunking activity for the site (bottom of the window) and functions as a log for call details.
- A busy queue display showing busy queue activity for the site (upper-right corner of the window).

NOTE: Grid display and busy queue display are optional and can be seen only if configured in the watch profile. See: Single-Site Watch Window on page 18 for more details.

3.11.2

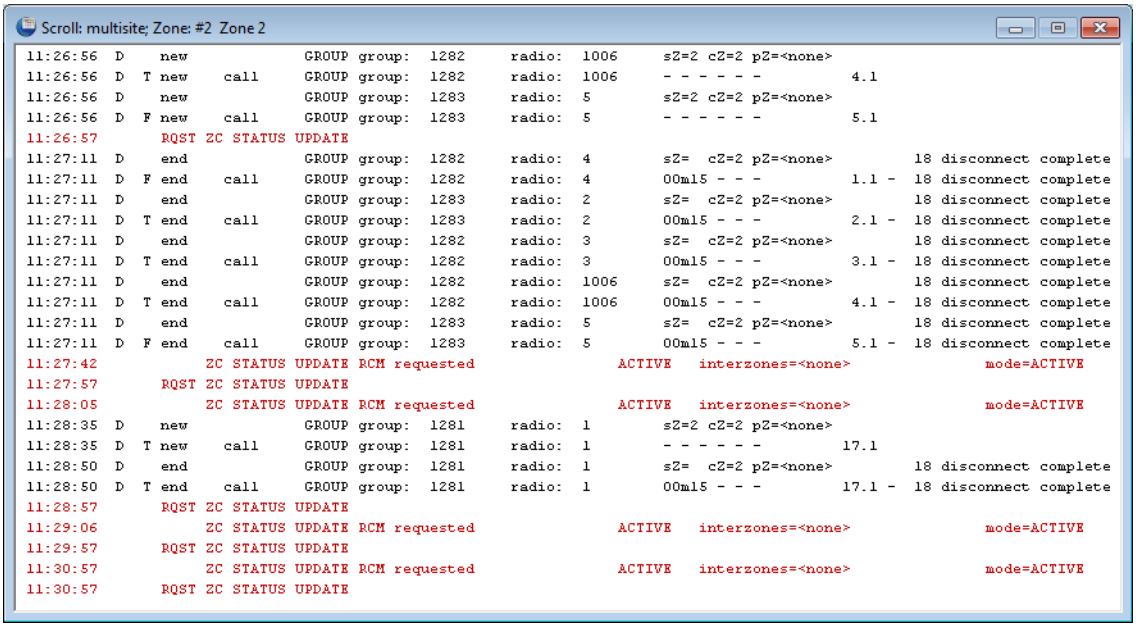
Monitoring Radio Call Activity for Multiple Sites Within a Zone

To view radio call activity for two or more sites within a zone, you can monitor the Multi-Site Scroll Watch Window. This Watch Window provides a detailed display of trunking activity by event using a scrolling text format.

Procedure:

1. Within ZoneWatch, select a watch profile that contains the Multi-Site Scroll Watch Window.

   Figure 18: ZoneWatch Multi Site Scroll Watch Window



2. Monitor the Multi-Site Scroll Watch Window for information about radio call activity within the zone.

   The Watch Window utilizes a scrolling display that shows trunking activity for the zone.

3.11.3

Monitoring Channel Usage Activity Within a Zone

To view radio call activity by channel for all sites within a zone, you can monitor the Channel Grid Watch Window. This Watch Window provides a grid display of current activity on each channel in the zone. Within the grid display, a color indicator provides the status of each site and channels within the site.

Procedure:

1. Select a watch profile containing the appropriate Channel Grid Watch Window definition.

2. Monitor the Channel Grid Watch Window activity and status within the zone for trunking and conventional talkgroup channels.

3.11.4
Monitoring Busy Queue Activity Within a Zone

To view busy queue activity for two or more sites within a zone, you can monitor the Busy Queue Watch Window. This Watch Window provides a real-time display of radio call requests waiting in the busy queue within a zone. A heavily active busy queue may be a sign that performance is suffering, indicating that you may need to change the system configuration.

Procedure:

1. Select a watch profile that contains the Busy Queue Watch Window.
2. Monitor the Busy Queue Watch Window for information about call requests that are currently waiting in the zone busy queue.

3.12
Exiting ZoneWatch

Procedure:

1. Perform one of the following actions:
   - Select **File** → **Exit Program**.
   - In the ZoneWatch main window, click the **Close** button.
2. In the confirmation message box, click **Yes**.

Chapter 4

ZoneWatch Troubleshooting

Table 15: ZoneWatch – General Troubleshooting

Problem	Troubleshooting
ZoneWatch displays gray for the site or zone.	If a site controller is configured with an incorrect Site ID, the ZoneWatch may show gray for the site or zone. Re-configuring the site controller with the correct Site ID alone do not automatically result in the correct state change displayed in the UEM. To remedy this situation, the site objects in the UEM should be (manually) deleted, and a re-discovery operation should be performed in the UEM. After re-discovery, refresh the configuration data in the ZoneWatch. See: Refreshing Configuration Data on page 40. As a result, the display for the Watch Windows is reset. If a UEM re-discovery operation is not performed after re-configuring the Site Controller with the correct Site ID, the UEM display and ZoneWatch display will not be updated.

4.1 Troubleshooting with Microsoft Windows Settings

When and where to use:
When you open the ZoneWatch application, a number of the ZoneWatch windows appear (watch windows configured in the ZoneWatch profile). While trying to reposition any of the ZoneWatch windows, a frame or its contents may disappear. It depends on the Windows desktop appearance settings. If you experience such problems while working with ZoneWatch, follow the procedure to configure the Windows dragging windows settings.

Procedure:

1. Open Windows command prompt, type `systempropertiesadvanced` and click **OK**.

   The System Properties window appears, with the Advanced tab open.

2. In the **Performance** section, select **Settings**.
3. In the **Performance Options** window, select the **Show window contents while dragging** check box and click **OK**.