System Release 2.8.5
MOTOTRBO™ CPS

Repeater Diagnostics and Control (RDAC) User Guide

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Document History

Version	Description	Date
MN003787A01-AA	Original release of the *Repeater Diagnostics and Control (RDAC) User Guide*	July 2017
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About This Guide

This manual provides user information for the MOTOTRBO ™ Repeater Diagnostics and Control (RDAC) applications.

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What is Covered in This Guide

This guide contains the following chapters:

- Introduction to RDAC
- Purchasing Applications Features
- RDAC Features
- Troubleshooting Section

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Helpful Background Information

Motorola Solutions offers various courses designed to assist in learning about the system. For information, go to http://www.motorolasolutions.com/training to view the current course offerings and technology paths.

Related Information	Purpose
Radio Management Deployment Guide	Distributed on the MOTOTRBO™ CPS and its tools' CD.
MOTOTRBO CPS, Tuner, AirTracer, and RDAC Applications Installation Guide	Provides installation, operations, and troubleshooting information for the CPS and its tools. Distributed on the CPS and its tools' CD.
MOTOTRBO CPS and AirTracer Applications Installation Guide	Provides installation, operations, and troubleshooting information for the CPS and its tools. Only for selected region. Distributed on the CPS and its tools' CD.
MOTOTRBO Tuner Application Installation Guide	Provides installation, operations, and troubleshooting information for the Tuner application. Only for selected region. Distributed on the CPS and its tools' CD.
MOTOTRBO RDAC Application Installation Guide	Provides installation, operations, and troubleshooting information for the RDAC application. Only for selected region. Distributed on the CPS and its tools' CD.
MOTOTRBBO Radio Management User Guide	Provides introduction, common tasks, and description on each features in Radio Management Configuration Mode. Also available in online help version.
MOTOTRBBO CPS Radio Management User Guide	Provides introduction, common tasks, and description on each features in CPS and Radio Management Template Mode. Also available in online help version.
MOTOTRBBO Tuner Online Help	Provides introduction, common tasks, and description on each features in Tuner.
MOTOTRBBO RDAC User Guide	Provides introduction, common tasks, and description on each features in RDAC. Also available in online help version.

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Introduction to RDAC

Welcome to MOTOTRBO™ Repeater Diagnostics and Control (RDAC) Software

MOTOTRBO RDAC is a standalone Windows application for system technicians who need to run diagnostics on the radio (repeater or base radio) that has the RDAC capability. It allows the user to remotely monitor the status of the radio or MNIS (MOTOTRBO Network Interface Service) and gather real-time radio hardware failure reports via alarm messages reported by the radio. In addition to the diagnostics capability, the application also allows the user to control some of the parameters of a radio. The application can be used in a Single-Site (Local mode) or remote mode environment with the main purpose of maintaining all the radios registered within the system.

- Getting Around the RDAC GUI

Feature Classification:
These icons will be displayed next to the RDAC features within the Help to identify radio modes for which a feature is enabled.

Symbol	Modes Available in Radio
	Analog mode
	Digital mode

Getting Around the RDAC GUI

Description

This section gives an introduction to the RDAC graphical user interface (GUI). It provides an overview of the different views and toolbars available in the RDAC screen.

View	Description
Diagnostics Table	This is the top frame that displays a list of radios and diagnostics information in a table form. See Diagnostics Table View for more information.
RSSI	This is the bottom frame that displays the additional diagnostics information for the currently selected radio in the Diagnostics Table view. See also RSSI View.
Voting Details View	Displays a list of repeaters in current voting system and voting information as a table. This application also displays the digital voting status information and controls the digital voting repeater in Voting Details View.

Toolbar	Description
Systems	This is the button at the top of the Diagnostics Table View that, when clicked or when the shortcut key ALT+S is pressed, launches a dialog that allows the user to add systems and configure the system settings. See the individual help topic for the features under Systems.
Connect	This is the button at the top of the Diagnostics Table View that, when clicked or when the shortcut key ALT+C is pressed, allows the user to connect to a system in Remote Mode**,** or to the base radio/repeater in Local Mode. In Remote mode, clicking the Connect button will display a list of systems available for connection. In Local mode, clicking the Connect button will connect to the local base radio/repeater. See Link Establishment for more information on the connection.
Options	This is a button at the top of the Diagnostics Table View that, when clicked or when the shortcut key ALT+O is pressed, launches a dialog to display and allow the user to change application options. See the individual help topic for the features under Options.
RDAC Log	This is the button at the top of the Diagnostics Table View that, when clicked or when the shortcut key ALT+L is pressed, launches a dialog to display the application log. See the individual help topic for the features under RDAC Log.
Repeater Log	This is the button at the top of the Diagnostics Table View that, when clicked or when the shortcut key ALT+R is pressed, launches a dialog to display the additional diagnostics information for the currently selected radio in the Diagnostics Table view. See the individual help topic for the features under Repeater Log.
Control	This is the button at the top of the Diagnostics Table View that, when clicked or when the shortcut key ALT+N is pressed, launches a dialog that allows the user to perform control operations for the currently selected radio in the Diagnostics Table view.
Help	This is the button at the top of the Diagnostics Table View that, when clicked or when the shortcut key ALT+H or F1 is pressed, displays a help icon and a drop-down for the user to select 'Contents and Index' or 'About'. Selecting 'Contents and Index' launches the help window whereas selecting 'About' launches the About window.
Status	This is a status bar at the bottom of the application that displays information on radio connection status, write/reset actions, and connection mode (i.e. Remote mode or Local mode).

Toolbar

Systems

Systems

Description

This button launches the Systems dialog box that allows the user to add systems and configure the system settings.

Connection Mode

Remote Mode

Description

This feature displays and allows the user to select the Remote Mode for the application.

Note

- When Remote Mode is selected, all **Local Mode** features are disabled.

Local Mode

Description

This feature displays and allows the user to select the Local operating mode for the application.

Note

- When Local Mode is selected, all **Remote Mode** features are disabled.

Add

Description

This button allows the user to create a new system and adds it to the list of systems when clicked. As systems are added, each name will be added as (Sys 1, Sys 2, Sys 3, etc.). A maximum of 16 systems are allowed to be added. For each system added, the RDAC UDP Port will be automatically incremented, as it is required that each system uses a unique RDAC UDP Port.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode.

Delete

Description

This button allows the user to delete systems if they are no longer in use when clicked. After deletion, the system will no longer be available for connection in **Remote Mode**.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode.

Rename

Description

This button allows the user to change the name of the system when clicked. Alternately, select the system and press F2 to rename it.

Note

- A maximum of 32 characters is allowed.
- Names must contain at least one valid character.
- Valid characters are alphanumerics, spaces and special characters.
- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode.

Remote Settings

System Type

Description

This feature identifies the mode in which the selected system is running. The available options are: IP Site Connect, Capacity Plus, and Linked Capacity Plus.

Notes

- Proper setting of this feature is necessary to connect to the system correctly.
- This feature is supported in **Remote Mode** only.

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Master IP Address

Description

This feature displays and allows the user to configure the IP address of the Master radio. The format and range for the address are (000-255).(000-255).(000-255).(000-255). The default value is 0.0.0.0.

The Master IP Address does not need to be unique across all systems, but the combination of the Master IP Address and Master UDP Port must be unique across systems.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode.

Master UDP Port

Description

This feature displays and allows the user to configure the Port number of the Master radio. The default value is 50000.

Range	
Maximum	65535
Minimum	1024
Increment	1

The Master UDP Port does not need to be unique across all systems, but the combination of the Master IP Address and Master UDP Port must be unique across systems.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**

RDAC ID

Description

This feature displays and allows the user to configure a unique RDAC Application Peer ID which will be used in Peer to Peer Protocol (P2P) messages to identify the application on the network. The default value is 1.

Range	
Maximum	16776415
Minimum	1
Increment	1

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**

RDAC UDP Port

Description

Displays and allows the user to configure a unique RDAC Application Peer Port number which will be used in Peer to Peer Protocol (P2P) messages to identify the application on the network. The default value is 50000.

Range	
Maximum	65535
Minimum	1024
Increment	1

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**

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Authentication Key

Description

This feature displays and allows the user to select an authentication key for Peer to Peer Protocol (P2P) messages. If Peer packet authentication is enabled, all P2P messages sent and received by the application will be authenticated. This key is 20 bytes in length and is a shared authentication key that must be the same in all radios/peers including the RDAC PC belonging to the same IP system.

For security reasons, once the authentication key is saved, its value is shown as Ø.

Range	
Maximum	FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF (Hex)
Minimum	0000000000000000000000000000000000000000 (Hex)
Increment	1 (Hex)

Note

- Peer packet authentication is disabled if the value of this feature is set to 0.
- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**

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Firewall Open Timer

Description

This feature displays and allows the user to select a firewall open message timer for Peer to Peer Protocol (P2P) messages. This timer is used to keep the connection alive between the application and its peer by having a periodic message sent between them at an interval as defined here. The default value of this timer is 6 seconds.

Range	
Maximum	60 sec
Minimum	5 sec
Increment	1 sec

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**

Email Settings

To Email Address

Description

This box displays the selected email addresses that will receive notification.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**
- A maximum of 10 email addresses per system is supported.
- This feature is disabled if the System list is empty or the selected system in the list is currently connected.
- This feature is disabled if the Email Notification feature is disabled (unchecked).

See Also

- **Add**
- **Delete**

Add

Description

This button allows the user to add email addresses from the Email Address list to receive notification for the selected IP system. When clicked, a Select Email Address dialog box appears for the user to select the desired email addresses from the Available Email Address list and move the addresses to the Selected Email Address list by clicking the Add button. The selected email address will appear in the **To Email Address** list when the Select Email Address dialog box closes.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**
- This feature is disabled if the System list is empty or the selected system in the list is currently connected.
- This feature is disabled if the Email Notification feature is disabled (unchecked).

Delete

Description

This button allows the user to delete email addresses that no longer require the notification.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**
- This feature is disabled if the System list is empty or the selected system in the list is currently connected.
- This feature is disabled if the Email Notification feature is disabled (unchecked).

Select Notification

Select Notification

Description

This box displays and allows the user to select the available notifications to trigger the email notification when the events are detected. The user can select to be notified for the following features:

- **Repeater Connect**
- **Repeater Disconnect**
- **MNIS Connect**
- **MNIS Disconnect**
- **Fan Alarm**
- **Temp Alarm**
- **TX Alarm**
- **RX Alarm**
- **PA Voltage Alarm**
- **VSWR Alarm**
- **TX Power Alarm**
- **TX Gain Alarm**
- **Backplane Supply Alarm**
- **Ext. Circulator Temp Alarm**
- **Power System Alarm**
- **Frequency Reference Alarm**
- **Forced Rest Failure Alarm**

Notes

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**
- This feature is disabled if the System list is empty or the selected system in the list is currently connected.
- This feature is disabled if the Email Notification feature is disabled (unchecked).

Repeater Connect

Description

This checkbox allows the user to choose if send email notification for repeater connect event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

Repeater Disconnect

Description

This checkbox allows the user to choose if send email notification for repeater disconnect event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

MNIS Connect

Description

This checkbox allows the user to choose if send email notification for MNIS connect event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

MNIS Disconnect

Description

This checkbox allows the user to choose if send email notification for MNIS disconnect event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

Fan Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a fan alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

Temp Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a temp alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

TX Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a TX alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

RX Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for an RX alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

PA Voltage Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a PA Voltage alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

VSWR Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a VSWR alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

TX Power Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a TX Power alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

TX Gain Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a TX Gain alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

Backplane Supply Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a Backplane Supply alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

Ext. Circulator Temp Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for a Ext. Circulator Temp alarm event.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked

Power System Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for any Power System-related events.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked.
- This feature is only available for MOTOTRBO SLR 5000 repeaters.

Frequency Reference Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for any Frequency Reference-related events.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked.
- This feature is only available for MOTOTRBO SLR 5000 repeaters.

Forced Rest Failure Alarm

Description

This checkbox allows the user to choose whether or not to send an email notification for any Forced Rest Failure-related events.

Notes

- This field is disabled when Local Mode is checked.
- This field is disabled when System List is empty.
- This field is disabled if the selected system in System List is currently connected.
- This field is disabled if the Email Notification is unchecked.

Options

Options

Description

This button launches a dialog to display and allow the user to change application options.

General

Select Language

Description

This feature allows the user to select a language from the list of languages populated from the registry.

Note

- This feature is disabled if there is only one language available.

Hide Messages

Description

This feature allows the user to enable or disable the warning messages.

Note

- This feature is disabled if there are no messages currently disabled.

Alarm Sound

Description

This feature allows the user to turn on or off sound which is played when an alarm is detected, and when the alarm is released.

Email Notification

Description

This feature allows the user to enable or disable the Email notification feature. When enabled, the RDAC application will send an email to the email addresses when the selected notification is detected. The user needs to configure the settings in **Toolbars**->**Options**->**Email SMTP** and **Toolbars**->**Systems**->**Email Settings** after enabling this feature.

Note

- This feature is disabled if there is a system in the System list that is currently connected.

Email SMTP

SMTP Server

Description

This feature allows the user to enter a Simple Mail Transfer Protocol (SMTP) server name. The maximum length for the server name is 255 UTF-8 characters.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- The user is responsible for entering a valid domain name. The application does not validate the format of the server name other than the length of the name.
- This feature is disabled if there is a system in the System list that is currently connected.

SMTP Server Port

Description

This feature allows the user to enter the SMTP server port. The default value is 25.

Range	
Maximum	32000
Minimum	1
Increment	1

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- This feature is disabled if there is a system in the System list that is currently connected.

Use SSL

Description

This feature allows the user to use SSL for outgoing SMTP mail.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- This feature is disabled if there is a system in the System list that is currently connected.

Username

Description

This feature allows the user to enter a user name for the SMTP server authentication. The maximum length is 255 UTF-8 characters.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- This feature is disabled if there is a system in the System list that is currently connected.

Password

Description

This feature allows the user to enter a pasword for the SMTP server authentication. The maximum length is 255 UTF-8 characters.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- The user will not be able to see the characters that are typed.
- This feature is disabled if there is a system in the System list that is currently connected.

From Email Address

Description

This feature allows the user to enter the source email address. The maximum length of the address is 320 UTF-8 characters.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- The maximum length before the @ symbol must be 64 characters or less. The maximum length after the @ symbol must be 255 characters or less.
- The email address format must contain at least one non-whitespace character before the alias '@' symbol and at least one after the symbol, followed by a dash '.' and at least another two characters after the dash.
- This feature is disabled if there is a system in the System list that is currently connected.

To Email Addresses

Description

This feature allows the user to enter an email address for Email Notification feature. The maximum length of the address is 320 UTF-8 characters.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- This feature is disabled if there is a system in the System list that is currently connected.

Email Address

Description

This feature displays a list of email addresses for Email Notification feature.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- A maximum of 50 email addresses per application is supported.
- Each email address in the list must be unique.
- This feature is disabled if there is a system in the System list that is currently connected.

Add

Description

This button adds the text entered in To Email Addresses to the **Email Address** list.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- This feature is disabled if there is a system in the System list that is currently connected.

Delete

Description

This button deletes the selected email address from the Email Address list.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- This features is disabled if the **Email Address** list is empty.
- This feature is disabled if there is a system in the System list that is currently connected.

Test

Description

This feature sends a test email to validate the email connection.

Note

- This feature is disabled if the Email Notification feature is disabled (unchecked).
- This feature is disabled if there is a system in the System list that is currently connected.
- This feature is disabled if the **To Email Addresses** feature is empty.

Diagnostics Logging

Diagnostics Logging

Description

Diagnostics logging feature allows you to retrieve software alarm data from the repeater and store these data in a log format (refer to Software Alarm Data Log Behavior). The logging information is important for developers to analyze the root cause of the reported alarm. You can set the interval duration for the RDAC software to retrieve the software data alarm. You can also delete the software data alarm using the Clear Software Alarm Data feature.

This feature contains the following configurable fields:

Field	Functionality
Enable Logging	This checkbox allows you to enable or disable the Diagnostics Logging feature. When you enable the Enable Logging checkbox; RDAC retrieves the software alarm data (when there are software alarm activities in the repeater) and store the data in a log format. When you disable the Enable Logging checkbox; the Retrieve Software Alarm Data is disabled. Therefore, you are unable to retrieve the diagnostics log report.
Retrieval Interval (Min)	This spin edit allows you to set interval duration for the RDAC to retrieve the software alarm data from the repeater. The range is within 5-60 minutes. The default value is 30 minutes.

Note

- This feature is not editable.

RDAC Log

RDAC Log

Description

This button launches a dialog to display the application log information when clicked. The data grid view for the application Log are as follows:

- **Select Date Range**
- **Log View (Default)**
- **Select System**
- **System ID**
- **Date Time**
- **Radio ID**
- **Site ID**
- **IP Address**
- **UDP Port**
- **Radio Name**
- **Event Type**
- **Response**

Buttons available for this log are as follows:

- **Print**
- **Print Preview**
- **Save As**
- **E-mail**
- **Delete**
- **Close**

Select Date Range

Description

This feature allows the user to select a date range to filter out the log entries by date when enabled (checked). Unchecking this feature causes the table to display rows in the entire date range of the source data.

To select a date range:

1. Click the Start Date box and select a date from the calendar dropdown list. Selecting a start date filters the row entries for the log list to be within the range of the start date value to the current date.
2. Click the End Date box and select a date from the calendar dropdown list. Selecting an end date filters the row entries for the log list to be within the range of the start date value to the selected end date. The minimum value selectable for this box must be no less than the current value of the Start Date. The maximum value is the current date.

Log View (Default)

Description

Allows the user to switch between Default view and Voting view. If the user selects *Default*, the RDAC log report will be displayed. If the user selects Voting, the Voting Log view will be displayed.

Select System (RDAC Log)

Description

Entries can be filtered by selecting a system to view only those entries associated with a particular system when enabled (checked). Unchecking this feature causes the table to display rows in the entire system range of the source data.

Note

- This feature is enabled by default if a system tab is opened when the RDAC log dialog is launched. However, when no system tabs are opened, this feature is disabled.

System ID

Description

Displays the system alias or 'Local' for local connection. For events logged in IP Site mode, this field shall be prefixed with the string 'IP: '.

Date
Time

Description

Displays the timestamp of the PC clock time of the log event.

User Name

Description

Displays the Windows username of the user logged in at the time of the log event.

Radio ID

Description

Displays the ID of the repeater or MNIS associated with the logged event.

Site ID

Description

This column displays the Site ID of the site that any connected radio is in. The user can click on the additional filter icon in this column header and select the option from the dropdown list to show only rows in which the Site ID column contains the selected option.

Note

- This feature is available when System Type is set to *Linked Capacity Plus*.

IP Address

Description

Displays the IP Address of the repeater or MNIS associated with the logged event.

UDP Port

Description

Displays the UDP Port of the repeater or MNIS associated with the logged event.

Radio Name

Description

Displays the Radio Name of the repeater associated with the logged event.

Event Type

Description

Displays a description of the Log entry. The log captures alarms, connection, disconnection, read RSSI, read Repeater Log, clear Repeater Log, write, and reset event for all the base radios/repeaters. The log also captures changes to channel type (only for digital and analog channel), knockdown, and state. Besides radio events, the log also captures the connect, disconnect and status change event for the MNIS.

Response

Description

Displays a description of the log event results.

Print

Description

This button allows the user to print the currently displayed log.

Print Preview

Description

This button allows the user to preview the log before printing.

Save As

Description

This button allows the user to save the current log to a file in the htm, html or csv (comma separated values) format at a desired location. A dialog box appears for the user to choose a file to replace or specify a file name to save under.

E-mail

Description

This button allows the user to e-mail the current log.

Delete

Description

This button allows the user to delete log entries before a specific date. For example, if the log is taking a long time to display.

Close

Description

This button allows the user to close the currently open log browser window when clicked.

Repeater Log

Repeater Log

Description

This button launches a dialog to display the additional diagnostics information for the currently selected radio in the Diagnostics Table view when clicked.

Note

- This button is disabled when there is no connected radio or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This button is disabled when the current selected peer is MNIS.
- The Repeater Log list displays "Empty Log" if the log read from the radio has no data.
- The Repeater Log list displays some extended alarm information which is not available in the Diagnostics Table View. See Radio Alarms for more information.

Name

Description

This Repeater Log list column displays the alarm names of the radio highlighted in the Diagnostics Table View.

Note

- Some extended alarm information is available only in the Repeater Log which is not available in the Diagnostics Table View. See Radio Alarms for more information.

Type

Description

This Repeater Log list column displays the alarm classification of the radio highlighted in the Diagnostics Table View. The type can be either "Major" or "Minor".

Option	Functionality
Major	See **Radio Alarms** for the radio alarm classification.
Minor	See **Radio Alarms** for the radio alarm classification.

State

Description

This Repeater Log list column displays the logged state of the alarms of the radio highlighted in the Diagnostics Table View. The type can be either "Detected" or "Released".

Option	Functionality
Detected	An alarm is active.
Released	An alarm is inactive.

Time

Description

This Repeater Log list column displays the time stamp for the alarm entry.

Diagnostics Name

Description

Displays the of alarm-related diagnostics name. The available choices are *Modem Temperature*, *VSWR*, *PA Output Power*, *Transmit Frequency*, *Transmit Power*, *Control Voltage*, *Modem Voltage*, *RSSI Slot1*, *RSSI Slot2*, *Exciter Current Sense*, *PA Current 1*, *PA Current 2*, *PA Current 3*, *PA Current 4*, *PA Temperature*, *PA Voltage*, *PSU Voltage*, *DC Current*, *External Battery Voltage*, and *Modem Current*.

Notes

- This feature is not editable.
- This feature is only available for MOTOTRBO SLR 5000 repeaters.

Diagnostics Value

Description

Displays the first of alarm-related diagnostics value.

Notes

- This feature is not editable.
- This feature is only available for MOTOTRBO SLR 5000 repeaters.

Save Log

Description

This button allows the user to save the alarm log data displayed in the Repeater Log list for the currently selected radio in the Diagnostics Table View when clicked. A Save dialog will be prompted to let the user save the log into the specified location in html format.

Note

- This button is enabled only when the Repeater Log list has data displayed.

Read Log

Description

This button allows the user to read the alarm log data of the currently selected radio in the Diagnostics Table View into the Repeater Log list when clicked.

Clear Log

Description

This button allows the user to clear the log within the currently selected radio in the Diagnostics Table View.

Control

Control

Description

This button launches a dialog that allows the user to perform control operations for the currently selected radio in the Diagnostics Table view. The control operations include changing the repeater current channel, transmit power, state, and knockdown settings.

Note

- This feature is supported in **Remote Mode** only. It is disabled when in Local Mode**.**
- This button is disabled when there is no connected radio or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This button is disabled when the current selected peer is MNIS.

Current Channel

Description

This feature displays the current channel of the radio highlighted in the Diagnostics Table View and allows the user to change the radio channels during runtime. The available options are all the available channels.

Note

- This feature is disabled when the State value in the Diagnostics Table View is "Locked" or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is supported in Remote Mode only.

TX Power

Description

This feature displays the current TX Power of the radio highlighted in the Diagnostics Table View and allows the user to change the radio power level during runtime. The available options are "High" or "Low". If the radio is keyed up at the moment of the power change, the call will be ended abruptly and the radio will be dekeyed immediately. The new power level will take effect the next time the radio keys up.

Option	Functionality
High	Used when a stronger signal is needed to extend transmission distances.
Low	Used when communicating in close proximity, and to prevent transmissions into other geographical groups.

Notes

- This feature is supported in Remote Mode only.
- A message is displayed when another repeater is selected, prompting user to write or discard changes.
- This feature is disabled when the State value in the Diagnostics Table View is "Locked" or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is not supported for satellite receiver.

State

Description

This feature displays the state of the radio highlighted in the Diagnostics Table View and allows the user to enable or disable it during runtime. The available options are "Enabled" or "Disabled".

Option	Functionality
Enabled	In this state, the radio is capable of transmit, receive and repeat operations.
Disabled	In this state, the radio will not transmit, receive or repeat in either analog or digital mode. CWID is not transmitted and the disabled LED will also be lit up. A disabled radio can still allow some controls such as reset and channel change and can be enabled back. It still responds to GPIO controls, such as channel steering and to alarms and diagnostics. If the radio was keyed up at the moment of the disable control, the call will be ended abruptly and the radio will be dekeyed immediately.

Note

- For state changes that require a radio reset, the user may not see the state change before the radio is reset and removed from the display.
- This feature is disabled when the State value in the Diagnostics Table View is "Locked" or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is supported in Remote Mode only.

See Also

- **Radio States** for definition of the radio states.

Knockdown 

Description

This feature displays the knockdown setting of the radio highlighted in the Diagnostics Table View and allows the user to change the setting during runtime. The available options are "Knockdown" or "Repeat".

Option	Functionality
Knockdown	The radio will not repeat but still can receive and transmit on wire line audio.
Repeat	Normal repeat functionality.

Notes

- Unlike the rest of the control operations where the radio is reset after changes, the radio will not reset during this operation.
- This feature is disabled when the State value in the Diagnostics Table View is "Locked" or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is disabled when the **Channel Type** value in the Diagnostics Table View is "Digital".
- This feature is supported in Remote Mode only.

Reset

Description

This button allows the user to reset the currently selected radio in the Diagnostics Table View when clicked. This is a firmware reset (i.e. the hardware will not be powered down during reset but only the software will be reinitialized). The radio reset procedure takes about 8 to 10 seconds. During that time, the radio is unavailable for repeating and other control functions.

Note

- Upon resetting the radio, the connection will be lost.
- This feature is disabled when the State value in the Diagnostics Table View is "Locked" or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is supported in Remote Mode only.

Write

Description

This button allows the user to write control changes to the currently selected radio in the Diagnostics Table View when clicked.

Note

- Writing to a radio will cause a reset. Upon resetting, the connection will be lost.
- This feature is disabled when the State value in the Diagnostics Table View is "Locked" or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This button is supported in Remote Mode only and the user has modified either the **Current Channel**, **TX Power**, State or Knockdown value in the Control View.

Reload

Description

This button allows the user to cancel any user changes and refresh the radio information for the currently selected radio in the Diagnostics Table View when clicked.

Notes

- This feature is disabled when the State value in the Diagnostics Table View is "Locked" or the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is supported in Remote Mode only.

General Information

Link Establishment

Description

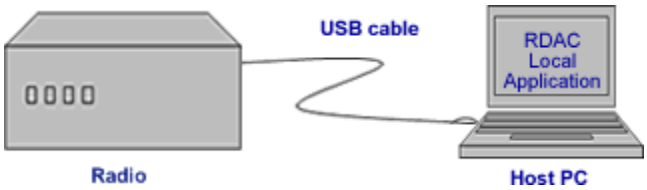
This section describes the behavior of RDAC controls when connecting to or losing connection to a radio in **Local Mode** and **Remote Mode**. In addition, it also provides a rough sketch of the hardware setup. For detailed information on how to properly configure your system, please see the system planner.

Behavior of controls when connecting to or losing connection to a radio in Local mode and Remote mode:

1. When the application has established a connection to a radio, it is added to the Diagnostics Table View.

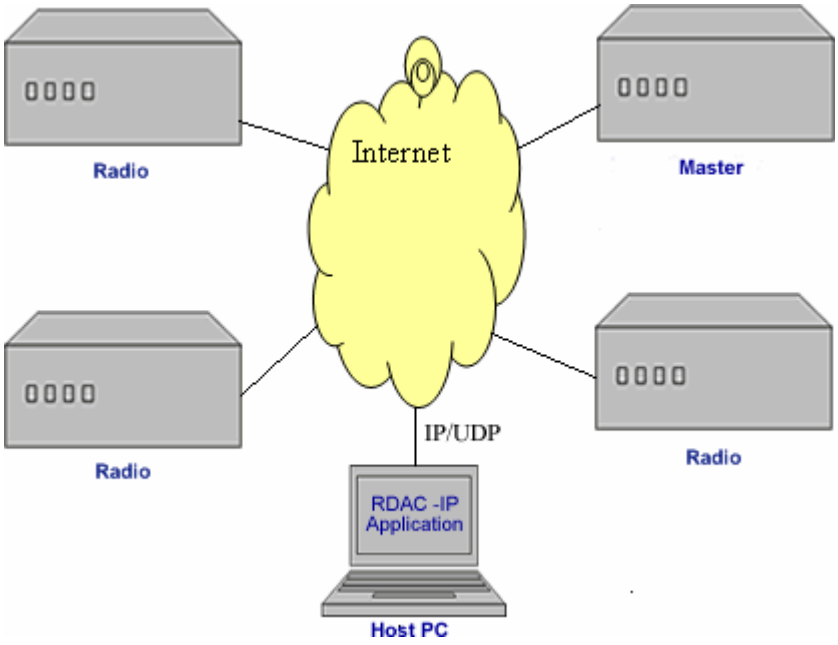
2. When the application loses connection to a radio, it indicates the status by changing the row color of the Diagnostics Table View to grey (i.e. the row is disabled, along with the Control and Repeater Log buttons). When the connection is re-established, the row color returns to the enabled color. This is automatic in Remote mode. In Local mode, the user needs to click the Connect button to re-establish or connect to a new radio.
3. If the application is already connected to one or more radios, clicking the Connect button will disconnect the application from those radios first, before attempting to reconnect to the new ones.
4. In Remote mode, if the application cannot connect to the Master within a specified time, the user will be prompted to retry or edit the connection parameters.
5. When a specific major alarm occurs in a radio, the radio resets immediately and the connection to the radio is lost. This is indicated by the row color of the Diagnostics Table View changes to grey.
6. Upon a reset caused by user initiation (i.e. when the user clicks on the Write or Reset button in the Control dialog), the application warns the user that the radio is unavailable after reset for a period of time. In addition, the radio will be disabled in the Diagnostics Table View.
7. If an error occurs while connecting to or reading a radio in Remote mode, the error will be logged to the RDAC Log. An error icon will also be displayed in the status bar until the user views the RDAC Log or restarts the application.

Hardware setup in Local mode:



- The connection between the radio and PC is through a local universal serial bus (USB) interface.

Hardware setup in Remote mode:



- The connection between the radios and the host PC is through an IP-based user datagram protocol (UDP) connection.
- If a single radio is connected in the Remote mode, the radio must be designated as a Master.

See Also

- **Radio Alarms** for the radio alarm classification.

Radio Alarms

Description

The tables below provide the classification of the radio alarms along with the diagnosis and probably solution for each of the alarms.

- MOTOTRBO Conventional Repeater Alarms
- MTR3000 Base Radio/Repeater Alarms
- Restricted Access to System (RAS) Alarms
- MOTOTRBO SLR Series Repeater Alarms

MOTOTRBO Conventional Repeater Alarms:

Sub-system	Alarm Name	Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System	Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System	Alarm Class (radio state) - without Backup Repeater - Capacity Plus System	Alarm Class (radio state) - with Backup Repeater - Capacity Plus System	Diagnostic Table View	Diagnostic Repeater Log	Diagnosis	Probable Remedy
Receiver	RX Alarm	Major (locked)	Major (locked)	Major (locked)	Major (locked)	Yes	Yes	The receiver PLL has lost lock.	Local Dealer: Consult the Detailed Service Manual for trouble shooting or return the unit to Depot for service. Motorola Repair Depot: Consult the Detailed Service Manual

									for trouble shooting .
Transmitter	TX Alarm	Major (locked)	Major (locked)	Major (locked)	Major (locked)	Yes	Yes	The exciter PLL has lost lock.	Local Dealer: Consult the Detailed Service Manual for trouble shooting or return the unit to Depot for service. Motorola Repair Depot: Consult the Detailed Service Manual for trouble shooting .
	Fan Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	Yes	The main fan of the repeater has failed.	Local Dealer: Replace the Fan unit. Motorola Repair Depot: Replace the Fan unit.
	TX Power Alarm (not applicable to 8 MB Repeater)	Minor (enabled)	Major (locked)	Minor (disabled)	Major (locked)	Yes	No	The actual transmit power of the repeater has fallen below 50% of the	Local Dealer: Check the environment first. If the alarm persists, consult

								configured power.	the Detailed Service Manual for trouble shooting or return the unit to Depot for service. Motorola Repair Depot: Check the environment first. If the alarm persists, consult the Detailed Service Manual for trouble shooting.
Power System	Power Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	Yes	The station is not at fault. The AC power source has been interrupted and the station is operating on DC power.	No action needed. This is informational only.

Environmental - External to Station	Temp Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	Yes	The station has exceeded the temperature limit that will allow maximum rated output power from the PA	No action needed. This is informational only.
	VSWR Alarm (not applicable to 8 MB Repeater)	Minor (enabled)	Major (locked)	Minor (disabled)	Major (locked)	Yes	Yes	The Voltage Standing Wave Ratio (VSWR) at the antenna port is above 6:1.	Local Dealer: Check the environment first. If the alarm persists, consult the Detailed Service Manual for trouble shooting or return the unit to Depot for service. Motorola Repair Depot: Check the environment first, if the alarm persists, consult the Detailed Service Manual

									for trouble shooting .

MTR3000 Base Radio/Repeater Alarms:

Sub-system	Alarm Name	Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System	Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System	Alarm Class (radio state) - without Backup Repeater - Capacity Plus System	Alarm Class (radio state) - with Backup Repeater - Capacity Plus System	Diagnostic Table View	Diagnostic Repeater Log	Diagnosis	Probable Remedy
Receiver	RX Alarm	Major (locked)	Major (locked)	Major (locked)	Major (locked)	Yes	Yes	The receiver PLL has lost lock.	Local Dealer: Replace receiver FRU. Motorola Repair Depot: Repair or replace the receiver FRU.
	Receiver EEPROM Corruption Type 1	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes	The receiver EEPROM has incurred non-recoverable corruption in a semi-critical memory location	Local Dealer: Replace receiver FRU. Motorola Repair Depot: Recalibrate the receiver FRU.

								.	
	Receiver EEPROM Corruption Type 2	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes	The receiver EEPROM has incurred a recoverable corruption in critical memory location or non-recoverable corruption in a non-critical area of memory.	No action needed. This is informational only.
	Receiver EEPROM Corruption Type 3	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The receiver EEPROM has incurred non-recoverable corruption in a critical memory location.	Local Dealer: Replace receiver FRU. Motorola Repair Depot: Recalibrate the receiver FRU.
	Rx Revision	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The receiver hardware is incompatible with the	Local Dealer: Replace receiver FRU with a hardware version that supports the currently

								currently loaded firmware version.	loaded firmware version, or load a version of firmware that supports the currently installed receiver FRU. Motorola Repair Depot: Replace receiver FRU with a hardware version that supports the currently loaded firmware version, or load a version of firmware that supports the currently installed receiver FRU.
Sub-system	**Alarm Name**	**Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - without Backup Repeater - Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Capacity Plus System**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**
Transmitter	TX Alarm	Major (locked)	Major (locked)	Major (locked)	Major (locked)	Yes	Yes	The exciter PLL has lost lock.	Local Dealer: Replace exciter FRU. Motorola Repair Depot:

									Repair/recalibrate or replace the exciter FRU.
	Fan Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	Yes	The PA fan has failed.	Local Dealer: Replace the PA fan. Motorola Repair Depot: Replace the PA fan. **Note**: The PA and PS fans should be replaced as a pair.
	TX Power Minor Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (disabled) Will not switch to Back up	Yes	No	The PA output power is between 2dB to 3dB below the set output power, or the output power is more than 3dB below the set output power with one or more of the following alarms already detected: Fan Alarm, Temp Alarm, PA Voltage Minor Alarm,	When this alarm is detected, check the Diagnostic Repeater Log to determine which failure - "Tx Power Minor Alarm (-2dB)" or "Tx Power Minor Alarm (-3dB)" has occurred.

								PA Voltage Major Alarm, VSWR Minor Alarm or VSWR Major Alarm.	
	TX Power Major Alarm	Minor (enabled)	Major (locked)	Minor (disabled)	Major (locked)	Yes	No	The PA output power is more than 3dB below the set output power.	Local Dealer: Remedy 1: Verify that the "exciter to PA" cable is properly installed. Remedy 2: If there is not fault in Remedy 1, then replace the PA FRU. Motorola Repair Depot: Remedy 1: Verify that the "exciter to PA" cable is properly installed. Remedy 2: If there is not fault in Remedy 1, repair/recalibrate or replace the PA FRU.
	TX Power Minor Alarm (-2dB)	Minor (enabled)	Minor (enabled)	Minor (disabled)	Minor (disabled) Will not switch to Back up	No	Yes Counterpart to "TX Power Minor Alarm"	The PA output power is between 2dB to 3dB below the set output power of the station.	Local Dealer: Replace PA FRU. Motorola Repair Depot: Repair/recalibrate or replace the PA FRU.

	TX Power Minor Alarm (-3dB)	Minor (enabled)	Minor (enabled)	Minor (disabled)	Minor (disabled) Will not switch to Back up	No	Yes Counterpart to "TX Power Minor Alarm"	The PA output power is more than 3dB below the set output power of the station, but at least one of the following "primary" alarms is also present: Fan Alarm, Temp Alarm, PA Voltage Minor Alarm, PA Voltage Major Alarm, VSWR Minor Alarm, or VSWR Major Alarm.	Local Dealer: Remedy the primary alarms (see appropriate remedy). Motorola Repair Depot: Remedy the primary alarms (see appropriate remedy).
	TX Power Major Alarm (-3dB)	Minor (enabled)	Major (locked)	Minor (disabled)	Major (locked)	No	Yes Counterpart to "TX Power Major Alarm"	The PA output power is more than 3dB below the set output power.	Local Dealer: Remedy 1: Verify that the "exciter to PA" cable is properly installed. Remedy 2: If no fault is found in Remedy 1, then replace the PA FRU.

									Motorola Repair Depot: Remedy 1: Verify that the "exciter to PA"" cable is properly installed. Remedy 2: If no fault is found in Remedy 1, repair/recalibrate or replace the PA FRU.
	TX Gain Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	No	The transmitter gain is low, which is indicative of a failed or failing amplifier stage.	When this alarm is detected, check the Diagnostic Repeater Log to determine which failure - "PA Gain Alarm", "Exciter Final Amp Alarm" or "Exciter Driver Amp Alarm" has occurred.
	PA Gain Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes Counterpart to "TX Gain Alarm"	The PA power control loop is near saturation or in saturation.	Local Dealer: Remedy 1: If an "Exciter Final Amp Alarm" and/or "Exciter Driver Amp Alarm" exist, then replace the Exciter FRU. Remedy 2: If no fault is found in Remedy 1, then replace the PA FRU. Motorola Repair Depot: Remedy 1: If an "Exciter Final Amp Alarm" and/or "Exciter Driver

									Amp Alarm" exist, then replace the Exciter FRU or troubleshoot/repair the Exciter's final/driver amplifier circuit. Remedy 2: If no fault is found in Remedy 1, then repair (check PA final stage first) or replace the PA FRU.
	Exciter Final Amp Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes Counterpart to "TX Gain Alarm"	The current draw of the exciter's final stage is outside of specification.	Local Dealer: Replace the Exciter FRU. Motorola Repair Depot: Replace the Exciter FRU or troubleshoot/repair the Exciter's final amplifier circuit.
	Exciter Driver Amp Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes Counterpart to "TX Gain Alarm"	The current draw of the exciter's driver stage is outside of specification.	Local Dealer: Replace the Exciter FRU. Motorola Repair Depot: Replace the Exciter FRU or Troubleshoot/Repair the Exciter's driver amplifier circuit.
	RF Power Control Alarm	Minor (enabled)	Major (locked)	Minor (disabled)	Major (locked)	Yes	Yes	The transmitter is delivering power in a dekeyed state or	Local Dealer: Replace the PA FRU. Motorola Repair Depot: Repair/recalibrate or replace the PA FRU.

								deliveri ng more power in a keyed state than toleran cing allows.	
Sub-system	**Alarm Name**	**Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - without Backup Repeater - Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Capacity Plus System**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**
Transmitter	PA EEPROM Corruption Type 1	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes	The PA EEPROM has incurred non-recoverable corruption in a semi-critical memory location. **Note**: This alarm is only applicable to the	Local Dealer: Replace PA FRU. Motorola Repair Depot: Recalibrate the PA FRU.

								MTR3000 PA which is important to note in MTR2000 Upgrades.	
	PA EEPROM Corruption Type 2	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes	The PA EEPROM has incurred recoverable corruption in a critical memory location or non-recoverable corruption in a non-critical area of memory. **Note**: This alarm is only applicable to the MTR3000 PA which is important to note in MTR2000 Upgrades.	No action needed. This is informational only.

	PA EEPROM Corruption Type 3	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The PA EEPROM has incurred non-recoverable corruption in a critical memory location. **Note**: This alarm is only applicable to the MTR3000 PA which is important to note in MTR2000 Upgrades.	Local Dealer: Replace PA FRU. Motorola Repair Depot: Recalibrate the PA FRU.
	PA Revision	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The PA hardware is incompatible with the currently loaded firmware version.	Local Dealer: Replace PA FRU with a hardware version that supports the currently loaded firmware version, or load a version of firmware that supports the currently installed PA FRU. Motorola Repair Depot: Replace PA FRU with a hardware

									version that supports the currently loaded firmware version, or load a version of firmware that supports the currently installed PA FRU.
	Exciter EEPROM Corruption Type 1	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes	The exciter EEPROM has incurred non-recoverable corruption in a semi-critical memory location.	Local Dealer: Replace exciter FRU. Motorola Repair Depot: Recalibrate the exciter FRU.
	Exciter EEPROM Corruption Type 2	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes	The exciter EEPROM has incurred recoverable corruption in a critical memory location or non-recoverable corruption in a non-critical area of memory.	No action needed. This is informational only.

	Exciter EEPROM Corruption Type 3	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The exciter EEPROM has incurred non-recoverable corruption in a critical memory location.	Local Dealer: Replace exciter FRU. Motorola Repair Depot: Recalibrate the exciter FRU.
	Exciter Revision	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The exciter hardware is incompatible with the currently loaded firmware version.	Local Dealer: Replace exciter FRU with a hardware version that supports the currently loaded firmware version, or load a version of firmware that supports the currently installed exciter FRU. Motorola Repair Depot: Replace exciter FRU with a hardware version that supports the currently loaded firmware version, or load a version of firmware that supports the currently installed exciter FRU.

	Reference Incompatibility	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	A standard stability reference (1.5ppm) SCM has been installed into a 800/900MHz station. **Note**: This alarm is only applicable to 800/900 MHz stations."	Local Dealer: Replace the SCM with a version (DLN6718) that provides a high stability reference (0.1ppm). Motorola Repair Depot: Replace the SCM with a version (DLN6718) that provides a high stability reference (0.1ppm).
	Interoperability Between Exciter and PA	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The PA and exciter do not have a compatible frequency range with each other.	Local Dealer: Remedy 1: Verify that the correct PA or exciter is installed in the station. Remedy 2: If no fault is found in Remedy 1, then verify that the backplane and PS cables to the PA are correctly installed. Remedy 3: If no fault is found in Remedy 1 or 2, then replace the exciter or PA FRU. Motorola Repair Depot: Remedy 1: Verify that the

									correct PA or exciter is installed in the station. Remedy 2: If no fault is found in Remedy 1, then verify that the backplane and PS cables to the PA are correctly installed. Remedy 3: If no fault is found in Remedy 1 or 2, then repair/recalibrate or replace the exciter or PA FRU.
Sub-system	**Alarm Name**	**Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - without Backup Repeater - Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Capacity Plus System**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**
Power System	AC Power Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	Yes	The station is not at fault. The AC power source has been interrupted and	Local Dealer: The alarm will clear when the AC power source is brought back on line. **Note**: This alarm will be masked if the station is set

								the station is operating on DC power.	for "DC Operation Only" in the "General Settings" of the CPS.
	PA Voltage Minor Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	No	The station is not at fault. This alarm occurs when the station is operating from a DC source with an output voltage that can not sustain the maximum rated output power from the PA.	Local Dealer: When this alarm is detected, check the Diagnostic Repeater Log to determine whether the voltage is at an intermediate level "PA Voltage alarm (Intermediate)" or it is too high "PA Voltage alarm (High)".
	PA Voltage Major Alarm	Major (disabled)	Major (disabled)	Major (disabled)	Major (disabled)	Yes	No	The station is not at fault. This alarm occurs when the station is operating from a DC source that has an output voltage	Local Dealer: The site batteries are near depletion and station shut down is imminent. Service personnel should be dispatched to the site to restore AC power or provide alternate power. This alarm will clear when either the

								which is too low to sustain any level of output power from the PA.	AC is restored or the DC voltage levels are restored to the working limits required by the station.
	PA Voltage Alarm (High)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes Counterpart to "PA Voltage Minor Alarm"	The station is not at fault. This alarm occurs when the station is operating from a DC source with an output voltage that is too high to sustain the maximum rated output power from the PA.	Local Dealer: Proper operation of the battery charger / rectifier should be verified, or verify that the battery plant is designed to the specified voltage operating limits of the station. This alarm will clear when either the AC is restored or the DC voltage levels are restored to the working limits required by the station. **Note**: See the Basic Service Manual for more information on the maximum transmitter output power as a function of DC input voltage.
	PA Voltage Alarm (Intermediate)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes Counterpart to "PA Voltage Minor Alarm"	The station is not at fault. This alarm occurs when the station	Local Dealer: The site batteries are within their normal discharge curve. This alarm will clear when AC power is

								is operating from a DC source with an intermediate output voltage level that can not sustain the maximum rated output power from the PA.	restored. **Note**: See the Basic Service Manual for more information on the maximum transmitter output power as a function of DC input voltage.
	PA Voltage Alarm (low)	Major (disabled)	Major (disabled)	Major (disabled)	Major (disabled)	No	Yes Counterpart to "PA Voltage Major Alarm"	The station is not at fault. This alarm occurs when the station is operating from a DC source that has an output voltage which is too low to sustain any level of output power from the PA.	Local Dealer: The site batteries are near depletion and station shut down is imminent. Service personnel should be dispatched to the site to restore AC power or provide alternate power. This alarm will clear when either the AC is restored or the DC voltage levels are restored to the working limits required by the station.
	Backplane Supply Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	No	One or both of the backpla	When this alarm is detected, check the

								ne linear regulators are delivering potentials outside of their specified range.	Diagnostic Repeater Log to determine which failure - "8 Volt Supply Alarm" and/or "10 Volt Supply Alarm" has occurred.
	8 Volt Supply Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes Counterpart to "Backplane Supply Alarm"	The 8 volt backplane linear regulator is delivering a potential outside of its specified range.	Remedy 1: Verify that the 8V regulator is tightened to its specified torque value. Remedy 2: If no fault is found in Remedy 1, then remove power from the station and remove the exciter/receiver /control board (core assembly) from the station. Next restore power to the station and verify if 8VDC is present at the regulator. If 8VDC is present, identify and repair/replace the fault core assembly FRU. Remedy 3: If no fault is found in Remedy 2, then verify that the 8V regulator is receiving 14VDC. If not, check the backplane

									cable, backplane fuse, and Power Supply. Remedy 4: If no fault is found in Remedy 3, then replace the 8VDC regulator.
	10 Volt Supply Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	No	Yes Counterpart to "Backplane Supply Alarm"	The 10 volt backplane linear regulator is delivering a potential outside of its specified range.	Remedy 1: Verify that the 10V regulator is tightened to its specified torque value. Remedy 2: If no fault is found in Remedy 1, then remove power from the station and remove the exciter/receiver /control board (core assembly) from the station. Next restore power to the station and verify if 10VDC is present at the regulator. If 10VDC is present, identify and repair/replace the fault core assembly FRU. Remedy 3: If no fault is found in Remedy 2, then verify that the 10V regulator is receiving 14VDC. If not, check the backplane cable,

									backplane fuse, and Power Supply. Remedy 4: If no fault is found in Remedy 3, then replace the 10VDC regulator.
Sub-system	**Alarm Name**	**Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - without Backup Repeater - Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Capacity Plus System**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**
Codeplug Configuration	Incorrect Carrier Frequency	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	At least one personality (analog or digital channel) exists in the codeplug which has a frequency outside of the supported electro	Local Dealer: Correct the invalid personality with the CPS application. **Note**: Upon reading the codeplug, CPS will automatically set the invalid personality to a default value that falls within the valid limits of the hardware. The user must then set the defaulted

								nic bandwidth of the receiver, exciter, or PA.	personality to the required setting.
	Incorrect Codeplug for MTR2000 PA	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	The MTR3000 codeplug contains an unsupported MTR2000 PA.	Local Dealer: Correct the invalid MTR2000 sticker code with the Tuner application.
Sub-system	**Alarm Name**	**Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System**	**Alarm Class (radio state) - without Backup Repeater - Capacity Plus System**	**Alarm Class (radio state) - with Backup Repeater - Capacity Plus System**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**

Environmental - External to Station	Temp Alarm	Minor (enabled)	Minor (enabled)	Minor (enabled)	Minor (enabled)	Yes	Yes	The station has exceeded the temperature limit that will allow maximum rated output power from the PA	Local Dealer: Remedy 1: If the "Fan Alarm" is present, this can cause the "Temp Alarm" to be issued as a secondary alarm. If applicable, correct the "Fan Alarm" first, see "Fan Alarm". Remedy 2: If the "Fan Alarm" is not present, power cycle/reset the station so that the firmware can provide an up-to-date status on the integrity of the fan. This action is needed since the polling rate of the fan is substantially less than the polling rate for temperature. Remedy 3: If no fault is found in Remedy 1, verify that there is not a problem with the site temperature itself. The station will clear the "Temp Alarm" and allow maximum rated output power when the temperature of the site is lowered.

									Remedy 4: If no faults are found in Remedies 1 and 2, verify that the rack and cabinet installations of the station are in accordance with the product planner instructions. Remedy 5: If no faults are found in Remedies 1, 2, 3, and 4; replace the PA FRU. Motorola Repair Depot: Remedy 1: If the "Fan Alarm" is present, this can cause the "Temp Alarm" to be issued as a secondary alarm. If applicable, correct the "Fan Alarm" first, see "Fan Alarm". Remedy 2: If no fan fault is found in Remedy 1; repair/replace/recalibrate the PA FRU.
	VSWR Minor Alarm	Minor (enabled)	Minor (enabled)	Minor (disabled)	Minor (disabled) Will not switch to Back up	Yes	Yes	The Voltage Standing Wave Ratio (VSWR), of the equipment the station	Local Dealer: Remedy 1: Verify the operational load the station is coupled to is better than a 2:1 VSWR (minimally). The load

								is coupled to, is between a 3:1 to 5:1. The station has rolled power back to protect the PA.	should be better than a 1.5:1. Remedy 2: If no fault is found in Remedy 1, then replace the PA FRU. Motorola Repair Depot: Replace/repair/ recalibrate the PA FRU.
	VSWR Major Alarm	Minor (enabled)	Major (locked)	Minor (disabled)	Major (locked)	Yes	Yes	The Voltage Standing Wave Ratio (VSWR), of the equipment the station is coupled to, is greater than a 5:1. The station has rolled power back to protect the PA.	Local Dealer: Remedy 1: Verify the operational load the station is coupled to is better than a 2:1 VSWR (minimally). The load should be better than a 1.5:1. Remedy 2: If no fault is found in Remedy 1, then replace the PA FRU. Motorola Repair Depot: Replace/repair/ recalibrate the PA FRU.
	Ext.Circulator Temp Alarm	Minor (enabled)	Major (locked)	Minor (disabled)	Major (locked)	Yes	Yes	A high VSWR is present at the external double circulator tray option.	Local Dealer: Remedy 1: Verify that the operational load (antenna port) the external circulator tray is coupled to is better than a 2:1 VSWR (minimally). The load should be better than a

									1.5:1. Remedy 2: If no fault is found in Remedy 1, then replace the circulator load/temp sensor assembly of the external circulator tray.

Notes

- The alarm classification is defined by Motorola, and cannot be changed by the customer.
- For MOTOTRBO repeaters, the system supports the RDAC features for repeaters with the Tanapa number: PMUE2390A, PMUD2091A, PMUE3017A and PMUD2092A, except for the main fan failure alarm and AC power failure alarm. However, these two unsupported alarms will still be listed in the RDAC screen with their states shown as "Released". These unsupported alarms will be available when the repeaters are serviced with the service kit: PMLN5269.
- Satellite receiver only supports RX only alarms (RX Alarm and AC Power Alarm).

Restricted Access to System (RAS) Alarm:

Sub-system	Alarm Name	Alarm Class (radio state) - without Backup Repeater - Non Capacity Plus System	Alarm Class (radio state) - with Backup Repeater - Non Capacity Plus System	Alarm Class (radio state) - without Backup Repeater - Capacity Plus System	Alarm Class (radio state) - with Backup Repeater - Capacity Plus System	Diagnostic Table View	Diagnostic Repeater Log	Diagnosis	Probable Remedy
Software Alarm	Restricted Access to System (RAS) CFS Failure Alarm	Major (locked)	Major (locked)	Major (locked)	Major (locked)	No	Yes	When the whole system is configured in RAS Enable Mode (the Administrator configures “RAS Enable Mode” in the	Remedy 1: Reconfigure the intermediary to RAS Migration or RAS Disable Mode in CPS locally or

								Intermediary's Security Panel—Authentication options in Restricted Access to System), the repeater will fail into Repeater locked state (if this feature have not been purchased).	remotely, then use CPS to unlock such failed Repeater. Remedy 2: Purchase RAS feature in such failed Repeater, then use CPS to unlock such failed Repeater.

MOTOTRBO SLR Series Repeater Alarms:

Sub-system	Alarm Name	Alarm Class	Name in Diagnostic View	Diagnostic Table View	Diagnostic Repeater Log	Diagnosis	Probable Remedy
Modem	Reference Unlock (External Only) Configured in CPS	Major (SLR5000/8000)	Frequency Reference Alarm	Yes	Yes	Diagnosis 1: External reference is not connected or does not match what is programmed, reference cannot lock to external reference. Diagnosis 2: May not be the fault of the station. The fault may be from the	Connect the station to an operational reference at the programmed frequency and program the correct frequency of applied reference. Alternatively, you can

						external reference.	reprogram the station to use an internal reference.
	Reference Unlock (Internal fall back) Configured in CPS	Minor (SLR5000/8000)	Frequency Reference Alarm	Yes	Yes	Diagnosis 1: External reference does not match what is programmed, reference cannot lock to external reference. However, the station can run on the internal clock. Diagnosis 2: May not be the fault of the station. The fault may be from the external reference.	Remedy 1: Connect the station to an operational reference at the programmed frequency and program the correct frequency of applied reference. Alternatively, you can reprogram the station to use an internal reference. Remedy 2: Replace the modem because an internal reference has failed.

	OCXO Unlock	Major (SLR5000/8000)	Frequency Reference Alarm	Yes	Yes	Diagnosis 1: Reference cannot lock to the internal OCXO and cannot run on the internal VCTCXO due to the limitations in frequency tolerance. Diagnosis 2: Probable hardware failure.	Replace the modem.
	Modem Voltage	• Informational (SLR5000/8000) • Major (SLR1000)	Power System Alarm	Yes	Yes	Voltage to modem is outside of specified range. Modem cannot perform up to specifications.	Remedy 1: If the AC power alarm is set, then you must dispatch a service personnel to the site to restore the AC power or provide an alternative power. This alarm will clear when either the AC is restored or the DC voltage levels are restored to the

							working limits required by the station. Remedy 2: If no AC power alarm is set, then PSU has failed. Therefore, you must dispatch a service personnel to the site to replace PSU FRU or provide an alternative power. This alarm will clear when either the AC is restored or the DC voltage levels are restored to the working limits required by the station.

	Modem Fan	Minor (SLR5000/8000)	Fan Alarm	Yes	Yes	The modem fan is failing or has failed.	Replace the modem fan.
	Modem PA Temperature	User Defined (All)	Temp Alarm	Yes	Yes	Modem temperature is outside of specified limits, which allows rated power to be generated.	Remedy 1: If any fan alarm is present, this can cause this alarm. Replace fan. Remedy 2: If no fan alarm is present, verify that the site temperature is within limits. Remedy 3: If Remedy 1 and Remedy 2 are not the issue, verify that the air flow is not blocked on the repeater either at the intake or exhaust ports.

							Remedy 4: If Remedy 3 is not an issue, replace Modem FRU.
	Modem Module ID Alarm	Major (All)	(None)	No	Yes	EEProm Corrupted.. .data not valid in terms of hardware ID.	Replace Modem FRU.
Sub-system	**Alarm Name**	**Classification**	**Name in Diagnostic View**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**
PA	PA Module ID	Major (SLR5000/8000)	(None)	No	Yes	EEProm Corrupted. Data not valid in terms of hardware ID.	Replace PA FRU.
	PA Communication fail	Major (SLR5000/8000)	(None)	No	Yes	Indicative of a hardware failure.	Remedy 1: Check to ensure a flex connection between the modem and PA is properly made. Remedy 2: Replace PA FRU.
	PA program fail	Major (SLR5000/8000)	(None)	No	Yes	Indicative of a hardware failure.	Remedy 1: Check to ensure a flex connecti

							on between the modem and PA is properly made. Remedy 2: Replace PA.
	Interoperability Between Modem and PA	Major (SLR5000/8000)	(None)	No	Yes	The PA and modem do not have a compatible frequency range/power model with each other.	Remedy 1: Verify that the correct PA/Modem combination is installed in the repeater. Remedy 2: Verify that the cables are installed correctly to the PA FRU. Remedy 3: Replace the Modem or PA FRU.
	PA Final Temp	User Defined (SLR5000/8000)	Temp Alarm	Yes	Yes	PA Final temperature is outside specified limits, which allows rated power to be generated.	Remedy 1: If any fan alarm is present, this can cause this alarm. Replace fan. Remedy

							2: If no fan alarm is present verify that the site temperature is within limits. Remedy 3: If Remedy 1 and Remedy 2 are not the issue, verify that the air flow is not blocked on the repeater either at the intake or exhaust ports. Remedy 4: If Remedy 3 is not the issue, replace the PA FRU.

	Power Amplifier Voltage	Minor (SLR5000/8000)	Power System Alarm	Yes	Yes	Voltage to the PA FRU is outside of specified range. The PA will not perform up to specifications.	When the site batteries are near depletion and station shut down is imminent, perform the following remedies: Remedy 1: If the AC power alarm is set, then you must dispatch a service personnel to the site to restore the AC power or provide an alternative power. This alarm will clear when either the AC is restored or the DC voltage levels are restored to the working limits required by the station. Remedy

							2: If no AC power alarm is set, then PSU has failed. Therefore, you must dispatch a service personnel to the site to replace PSU FRU or provide an alternative power. This alarm will clear when either the AC is restored or the DC voltage levels are restored to the working limits required by the station. Remedy 3: Check the supply connections to the PA FRU to ensure that the connections are installed

							correctly. If the PSU is not present or the OVP or LVS is not available, perform the following remedies: Remedy 1: Could be low voltage where the power source has failed or if batteries are discharged. Remedy 2: Could also be a high voltage where the power source is not functioning properly.
	PA Fan	User Defined (SLR5000/8000)	Fan Alarm	Yes	Yes	The PA fan is failing or has failed.	Replace the PA Fan.
	PA Final Over Current	Minor (SLR5000/8000)	TX Alarm	Yes	Yes	One or more PA final transistors have	Replace PA FRU.

						exceeded normal operating current.	
	PA Gain	Informational (SLR5000/8000)	TX Alarm	Yes	Yes	The transmitter gain is low, indicative of a failed or failing amplifier stage.	Check the diagnostic log to determine if any other alarms are present. Temperature alarms, fan alarms, voltage alarms can point to whether or not there is a need to service the station.
	PA HW Ver	Major (SLR5000/8000)	None	No	Yes	Incorrect PA hardware installed.	N/A
	PA Power Control	User Defined (SLR5000/8000)	TX Power Alarm	Yes	Yes	Transmitter is delivering power in a de-keyed state or delivering more power in a keyed state than tolerance level allows.	Replace the PA FRU.
	Power Roll-back Alarm-(-2dB)	User Defined (SLR5000/8000)	TX Power Alarm	Yes	Yes	The PA output power is 2dB to 3dB below the set output	Remedy 1: Remedy the primary alarms if

						power of the station and at least one of the following "primary" alarms is present: any Fan Alarms, any Temp Alarms, Modem Voltage Alarm, VSWR Minor Alarm, or VSWR Major Alarm.	any. Remedy 2: Replace the PA FRU.
	Power Roll-back Alarm-(-3dB)	User Defined (SLR5000/8000)	TX Power Alarm	Yes	Yes	The PA output power is more than 3dB below the set output power of the station but at least one of the following "primary" alarms is present: any Fan Alarms, any Temp Alarms, PA Voltage Alarm, or VSWR Alarm.	Remedy 1: Remedy the primary alarms. Remedy 2: Replace the PA FRU.
	Power Unleveled	User Defined (SLR5000/8000)	TX Power Alarm	Yes	Yes	The PA output power is more than 3dB below the set output power and no Fan, Temperatu	Remedy 1: Verify that "exciter cable to PA" is properly installed. Remedy

						re, Voltage, or VSWR alarms are present.	2: Verify that "voltage supply cable to PA" is properly installed. Remedy 3: Replace the PA FRU.
	VSWR Minor	User Defined (SLR5000/8000)	VSWR Alarm	Yes	Yes	The Voltage Standing Wave Ratio (VSWR), of the equipment the station is coupled to, is between a 3:1 to 5:1. The station has rolled power back to protect the PA.	Remedy 1: Verify that the operational load that the station is coupled to is better than 2:1 VSWR (minimally). The load must be better than 1.5:1. Remedy 2: If no fault is found in Remedy 1, replace the PA FRU.
	VSWR Major	User Defined (SLR5000/8000)	VSWR Alarm	Yes	Yes	The Voltage Standing Wave Ratio (VSWR), of the equipment the station is coupled to, is greater	Remedy 1: Verify that the operational load that the station is coupled to is better than 2:1 VSWR

						than a 5:1. The station has rolled power back to protect the PA.	(minimally). The load must be better than 1.5:1. Remedy 2: If no fault is found in Remedy 1, then replace the PA FRU.
Sub-system	**Alarm Name**	**Classification**	**Name in Diagnostic View**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**
Chassis	Chassis Module ID Alarm	Major (All)	(None)	No	Yes	Diagnosis 1: Flex cables may not be inserted correctly. Diagnosis 2: EEProm corrupted. Data is not valid in terms of hardware ID.	Remedy 1: Ensure that the flex is inserted correctly into the connector on the modem. Remedy 2: Replace the Chassis.
Chassis	Chassis HW Version Alarm	Major (All)	(None)	No	Yes	Incorrect Chassis hardware installed.	Remedy 1: Replace the Chassis.
Front Panel Board	Front Panel Board Module ID Alarm	Major (All)	(None)	No	Yes	Diagnosis 1: Flex cables may not be inserted correctly. Diagnosis 2: EEProm corrupted. Data is not valid in	Diagnosis 1: Check to see that the flex cables are correctly inserted. Diagnosis 2:

						terms of hardware ID.	Replace front panel board.
	Front Panel Communications Fail	Major (SLR8000)	(None)	No	Yes	Indicative of hardware failure.	Remedy 1 : Check to be sure flex connection between the modem and PSU is properly made. Remedy 2: Replace PSU
	Front Panel Program Fail	Major (SLR8000)	(None)	No	Yes	Indicative of hardware failure.	Remedy 1 : Check to be sure flex connection between the modem and PSU is properly made. Remedy 2: Replace PSU
	Front Panel HW Ver	Major (All)	(None)	No	Yes	Incorrect Front Panel hardware installed.	N/A
Sub-system	**Alarm Name**	**Classification**	**Name in Diagnostic View**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**

Power Supply	PSU Over Temperature	User Defined (SLR5000/8000)	Temp Alarm	Yes	Yes	Power Supply temperature is outside of the specified limits, which allows rated power to be generated. Power supply will shut down until temperature returns to a usable level.	Remedy 1: If any fan alarm is present, this can cause this alarm. Replace fan. Remedy 2: If no fan alarm is present, verify that the site temperature is within limits. Remedy 3: If Remedy 1 and Remedy 2 are not the issue, verify that the air flow is not blocked on the repeater either at the intake or exhaust. Remedy 4: If Remedy 3 is not the issue, replace the PSU FRU.

	PSU Fan	User Defined (SLR5000/8000)	Fan Alarm	Yes	Yes	The Power Supply fan is failing or has failed.	Replace the Power Supply Fan.
	PSU Over Voltage	Informational (SLR5000/8000)	Power System Alarm	Yes	Yes	Power Supply is at fault, voltage sensed at the secondary is too high.	Most likely a hardware issue. Therefore, replace the PSU. If possible, the alarm will clear if the secondary voltage drops within spec.
	PSU Over Current	Minor (SLR5000/8000)	Power System Alarm	Yes	Yes	Power Supply is at fault, current sensed at the primary is too high.	Most likely a hardware issue. Therefore, replace the PSU. If possible, the alarm will clear if the primary current drops within spec.
	Battery Revert	User Defined (SLR5000/8000)	Power System Alarm	Yes	Yes	The station is not at fault. The AC power source has been interrupted and the station is operating on DC power.	The alarm will clear when the AC power source is brought back on line.

	Bad Battery	User Defined (SLR5000/8000)	Power System Alarm	Yes	Yes	Battery charger is unable to charge the battery.	The alarm will clear when the battery is replaced.
	Low Battery	User Defined (SLR5000/8000)	Power System Alarm	Yes	Yes	Battery is nearing end of usefulness. The alarm will clear after the battery is charged sufficiently.	Remedy 1: Visit site to replace batteries with charged ones. Remedy 2: Visit site to charge batteries using auxiliary power. Remedy 3: Wait until site power is available again and the batteries can be charged.
	Battery Present	User Defined (SLR5000/8000)	Power System Alarm	Yes	Yes	Battery is not connected properly. The alarm will clear when battery is connected.	Remedy 1: Connect battery properly. Remedy 2: If no battery is desired, clear the CPS field that shows that the battery is to be expected.

	PSU Module ID Alarm	Major (SLR5000/8000)	(None)	No	Yes	EEProm corrupted. Data is not valid in terms of hardware ID.	Replace the PSU FRU.
	PSU HW Ver	Major (SLR5000/8000)	(None)	No	Yes	Incorrect PSU hardware installed.	Replace the PSU FRU with the correct HW version.
	PSU Communication Fail	Major (SLR5000/8000)	(None)	No	Yes	Indicative of a hardware failure.	Remedy 1: Check to be sure flex connection between the modem and PSU is properly made. Remedy 2: Replace PSU
	PSU Program Fail	Major (SLR8000 only)	(None)	No	Yes	Indicative of a hardware failure.	Remedy 1: Check to be sure flex connection between the modem and PSU is properly made. Remedy 2: Replace PSU
	Incompatible DC Supply	Major (SLR8000 only)	Power System Alarm	No	Yes	Wrong battery type or incorrect DC voltage on supply.	Connect correct battery type or adjust DC supply

							voltage to the correct value.
Sub-system	**Alarm Name**	**Classification**	**Name in Diagnostic View**	**Diagnostic Table View**	**Diagnostic Repeater Log**	**Diagnosis**	**Probable Remedy**
Receiver	RX Lock Detect	Major (All)	RX Alarm	Yes	Yes	Receiver first local oscillator out of lock, no RX functionality.	Could be hardware failure, excessive temperature at RX local oscillator, or loss of the external reference signal. If Modem Temperature alarm is not set and reference unlock is not set, then replace modem. If temperature alarm is set, then wait until it is within temperature and try again. If reference unlock alarm is set, then address the external referenc

							e. If RX lock detect is still alarmed, then replace modem.
Receiver	RSSI	Informational (All)	RX Alarm	Yes	Yes	Receiver Signal Strength Indication (RSSI) is too low, possibly from hardware failure. It could be fault in the antenna/feed or the station.	Remedy 1: Possibly antenna feed faults. Remedy 2: Check to see that the cable from back wall is connected to modem properly internal to the repeater. Remedy 3: Replace the modem.
Receiver	Illegal Carrier	User Defined (All)	Informational (SLR1000 only)	Yes	Yes	The receiver detected an interfering signal.	An interfering signal is present and may be causing sub-optimal system performance.

Modem Transmitter	TX Lock Detect	Major (All)	TX Alarm	Yes	Yes	Transmitter frequency generation out of lock, will be off frequency.	Remedy 1: Could be hardware failure or excessive temperature at TX local oscillator. Remedy 2: If Modem Temperature alarm is not set, then replace modem. Remedy 3: If the temperature alarm is set, then wait until it is within temperature and try again. Remedy 4: If TX lock detect is still alarmed, then replace modem.

Modem Transmitter	Modem PA Alarm	User Defined (All)	TX Alarm	Yes	Yes	Modem PA is failing or failed.	Remedy 1: This could be due to a PA FRU problem. Therefore; if any PA alarms are present, then address them. Remedy 2: This could be due to the modem PA over temperature. Therefore; address the Modem PA Temp Alarm (if present). Remedy 3: If Remedy 1 and Remedy 2 are not the issue, then replace the modem FRU.

Wireline Card	Wireline Board Module ID Alarm	Major (SLR8000)	None	No	Yes	Diagnosis 1: Flex cables may not be inserted correctly. Diagnosis 2: EEProm Corrupted.. .data not valid in terms of hardware ID. Diagnosis 3: Option is selected in CPS but not used in the station.	Remedy 1: Check to see that the flex cables are correctly inserted. Remedy 2: Replace wireline card. Remedy 3: If wireline card is not desired, correct the configuration in CPS to remove the wireline card.
	Wireline HV Ver	Major (SLR8000)	None	No	Yes	Incorrect PA hardware installed.	N/A.
Circulator	External Circulator Temp	Minor (SLR8000)	VSWR Alarm	Yes	Yes	Mistuned circulator or bad antenna VSWR.	Remedy 1: Retune circulator. Remedy 2: Address high antenna VSWR.

See Also

- **Radio States** for definition of the radio states.

Radio States

Description

This section provides information about the radio states.

Description of the working states:

Working State	Description
Enabled	In this state, the radio is capable of transmit, receive and repeat operations.
Disabled	In this state, the radio will not transmit, receive or repeat, but it still responds to GPIO controls, such as channel steering and to alarms and diagnostics. The radio exits this state when the GPIO control indicates an enable event.
Locked	This state is entered when some major alarms occur on the radio. In this state, the radio will not transmit, receive, repeat, or respond to any controls except for diagnostics and state/alarm log retrieval. If for any reason the radio resets while in this state, it reenters the Locked state. The only way to exit this state is for the radio to be serviced by a technician (i.e. by fixing the major alarm issue and rewriting the codeplug into radio using the CPS).

See Also

- **Radio Alarms** for the radio alarm classification.

Voting Repeater

Description

This feature allows user to connect with the voting repeater on IP Site system, Capacity Plus system, and Linked Capacity Plus system over an IP-based UDP connection.

Note

- This feature is supported in the IP connection mode only.

Satellite Receiver

Description

This feature allows user to connect with the satellite receiver IP Site system, Capacity Plus system, and Linked Capacity system over an IP-based UDP connection.

Note

- This feature is supported in the IP connection mode only.

Voter ID Filter Behavior

Description

The following general requirements apply to Voter ID Filter and all of its sub-controls.

Notes

- If current system not has any repeaters at the Diagnostics Table View or Voting Table View, only *Select All* node can be displayed.
- When check or uncheck *Select All*, the all another node will be checked or unchecked.
- As long as one of the Voter ID node be checked, the *Select All* should be checked.
- If all of the Voter ID nodes are unchecked, the Select All should be unchecked.
- When click OK button, the Diagnostics Table View or Voting Table View only show the repeaters that have the voter ID be checked.

Voting Type Filter Behavior

Description

The following general requirements apply to voting type Filter and all of its sub-controls.

Notes

- If current system not has any repeaters at the Diagnostics Table View or Voting Table View, only *Select All* node can be displayed.
- When check or uncheck *Select All*, the all another node will be checked or unchecked.
- As long as one of the Voter ID node be checked, the *Select All* should be checked.
- If all of the Voter ID nodes are unchecked, the Select All should be unchecked.
- When click OK button, the Diagnostics Table View or Voting Table View only show the repeaters that have the voter ID be checked.

Auto Connect Behavior

Description

After launching, the application shall auto-connect to the last connected system when the application was closed. If the application has never connected to a system before, it will not auto-connect to a system.

Note

- This feature is supported in IP connection mode only.

Purchasing Application Features

Purchasing Application Features

Description

Extended RDAC application features can be purchased through the Motorola Online (MOL) website. Once the features are purchased, an EID (Entitlement ID) will be provided from Motorola. Keep the EID in a safe place because it will be used to identify the purchased features and is necessary for enabling those features on the PC.

In order to enable a Feature, it must be Registered. During Registration, the user will enter the EID purchased from MOL and then select the Feature to download to the PC. Please note that during Registration, an external Internet connection is required. After Registration is complete, the selected Feature is available in the application.

The features available for purchase are listed below. To begin using the extended features in RDAC, purchase the features and click on the Help->Register Features… in the RDAC application.

Features Available:

- Multiple Systems – Enables monitoring and control of multiple unique systems simultaneously.

Note

- Contact the Network Administration if the PC is unable to communicate with the license server.
- Features are not transferable from one PC to another.

RDAC Features

Diagnostics Table View

Diagnostics Table View

Description

This is the top frame that displays a list of radios and diagnostics information in a table form. The table is not editable. When Local Mode is selected, at most one radio row is displayed in this table. However, when Remote Mode is selected, multiple rows can be displayed in this table.

Notes

- When the application is installed, only some columns will be displayed by default. The user can add more information to the display by right-clicking on the Table View header and choosing the column to show.
- When a radio is disconnected from the application, its row in the table will be grey.
- The  icon will be displayed when the application is attempting to re-connect to a radio.

- The ✕ icon will be displayed when the connection to the radio is lost.

See Also

- Radio Alarms for the radio alarm classification.
- Radio States for definition of the radio states.

Status

Description

The image in the Diagnostic Table Status column displays the overall alarm status for all the connected radios. The alarm can be in a detected, released or locked state for some radio alarms. The alarm status is detected when any of the radio alarms is detected for the current row. Some alarms will go into the locked state when the **State** value in the Diagnostics Table View is "Locked". By default, some of these alarms are displayed but the user can select any alarms that the user wish to be notified and hide those that the user doesn't wish to be notified. The user does this by right-clicking on the Table View header and either checking a header name to display the alarm or unchecking a header name to hide the alarm. The user can choose to display all alarms by right-clicking on the Table View header and selecting the Show All option.

The image in the Diagnostic Table Status column also displays the status of the Network Interface Service. The status value is in a detected state when the connected Network Interface Service status is in faulty condition, and is in a released state when the MNIS operation is fine.

Display	Description of the Status Value
	A major alarm message is detected in a connected radio, or the Network Interface Service is in a faulty condition.
	A minor alarm message is detected.
	The alarm is released in a connected radio, or the Network Interface Service is in good operational condition.
	The radio is in a Locked state.
	The alarm is not applicable.

Note

- Some extended alarm information is available only in the Repeater Log which is not available in the Diagnostics Table View. See Radio Alarms for more information.
- The MTR3000 base radio/repeater alarms will go into the not applicable state when the connected radio is any platform other than the MTR3000 base radio/repeater.

See Also

- **RDAC Log** for the connected radios and Network Interface Service log information.

Site ID

Description

This Diagnostic Table column displays the Site ID of the site that any connected radio is in. The user can click on the additional filter icon in this column header and select the option from the dropdown list to show only rows in which the Site ID column contains the selected option.

Note

- This feature is available when System Type is set to *Linked Capacity Plus*.

IP

Description

This Diagnostic Table column displays the radio or MNIS Ethernet internet protocol (IP) address of any connected radio, including the Master if in **Remote Mode**.

Note

- When connected in Local Mode, only the IP address will be shown. This IP address is the Radio IP address (preprogrammed in CPS).

IP Site UDP Port

Description

This Diagnostic Table column displays the Port number of any connected radio or MNIS, including the Master if in **Remote Mode**.

Note

- When connected in **Local Mode**, only the IP address will be shown. This IP address is the Radio IP address. Port number will display N/A.

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Radio ID

Description

This Diagnostic Table column displays the identity (ID) of any connected radio or MNIS.

Radio Name

Description

This Diagnostic Table column displays the name of any connected radio.

Service

Description

This Diagnostic Table column displays the Peer to Peer Protocol (P2P) peer service type of any connected radio.

Option	Functionality
Peer	One of the entities connected to the IP system.
Master	The radio is designated as the Master.
MNIS	The connected peer is MNIS.

Note

- When connected in **Local Mode**, Service will display N/A.

Voting Type (Diagnostic Table View)

Description

This feature displays the voting type for any connected Voter or Satellite Receiver. This feature allows user to filter the Diagnostics Table View by voting type. The available options are *N/A*, *Voter*, *and Satellite Receiver.* The table below describes the functionality of each option.

Option	Functionality
N/A	The voting type for the current repeater is not configured as voting enabled.
Voter	The voting type for the current repeater is configured as Digital Voter-enabled.
Satellite Receiver	The voting type for the current repeater is configured as Digital Satellite Receiver-enabled.

The table below describes the functionality of each Control and Button in the Voting Type filter.

Control and Button	Functionality
Tree View	List all available Voting Type for the current system. If current system not has any repeaters at the Diagnostics Table View, only *Select All* (below) node can be displayed
Select All	Selects all Voting Types. This node is checked by default, and it is always the first node at the Tree View.
OK button	Commits the filter to filter the Diagnostics Table View and closes the dialog.
Cancel button	Cancels all user changes and closes the window.

Notes

- This feature is supported for Voter and Satellite Receiver only.
- This feature is supported in the IP connection mode only.

Voter ID (Diagnostic Table View)

Description

This feature displays the Voter ID of any connected Voter or Satellite Receiver. This feature allows user to filter the diagnostic table view by voter ID.

Control and Button	Functionality
Tree View	List all available Voter ID for the current system. If current system not has any repeaters at the Diagnostics Table View, only *Select All* (below) node can be displayed
Select All	Let all Voter ID can be selected. This node is checked by default, and it is always the first node at the Tree View.
OK button	Commits the filter to filter the Diagnostics Table View and closes the dialog.
Cancel button	Cancels all user changes and closes the window.

Notes

- This feature is supported for Voter and Satellite Receiver only.
- This feature is supported in IP connection mode only.

Firmware Version

Description

This Diagnostic Table column displays the firmware version of any connected radio. The range for the firmware version is defined as a variable length ASCII string.

Codeplug Version

Description

This Diagnostic Table column displays the codeplug version of any connected radio. Codeplug is the information stored in the radio to support radio software. Codeplug version identifies the version programmed in the radio.

State

Description

This Diagnostic Table column displays the state of any connected radio. The state can be "Enabled", "Disabled" or "Locked".

Option	Functionality
Enabled	In this state, the radio is capable of transmit, receive and repeat operations.
Disabled	In this state, the radio will not transmit, receive or repeat in either analog or digital mode. CWID is not transmitted and the disabled LED will also be lighted up. A disabled radio can still allow some controls such as reset and channel change and can be enabled back. It still responds to GPIO controls, such as channel steering and to alarms and diagnostics. If the radio was keyed up at the moment of the disable control, the call will be ended abruptly and the radio will be dekeyed immediately.
Locked	This state is entered when some major alarms occur on the radio. In this state, the radio will not transmit, receive, repeat, or respond to any controls except for diagnostics and state/alarm log retrieval.

See Also

- **Radio States** for definition of the radio states.

Knockdown

Description

This Diagnostic Table column displays the current knockdown setting of any connected radio. The setting can be either "Knockdown" or "Repeat".

Option	Functionality
Knockdown	The radio will not repeat but still can receive and transmit on wire line audio.
Repeat	Normal repeat functionality.

Notes

- This feature is supported in the IP connection mode only.
- This feature is not supported for Satellite Receiver.

Channel Name

Description

This Diagnostic Table column displays the current channel alias of any connected radio.

Channel Type

Description

This Diagnostic Table column displays the current channel signaling type of any connected radio.

Option	Functionality
Analog	Repeater is set to an Analog channel.
Digital	Repeater is set to a Digital channel.
Mixed Mode	Repeater switches between Analog and Digital modes based on the call type received from the subscriber radios. The knockdown/repeat indication in this mode is for analog calls only and digital calls can always be repeated when the repeater is not in analog mode.
Capacity Plus Voice	Repeater is set to a Capacity Plus voice channel.
Capacity Plus Data	Repeater is set to a Capacity Plus data channel.
Linked Capacity Plus Voice	Repeater is set to a Linked Capacity Plus voice channel.
Linked Capacity Plus Data	Repeater is set to a Linked Capacity Plus data channel.

IP Site Connect

Description

This Diagnostic Table column displays the slot allocation for **Remote Mode** of any connected radio. The slot allocation can be "None", "Slot 1", "Slot 2" or "Slot 1 & 2". A value of "None" indicates "Local".

Option	Functionality
None	Indicates Single-site of the current channel.
Slot 1	Indicates Slot 1 of the current channel.
Slot 2	Indicates Slot 2 of the current channel.
Slot 1 & 2	Indicates Slot 1 and 2 of the current channel.

Note

- The cell will display N/A when Channel Type value is "Analog" for the current row.

TX Power

Description

This Diagnostic Table column displays the TX Power of any connected radio. The setting can be either "High" or "Low".

Option	Functionality
High	Used when a stronger signal is needed to extend transmission distances.
Low	Used when communicating in close proximity, and to prevent transmissions into other geographical groups.

RX Alarm

Description

The alarm image in the Diagnostic Table RX Alarm column displays the RX Alarm status. The alarm can be in a detected, released or locked state. The alarm status is detected when a radio is in the Receive (RX) mode. It will go into the locked state when the **State** value in the Diagnostics Table View is "Locked".

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

TX Alarm

Description

The alarm image in the Diagnostic Table TX Alarm column displays the TX Alarm status. The alarm can be in a detected, released or locked state. The alarm status is detected when a radio is in the Transmit (TX) mode. It will go into the locked state when the **State** value in the Diagnostics Table View is "Locked".

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

Temp Alarm

Description

The alarm image in the Diagnostic Table Temp Alarm column displays the Temp Alarm status. The alarm can be in a detected or released state. The alarm status is detected when a radio is detected to be overheated.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

Fan Alarm

Description

The alarm image in the Diagnostic Table Fan Alarm column displays the Fan Alarm status. The alarm can be in a detected or released state. The alarm status is detected when fan failure is detected in a radio.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

PA Voltage Alarm

Description

The alarm image in the Diagnostic Table PA Voltage Alarm column displays the PA Voltage Major and Minor Alarm status. The alarm can be in a detected, released or not applicable state. The alarm status is detected when PA voltage failure with high, intermediate-low, or low voltage is detected in a radio. When this alarm is detected, check the Repeater Log to determine which failure has occurred. This alarm will go into the not applicable state when the connected radio is any platform other than the MTR3000 base radio/repeater.

Note

- This feature is applicable to MTR3000 base radio/repeater only.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

VSWR Alarm

Description

The alarm image in the Diagnostic Table VSWR Alarm column displays the VSWR Major and Minor Alarm status. The alarm can be in a detected, released or not applicable state. The alarm status is detected when the VSWR ratio is higher than 5:1 or between 3:1 to 5:1 in a radio. It will go into the not applicable state when the connected radio is any platform other than the MTR3000 base radio/repeater.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

TX Power Alarm

Description

The alarm image in the Diagnostic Table TX Power Alarm column displays the TX Power Alarm status. The alarm can be in a detected, released or not applicable state. The alarm status is detected when the radio detects that the actual transmit power of the radio has fallen below 50% of the configured power.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

TX Gain Alarm

Description

The alarm image in the Diagnostic Table TX Gain Alarm column displays the TX Gain Alarm status. The alarm can be in a detected, released or not applicable state. The alarm status is detected when low transmitter gain is detected in a radio. This alarm will go into the not applicable state when the connected radio is any platform other than the MTR3000 base radio/repeater.

Note

- This feature is applicable to MTR3000 base radio/repeater only.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

Backplane Supply Alarm

Description

The alarm image in the Diagnostic Table Backplane Supply Alarm column displays the Backplane Supply Alarm status. The alarm can be in a detected, released or not applicable state. The alarm status is detected when the radio detects that one or both of the backplane linear regulators are delivering potentials outside of their specified range. This alarm will go into the not applicable state when the connected radio is any platform other than the MTR3000 base radio/repeater.

Note

- This feature is applicable to MTR3000 base radio/repeater only.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

Ext. Circulator Temp Alarm

Description

The alarm image in the Diagnostic Table Ext. Circulator Temp Alarm column displays the Ext. Circulator Temp Alarm status. The alarm can be in a detected, released or not applicable state. The alarm status is detected when the radio detects that a high Voltage Standing Wave Ratio (VSWR) is present at the external double circulator tray option. This alarm will go into the not applicable state when the connected radio is any platform other than the MTR3000 base radio/repeater.

Note

- This feature is applicable to MTR3000 base radio/repeater only.

See Also

- **Alarms** for definition of the alarm status in the cell.
- **Radio Alarms** for the radio alarm classification.

Power System Alarm

Description

This is the menu that displays the Power System Alarm status (*detected*, *released*, *locked*, *not applicable*) as an image.

Notes

- This feature is not editable.
- This feature is not in the *Locked* state when State value is Locked.
- This feature must be in the *Not Applicable* state when the connected peer is a MOTOTRBO Gateway.
- This feature is only available for MOTOTRBO SLR 5000 repeaters.

Frequency Reference Alarm

Description

This is the menu that displays the Frequency Reference Alarm status (*detected*, *released*, *locked*, *not applicable*) as an image.

Notes

- This feature is not editable.
- This feature is not in the *Locked* state when State value is Locked.
- This feature must be in the *Not Applicable* state when the connected peer is a MOTOTRBO Gateway.
- This feature is only available for MOTOTRBO SLR 5000 repeaters.

Forced Rest Failure Alarm

Description

This is the menu that displays the Forced Rest Failure Alarm status (detected and released) as an image.

In a normal condition, the rest channel will rotate due to call activity. A rest channel is force-rotated if the Rest Channel Time-out-Timer (Rest Channel TOT controls the duration of the repeater staying in its Rest Channel role) expired and no call has arrived on it during the average inter-call arrival time. When the reset channel is force-rotated, the "Preference Level" of a repeater will be set to the lowest value,

and rest channel will only be allocated to the repeater when all other higher preference channels are occupied.

If the rest channel is force-rotated on a repeater excessively compared with other repeaters at the site, this alarm will be flagged. This alarm is an indication of a receive issue on the repeater (may be due to interference or hardware).

If the force rest failure alarm is generated due to interference, user can still start a call on this repeater when it is the rest channel and the interference has been removed. If any call is made successfully on this repeater, this alarm will be cleared and the "Preference Level" of this repeater will be restored to the value configured in the CPS.

Notes

- This feature is only applicable for Linked Capacity Plus and Capacity Plus system only.

Voting Details...

Description

This is the menu that displays the Voting Details View. Right click on any of the data grid in the Diagnostic Table View to launch the Voting Details View.

Notes

- This feature will only be displayed when user selects a peer that has its Voting Type set as *Voter* or *Satellite Receiver*.

Retrieve Software Alarm Data

Description

This feature allows you to retrieve the software alarm data from the repeater when you enabled the Diagnostics Logging feature. When you select this feature, RDAC retrieves the software alarm data from the repeater and store the data in a log file.

To retrieve software alarm data from the repeater, perform the following steps:

Step	Action
1	In the Diagnostics Table View, right click on any of the data grid.
2	Select "Retrieve Software Alarm Data" from the popup menu. After the process is complete, a message dialog box appears to indicate the operation results.

To clear the software alarm data from the repeater, refer to Clear Software Alarm Data.

Notes

- This feature is greyed out when the Enable Logging checkbox (refer to Diagnostics Logging) is unchecked.
- This feature is supported in the IP connection mode and Local connection mode.
- This feature is not editable.

Clear Software Alarm Data

Description

This feature allows you to clear the software alarm data from the repeater when you enabled the Diagnostics Logging feature. When you select this feature, you can clear the software alarm data in the repeater. To clear software alarm data from the repeater, perform the following steps:

Step	Action
1	In the Diagnostics Table View, right click on any of the data grid.
2	Select "Clear Software Alarm Data" from the popup menu. After the process is complete, a message dialog box appears to indicate the operation results.

To retrieve the software alarm data from the repeater, refer to Retrieve Software Alarm Data.

Notes

- This feature is greyed out when the Enable Logging checkbox (refer to Diagnostics Logging) is unchecked.
- This feature is supported in the IP connection mode and Local connection mode.
- This feature is not editable.

Software Alarm Data Log Behavior

Description

This feature stores the software alarm data in log format after you enable the Retrieve Software Alarm Data. This feature supports automatic and manual modes. In manual software alarm data log behavior mode, you use the Retrieve Software Alarm Data and Clear Software Alarm Data. In automatic software alarm data log behavior mode, RDAC retrieves the software alarm data and store the data automatically at the configured intervals. The maximum size for each software alarm data log is 10MB.

The log is located at the following path: %ProgramData%\Motorola\MOTOTRBO RDAC\Software Alarm Logs\

Notes

- The logging information is important for developers to analyze the root cause of the reported alarm.
- This feature is supported in the IP connection mode and Local connection mode.

Diagnostic View

RSSI View

Description

This is the bottom frame that displays the additional diagnostics information for the currently selected radio in the Diagnostics Table View.

Note

- This button is disabled when the current selected peer is MNIS.

RSSI 

Description

This feature displays the received signal strength indicator (RSSI) of the radio highlighted in the Diagnostics Table View when the Read RSSI button is clicked.

Note

- This feature is disabled when the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is available when the **Channel Type** value in the Diagnostics Table View is "Analog" or when the repeater is repeating Analog call in "Mixed Mode".

RSSI Slot 1 

Description

This feature displays the received signal strength indicator (RSSI) for Slot 1 of the radio highlighted in the Diagnostics Table View when the Read RSSI button is clicked.

Note

- This feature is disabled when the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is enabled when the **Channel Type** value in the Diagnostics Table View is "Digital", or when the repeater is repeating Digital call or in idle state in "Mixed Mode".

RSSI Slot 2

Description

This feature displays the received signal strength indicator (RSSI) for Slot 2 of the radio highlighted in the Diagnostics Table View when the Read RSSI button is clicked.

Note

- This feature is disabled when the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).
- This feature is enabled when the **Channel Type** value in the Diagnostics Table View is "Digital", or when the repeater is repeating Digital call or in idle state in "Mixed Mode".

Read RSSI

Description

This button allows the user to read the received signal strength indicator (RSSI) of the radio highlighted in the Diagnostics Table View into the **Slot 1 RSSI** and **Slot 2 RSSI** edit boxes if in digital mode or **RSSI** edit box if in analog mode when clicked.

Note

- This button is disabled when the currently selected radio row in the Diagnostics Table View is disabled (i.e. greyed out).

Diagnostics Name

Description

This droplist displays and allows the user to select one diagnostics name to query its value from repeater. The available choices shall be *External Battery Voltage*, *External Battery Charging Current*, *External Battery Charging Voltage*, AC *Voltage*, *DC Current*, *Modem Temperature*, *Modem Current*, *Modem Voltage*, *Exciter Current Sense*, *Control Voltage*, *PA Current 1*, *PA Current 2*, *PA Current 3*, *PA Current 4*, *PA Temperature*, *Output Power*, and *VSWR*.

Notes

- This droplist is not be editable.
- This droplist is disabled when the current selected repeater row in Diagnostics Table View is greyed out.
- This droplist is hidden when the current selected peer is not a MOTOTRBO SLR 5000 repeater.

Diagnostics Value

Description

This edit box displays the Diagnostics value of the current selected repeater.

Notes

- This droplist is not be editable.
- This droplist is disabled when the current selected repeater row in Diagnostics Table View is greyed out.
- This droplist is hidden when the current selected peer is not a MOTOTRBO SLR 5000 repeater.

Query

Description

This button allows the user to query the diagnostics value from the repeater into Diagnostics Value.

Notes

- This droplist is disabled when the current selected repeater row in Diagnostics Table View is greyed out.
- This droplist is hidden when the current selected peer is not a MOTOTRBO SLR 5000 repeater.

Voting Details View

Voting Details View

Description

Displays a list of repeaters in current voting system and voting information as a table. This application also displays the digital voting status information and controls the digital voting repeater in Voting Details dialog.

The order of display for the columns are as follows:

- **Radio ID**
- **Radio Name**
- **Voting Type**
- **Voter ID**
- **Update Rate**
- **Slot 1 Voting Status**
- **Slot 2 Voting Status**
- **Slot 1 Signal Quality**
- **Slot 2 Signal Quality**
- **Force Vote**

Notes

- Supported in IP connection mode only.
- Supported for Voter and Satellite Receiver only.
- In Single Site system, this view displays the Voter and all of its receivers.
- In IP Site system, this view displays the selected Voter and all of its receivers. Only one Voter is displayed at a time.
- In Capacity Plus system, this view displays all of the Voters and receivers in the system.
- In Linked Capacity Plus system, this view displays all of the Voters and receiver of the same site only. If there are multiple sites in the system, only one site is shown at a time.
- This feature is supported in the IP connection mode only.

Radio ID

Description

Displays the repeater ID.

Note

- This feature is supported in the IP connection mode only.

Radio Name

Description

Displays the repeater name of any connected repeater.

Note

- This feature is supported in the IP connection mode only.

Voting Type (Voting Details View)

Description

This feature displays the voting type for any connected Voter or Satellite Receiver. The available options are *N/A*, *Voter*, *and Satellite Receiver.* The table below describes the functionality of each option.

Option	Functionality
N/A	The voting type for the current repeater is not configured as voting enabled.
Voter	The voting type for the current repeater is configured as Digital Voter-enabled.
Satellite Receiver	The voting type for the current repeater is configured as Digital Satellite Receiver-enabled.

The table below describes the functionality of each Control and Button in the Voting Type filter.

Control and Button	Functionality
Tree View	List all available Voting Types for the current system. If current system does not has any repeaters at the Voting Details View, only *Select All* (below) node can be displayed
Select All	Allows all Voting Types to be selected. This node is checked by default, and it is always the first node at the Tree View.
OK button	Commits the filter to filter the Voting Details View and closes the dialog.
Cancel button	Cancels all user changes and closes the window.

Notes

- This feature is supported for Voter and Satellite Receiver only.
- This feature is supported in the IP connection mode only.

Voter ID (Voting Details View)

Description

This feature displays the Voter ID of any connected Voter or Satellite Receiver. This feature allows user to filter the current data view in the voting detail log.

Control and Button	Functionality
Tree View	List all available Voter IDs for the current system. If current system not has any repeaters at the Voting Details View, only *Select All* (below) node can be displayed
Select All	Let all Voter IDs can be selected. This node is checked by default, and it is always the first node at the Tree View.
OK button	Commits the filter to filter the Voting Details View and closes the dialog.
Cancel button	Cancels all user changes and closes the window.

Note

- This feature is supported in the IP connection mode only.

Update Rate

Description

This feature allows user to display the voting status update rate. The available options are *None*, *Normal*, and *Diagnostic*. This feature is not editable.

Notes

- This feature is supported in the IP connection mode only.

Slot 1 Voting Status

Description

Displays the voting status information for satellite receiver and the internal receiver for Slot1. For receiver, the available options are *N/A*, *Disabled*, *Synchronizing*, *Idle*, *Receiving*, and *Voted*. For Voter, the available options are *N/A*, *Idle*, *Receiving*, and *Voted*.

Notes

- The internal receiver is the receiver in the voting repeater.
- This feature is supported in the IP connection mode only.

Slot 2 Voting Status

Description

Displays the voting status information for satellite receiver and the internal receiver for Slot2. For receiver, the available options are *N/A*, *Disabled*, *Synchronizing*, *Idle*, *Receiving*, and *Voted*. For Voter, the available options are *N/A*, *Idle*, *Receiving*, and *Voted*.

Notes

- The internal receiver is the receiver in the voting repeater.
- This feature is supported in the IP connection mode only.

Slot 1 Signal Quality

Description

This feature displays the SQE for satellite receiver and the internal receiver for Slot1 SQE. Available values are *--, Bad/Rejected, Poor, Fair, Good,* and *Excellent.*

Notes

- The internal receiver is the receiver in the voting repeater.
- This feature only provides the signal quality values when the voting status of a receiver (satellite receiver or the internal receiver) is *Receiving* or *Voted.*
- This feature is supported in the IP connection mode only.

Slot 2 Signal Quality

Description

This feature displays the SQE for satellite receiver and the internal receiver for Slot2 SQE. Available values are *--, Bad/Rejected, Poor, Fair, Good,* and *Excellent.*

Notes

- The internal receiver is the receiver in the voting repeater.
- This feature only provides the signal quality values when the voting status of a receiver (satellite receiver or the internal receiver) is *Receiving* or *Voted.*
- This feature is supported in the IP connection mode only.

Force Vote

Description

Displays the force voting status for Voting Repeater or Satellite Receiver. The available options are *Enabled* and *Disabled*.

Note

- This feature is supported in the IP connection mode only.

Force Vote Control

Description

This feature allows users to change the Force Vote status. The available options are *Enabled* and *Disabled*.

Notes

- This feature is enabled only when Remote Mode is enabled.
- A message is displayed when another repeater is selected, prompting the user to write or discard changes.
- This feature is disabled when the current selected repeater is disconnected.
- This feature is supported in the IP connection mode only.

Update Rate Control

Description

This feature allows user to change the voting status update rate. The available options are *None*, *Normal*, and *Diagnostics*.

Notes

- This feature is applicable for voter only.
- A message is displayed when another repeater is selected, prompting the user to write or discard changes.
- This feature is disabled when the current selected repeater is a Satellite Receiver.
- This feature is supported in the IP connection mode only.

Log Digital Voting Status

Description

This feature allows user to turn on or turn off Digital Voting Log for all repeaters.

Note

- This feature is supported for voting repeater and satellite receiver only in IP connection mode only.

Write

Description

This button allows the user to write digital voting changes to the repeater.

Notes

- This feature is enabled only when the user has modified a value in the Force Voting Control or Update Rate Control.
- This feature is disabled when the current selected repeater is disconnected.
- This feature is supported in the IP connection mode only.

RDAC Log

Description

Clicking this RDAC Log button will display the Voting Log view.

Voting Details Log

Voting Log

Description

This feature allows user to open and display the voting log dialog for any selected Voter or Satellite Receiver.

The data grid view for the Voting Log is as follows:

- **Select Date Range**
- **Log View (Voting)**
- **Select System**
- **System ID**
- **Date Time**
- **Radio ID**
- **Voter ID**
- **Voting Type**
- **Radio Name**
- **Event Type**
- **Response**

Buttons available for this log are as follows:

- **Print**
- **Print Preview**
- **Save As**
- **E-mail**
- **Delete**
- **Close**

Notes

- This feature is supported in the IP connection mode only.
- This feature is supported for Voter and Satellite Receiver only.

Select Date Range

Description

This feature allows the user to select a date range to filter out the log entries by date when enabled (checked). Unchecking this feature causes the table to display rows in the entire date range of the source data.

To select a date range:

1. Click the Start Date box and select a date from the calendar dropdown list. Selecting a start date filters the row entries for the log list to be within the range of the start date value to the current date.
2. Click the End Date box and select a date from the calendar dropdown list. Selecting an end date filters the row entries for the log list to be within the range of the start date value to the selected end date. The minimum value selectable for this box must be no less than the current value of the Start Date. The maximum value is the current date.

Note

- This feature is supported in the IP connection mode only.

Start Date

Description

This feature allows the user to select a starting date for the date filter. The default value must be the current less one week.

Note

- Selecting a start date shall filter the row entries for the display table to be within range of the start date value to the current date.
- This feature is supported in the IP connection mode only.

End Date

Description

This feature allows the user to select an ending date for the date filter. The default value must be the current date. The minimum date range for the control shall be no less than the current value of the Start Date. The maximum range for the control shall be the current date.

Notes

- Selecting an end date shall filter the row entries for the display table to be within range of the start date value to the selected end date.
- This feature is supported in the IP connection mode only.

Log View (Voting)

Description

Allows the user to switch between Default view and Voting view. If the user selects *Default*, the RDAC log report will be displayed. If the user selects Voting, the Voting Log view will be displayed.

Select System (Voting Details Log)

Description

Allows the user to clear the system filter. Entries can be filtered by selecting a system to view only those entries associated with a particular system when enabled (checked). Unchecking this feature causes the table to display rows in the entire system range of the source data.

Note

- This feature is enabled by default if a system tab is opened when the log dialog is launched. However, when no system tabs are opened, this feature is disabled.
- This feature is supported in the IP connection mode only.

System ID

Description

Displays the system alias. For events logged in Remove mode, this field shall be prefixed with the string 'IP: '.

Note

- This featureis not editable.
- This feature is supported in the IP connection mode only.

Date
Time

Description

Displays the timestamp of the PC clock time of the log event.

Note

- This feature is supported in the IP connection mode only.

Radio ID

Description

Displays the repeater ID of the repeater associated with the logged event.

Note

- This feature is not editable.
- This feature is supported in the IP connection mode only.

Voter ID (Voting Details View)

Description

This feature displays the Voter ID of any connected Voter or Satellite Receiver. This feature allows user to filter the current data view in the voting detail log.

Control and Button	Functionality
Tree View	List all available Voter IDs for the current system. If current system not has any repeaters at the Voting Details View, only *Select All* (below) node can be displayed
Select All	Let all Voter IDs can be selected. This node is checked by default, and it is always the first node at the Tree View.
OK button	Commits the filter to filter the Voting Details View and closes the dialog.
Cancel button	Cancels all user changes and closes the window.

Note

- This feature is supported in the IP connection mode only.

Voting Type (Voting Details View)

Description

This feature displays the voting type for any connected Voter or Satellite Receiver. The available options are *N/A*, *Voter*, *and Satellite Receiver.* The table below describes the functionality of each option.

Option	Functionality
N/A	The voting type for the current repeater is not configured as voting enabled.
Voter	The voting type for the current repeater is configured as Digital Voter-enabled.
Satellite Receiver	The voting type for the current repeater is configured as Digital Satellite Receiver-enabled.

The table below describes the functionality of each Control and Button in the Voting Type filter.

Control and Button	Functionality
Tree View	List all available Voting Types for the current system. If current system does not has any repeaters at the Voting Details View, only *Select All* (below) node can be displayed
Select All	Allows all Voting Types to be selected. This node is checked by default, and it is always the first node at the Tree View.
OK button	Commits the filter to filter the Voting Details View and closes the dialog.
Cancel button	Cancels all user changes and closes the window.

Notes

- This feature is supported for Voter and Satellite Receiver only.
- This feature is supported in the IP connection mode only.

Radio Name

Description

Displays the radio name of the repeater associated with the logged event.

Notes

- This feature is not editable.
- This feature is supported in the IP connection mode only.

Event Type

Description

Displays a description of the Log entry.

Notes

- This feature is not editable.
- This feature is supported in the IP connection mode only.

Response

Description

Displays a description of the log event results.

Notes

- This feature is not editable.
- This feature is supported in the IP connection mode only.

Print

Description

This button allows the user to print the currently displayed log.

Notes

- If the report fails to be printed or encounters any errors, an error will be thrown.
- Default Internet Explorer (IE) print functionality is used.
- This feature is supported in the IP connection mode only.

Print Preview

Description

This button allows the user to preview the log before printing. Default Internet Explorer (IE) print preview window will be used.

Note

- This feature is supported in the IP connection mode only.

Save As

Description

This button allows the user to save the current report to a file in the htm, html or csv (comma separated values) format at a desired location. A dialog box appears for the user to choose a file to replace or specify a file name to save under.

Note

- This feature is supported in the IP connection mode only.

E-mail

Description

This button allows the user to e-mail the current report.

Notes

- If the browser fails to launch the email client or encounters any other errors, an error will be thrown.
- The report will be emailed as a form of an attachment. All the images will be also in a form of attachments.
- Default email client shall be used to compose and send the email.
- This feature is supported in the IP connection mode only.

Delete

Description

This button allows the user to delete log entries.

Note

- This feature is supported in the IP connection mode only.

Close

Description

This button allows the user to close the currently open log browser window when clicked.

Note

- This feature is supported in the IP connection mode only.

Troubleshooting Section

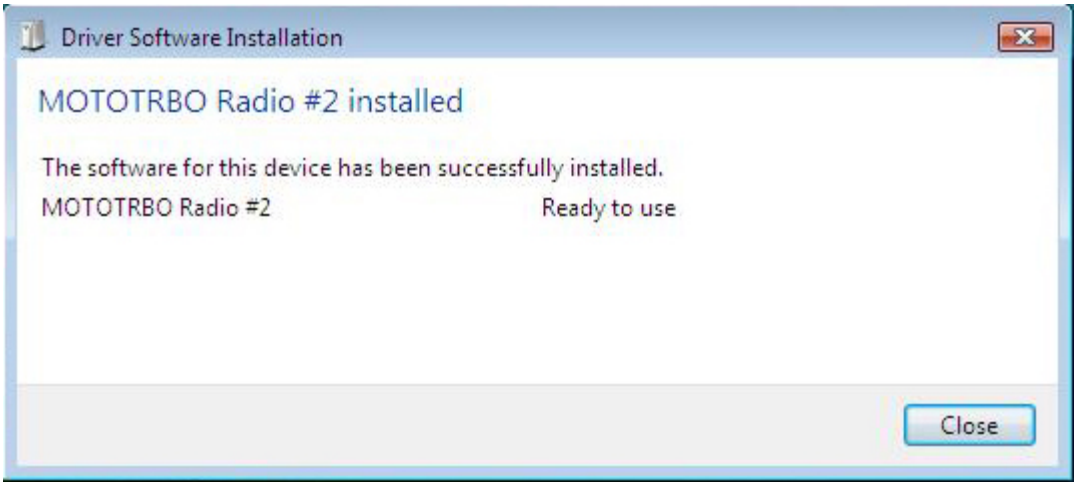
Installing the MOTOTRBO Driver

The user is prompted to install the MOTOTRBO driver when the radio is connected to the PC for the first time. This is needed to establish a connection between the radio and the PC.

On Microsoft® Windows® Vista Business/Home Premium and Microsoft® Windows® 7 Professional/Home Premium Operating System:

To install the MOTOTRBO driver :

1. Exit all the MOTOTRBO programs running on the computer.
2. Connect one end of the programming cable to the radio and the other end to the USB port of the PC. Power up the radio.
3. The **Driver Software Installation** window appears automatically. The installation is complete. Click **Close**.



4. Proceed to Setting Up the MOTOTRBO LAN properties topic to complete the driver installation.

On Microsoft® Windows® XP Home/Professional Operating System:

To install the MOTOTRBO driver :

1. Exit all the MOTOTRBO programs running on the computer.
2. Connect one end of the programming cable to the radio and the other end to the USB port of the PC. Power up the radio.
3. The **Found New Hardware Wizard** window appears automatically. Select *No, not this time*, as shown below. Click **Next**.

4. Select *Install the software automatically (Recommended)*, as shown below. Click **Next**.

5. Please wait while the computer searches and installs the driver.
6. The following screen appears if the computer cannot find the driver. Click **Browse...** to manually locate the driver. The default path for the driver is C:\Program Files\Common Files\Motorola\MOTOTRBO Driver. The path may differ if the driver is installed in a different drive. Once the driver is located, click **OK**.

7. Please wait while the computer installs the driver.
8. Once the installation completes, click **Finish** to close the wizard. Proceed to Setting Up the MOTOTRBO LAN properties topic to complete the driver installation.

On Microsoft® Windows® 2000 Professional Operating System:

To install the MOTOTRBO driver:

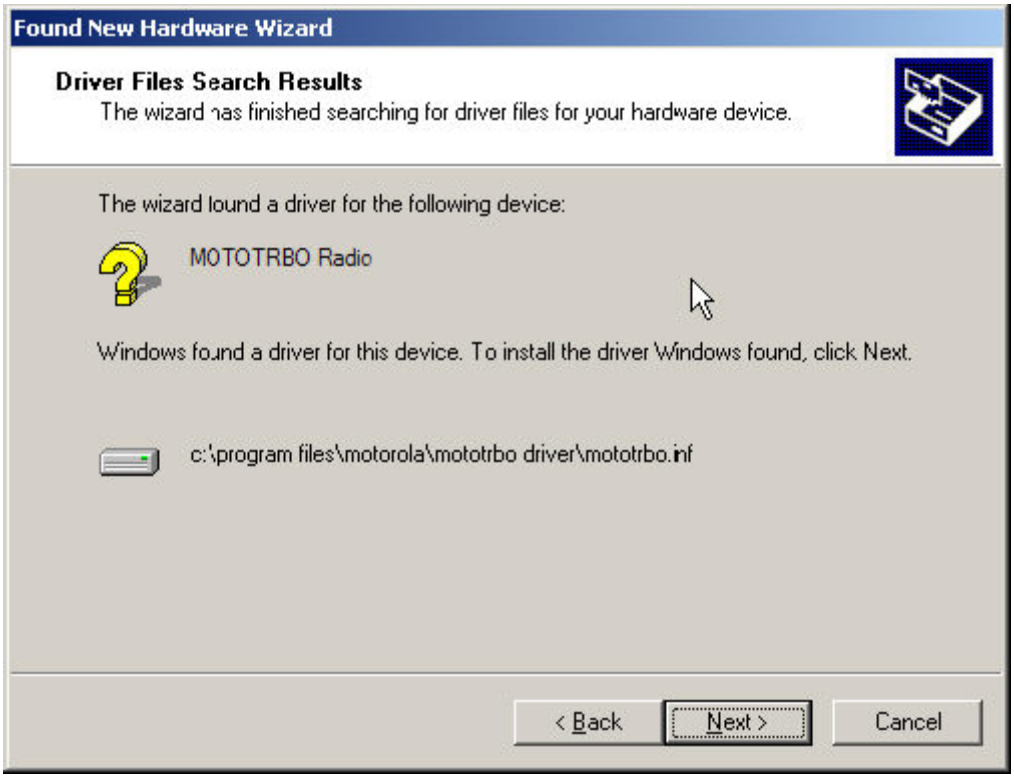
1. Exit all the MOTOTRBO programs running on the computer.

2. Connect one end of the programming cable to the radio and the other end to the USB port of the PC. Power up the radio.
3. The **Found New Hardware Wizard** window below automatically appears. Click **Next** to continue to the next window.

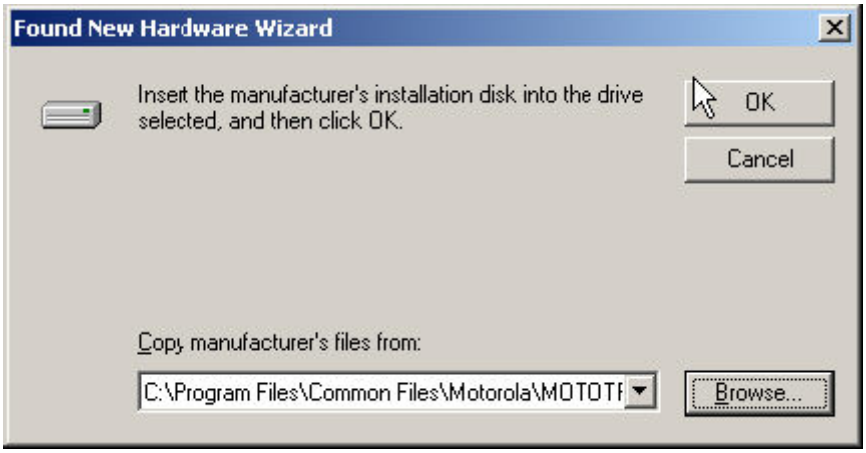
4. Select *Search for a suitable driver for my device (recommended)*, as shown below. Click **Next**.

5. The following window appears. Check the checkbox for *CD-ROM drives* and *Specify a location*. Click **Next**.

6. The window below appears when a driver is found. Click **Next** to install the driver.



7. The following screen appears if the computer cannot find the driver. Click **Browse...** to manually locate the driver. The default path for the driver is C:\Program Files\Common Files\Motorola\MOTOTRBO Driver. The path may differ if the driver is installed in a different drive. Once the driver is located, click **OK**.



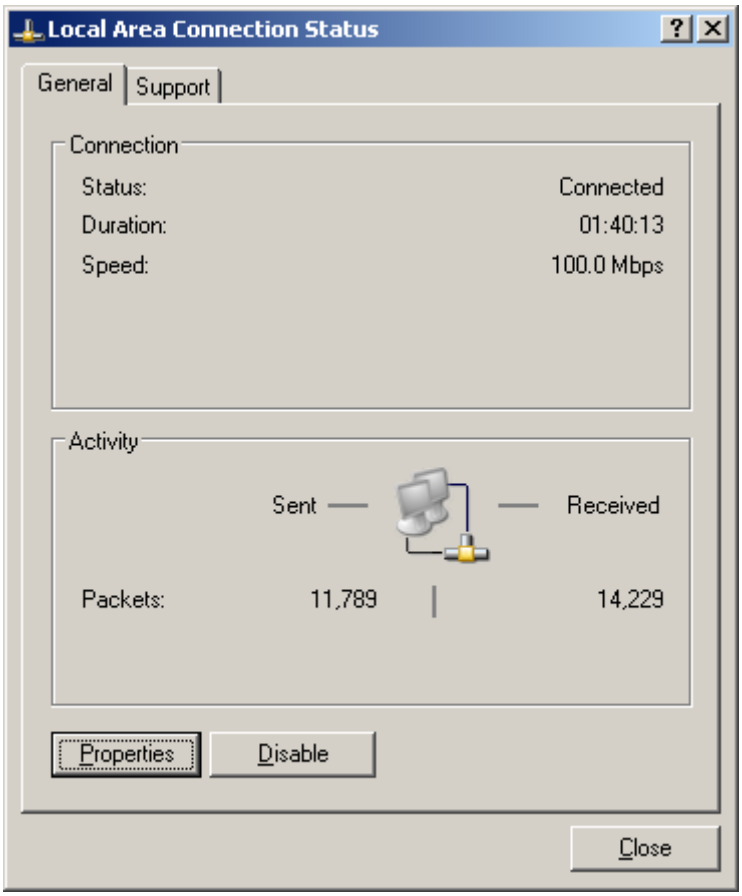
8. Please wait while the computer installs the driver.
9. Once the installation completes, click **Finish** to close the wizard. Proceed to Setting Up the MOTOTRBO LAN properties topic to complete the driver installation.

Setting Up the MOTOTRBO Local Area Network (LAN)

To set up the MOTOTRBO Local Area Connection:

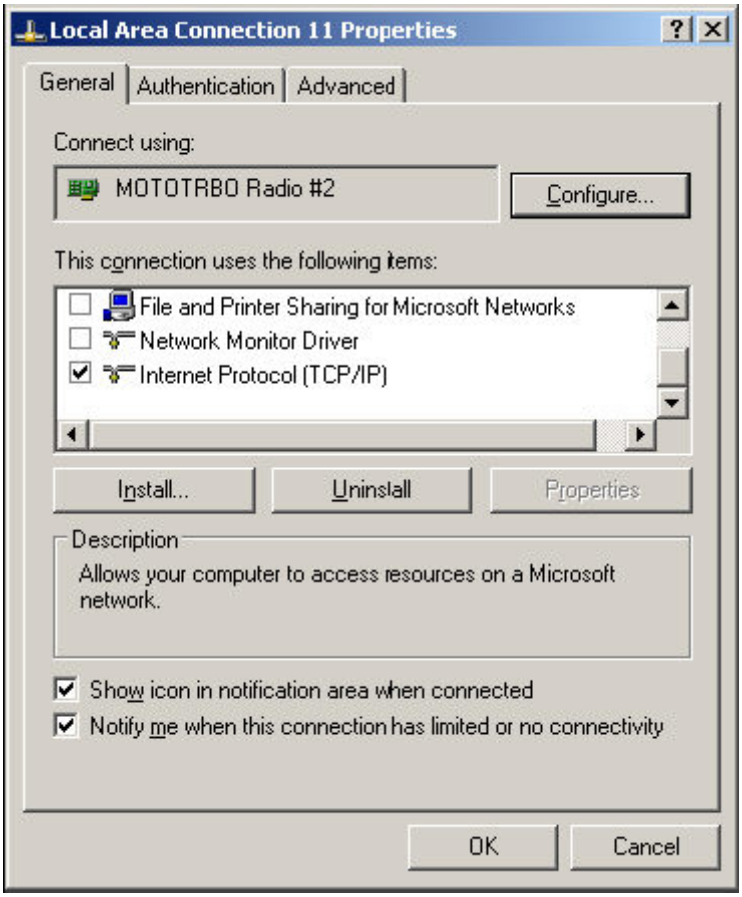
1. Click **Start**->**Settings** ->**Network Connection**, or **Start**->**Settings** ->**Control Panel**->**Network Connection**, and select **Open**.
2. Select **View** -> **Details** at the menu bar.
3. Double-click on the Network Connection named "Local Area Connection" that has the device name "MOTOTRBO Radio". The Local Area Connection box appears.

Note: The user might have more than one Local Area Connection active on their machine. Please ensure that the right one is selected.



4. Click on **Properties**.
5. Uncheck all the checkboxes EXCEPT for *Internet Protocol (TCP/IP)*. It is recommended that the user checks the checkbox for *Show icon in notification area when connected* and *Notify me when this connection has limited or no connectivity*.

Note: The *Notify me when this connection has limited or no connectivity* option may not be available on all machines.



6. Click **OK**. The setup for the MOTOTRBO Local Area Connection is complete.

Note

- The MOTOTRBO Local Area Connection needs to be set up again every time the MOTOTRBO driver installation is required.

See Also

- Installing the MOTOTRBO Driver.

Unable to Connect to the Remote System

If the user is unable to connect to the Master radio or Peer radios, check the following System configuration.

Verify Remote Network Connectivity

Check that the IP address is correctly assigned and that the PC can communicate with the Master:

a. Contact your network administrator to ensure network policies allow bi-directional UDP traffic.

b. Contact your network administrator to check for any network policies that would restrict IP addresses or MAC addresses.

c. For the purposes of verifying connectivity, ensure the ping functionality is allowed on your network. (After the system has been verified, ping functionality may be disabled if required by your network policy.)

d. Read the radio in CPS (Customer Programming Software) and verify in the **Network** settings if the Master is configured to use a DHCP or Static IP address. If the **DHCP** field is un-checked, then this indicates a Static IP address. (To determine if you should use a DHCP or a Static IP configuration, check with your network administrator).

e. Go to the CPS **Device Information** screen and note down the **MAC Address** of the Master.

If the Master is configured to use a Static IP Address

1. Ensure the Master is connected via a CAT5 ethernet cable to the router.
2. Connect to your router with a PC. Through the router interface, find the MAC Address of the Master, check the IP address.
3. Verify the static IP does not conflict with another device on the network.
4. Verify the router has been configured to forward traffic on the UDP port assigned to the Master.
5. Try to ping the Master IP Address from the PC. If the ping request times out, try resetting the router.

If the Master is configured to use a DHCP IP Address

1. Ensure the Master is connected to your router via a CAT5 ethernet cable and turned on.
2. Connect to your router with a PC. Through the router interface, find the MAC Address of the Master. Verify it has an IP Address assigned, and make a note of it.
3. Verify the router has been configured to forward traffic on the UDP port assigned to the Master.
4. Try to ping the Master IP Address from the PC. If the ping request times out, try resetting the router.

If you are able to ping the Master IP address but are still unable to connect to the system or peers in the system, continue on. If you are not able to communicate with the Master, please contact your network administrator.

Verify Remote System Configuration

a. Read all of the system radios in CPS and verify that the following fields are the same across all peers and match the Master radio where applicable.

Master IP and **Master UDP Port** – Each peer needs to have the correct **Master IP** (this field is distinct from **Radio IP**) and **Master UDP Port** assigned in order to join the system.

Authentication Key – This field should match the value in the Master and for each peer. (e.g. if its turned off in the Master, it should be turned off in all peers).

Peer Firewall Open Timer (sec) – This field is used to ensure the connection between peers is kept open through a firewall. Depending on your system, this field value may need to be decreased in order to keep the firewall open for peers to connect.

b. Check in the RDAC Application System settings that the above fields match the common values set through CPS for the peers.

c. Check that each peer in the system has a *unique* **Radio ID** assigned.

d. Check in the RDAC Application System settings to ensure the **RDAC ID** does not conflict with any **Radio ID** values of peers in the System.

e. If more than one peer is connected to the same router, and another peer is outside the router, that router must support hairpinning. Verify with your network administrator that the router in question supports this feature.

f. Ensure any updated system configuration values are written to the radios, and the radios are re-connected to the system. Attempt to re-connect to the system in the RDAC application.

g. If you are still unable to connect to the system, have your network administrator contact Motorola Customer Support.

Glossary

A

Analog Signal: An RF signal that has a continuous nature rather than a pulsed or discrete nature.

ARI: Analog Repeat Interface, introduced in release 1.2.

C

Channel: A group of characteristics such as transmit/ receive frequency pairs, radio parameters, and encryption encoding.

Codeplug: Stores information in the radio, i.e tuning information, frequencies, etc. This information can be read, edited and written back to the codeplug using the CPS or Tuning application software. Codeplug files, once read can be archived in the computer.

Controller: A unique functional entity in a IP Site connection system. It is part of one of the radios. The Controller is needed as the central point for a Radio/RDAC-IP PC to find the other Radios/RDAC-IP PC in the same IP connection system.

CPS: Customer Programming Software. Enables a dealer to program the device's features according to the customer requirements.

CWID: Continuous Wave Identification. Also known as Base Station Interface (BSI).

D

Detected: An alarm is active.

Digital Signal: An RF signal that has a pulsed, or discrete nature, rather than a continuous nature.

E

EEPROM: Electrically Erasable Programmable Read-Only Memory.

F

Firewall: A set of related programs, located at a network gateway server, that protects the resources of a private network from users from other networks. The program inspects network traffic passing through it, and denies or permits passage based on a set of rules.

Firmware: Software that controls the internal hardware components of the device.

G

GPIO: General Programmable Input Output.

GUI: Graphical User Interface.

I

ID: Identity.

IP: Internet Protocol - data-oriented protocol used for communicating data across a packet-switched network. IP enables communication between devices via unique global addressing.

IP Site Connect System: A system connecting multiple radios in different geo location through IP network so that voice/data call can be made across multiple site. RDAC is also supported through this system.

K

Knockdown: In analog mode, radio knockdown means the radio will not repeat but still can receive and transmit on wire line audio. For digital mode, this control works the same as radio disable. The internal repeat path of the radio is disabled for as long as the radio is in this knockdown mode.

L

LAN: Local Area Network.

Locked State: The radio will not do repeating function in either analog or digital mode. It will also not respond for radio controls.

M

Major Alarms: Hardware failures that prevent the radio from performing normal repeat function in most cases.

Minor Alarms: Hardware failures that do not prevent the radio from performing normal repeat function.

MNIS: MOTOTRBO Network Interface Service

O

OTA: Over the Air.

P

P2P: Peer To Peer.

PA: Power Amplifier.

PC: Personal Computer.

Peer: A functional entity that is connected to a IP Site connection system. The entity can be a radio or RDAC IP application.

Personality: A set of unique features specific to a radio or channel.

Preprogrammed: A feature that has been assigned in advance by a qualified technician.

Programmable: A radio control that can have a radio feature assigned to it.

R

Radio Frequency (RF): The part of the general frequency spectrum between the audio and infrared light regions (about 10kHz to10,000,000MHz).

RDAC: Repeater Diagnostics and Control - a PC application utilized by Motorola licensed dealers to monitor and control MOTOTRBO radio products.

Released: An alarm is inactive.

Repeater Mode: A conventional radio feature, where the user talks through a receive/transmit facility (repeater), that retransmits received signals in order to improve communications range and coverage.

RSSI: Received Signal Strength Indication.

RX: Receive.

S

Single-Site: Also known as Local mode.

Standby: An operating condition whereby the radio’s speaker is muted but still continues to receive data.

SUID: Subscriber Unit ID.

T

TX: Transmit.

U

UDP: User Datagram Protocol.

USB: Universal Serial Bus.

V

VSWR: Voltage Standing Wave Ratio.