





TRBOnet Agent User Guide

Version 6.2

Last revised on 25 January 2024

USA Office

Neocom Software 150 South Pine Island Rd., Suite 300 Plantation, FL 33324, USA

Sales

EMEA: +44 203 608 0598 Americas: +1 872 222 8726 APAC: +61 28 607 8325 www.trbonet.com info@trbonet.com

© Neocom Software Corporation

Contents

1 About TRBOnet Software			
	1.1	TRBOnet Server and Console	
	1.2	TRBOnet Agent 2	
	1.3	Network Requirements3	
2	Instal	lation4	
	2.1	Installing TRBOnet Agent	
3	TRBO	net Agent configuration5	
	3.1	License Manager	
	3.2	TRBOnet Agent Service 6	
	3.3	Network Parameters	
	3.4	Redundancy	
	3.5	Remote Access Restriction9	
	3.6	Advanced Settings	
	3.7	Radio Systems	
4	TRBO	net Server configuration61	
	4.1	Adding a Remote Agent61	
	4.2	Redundancy	



1 About TRBOnet Software

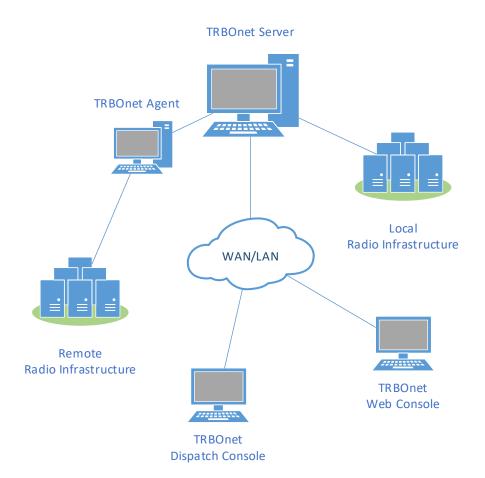
1.1 TRBOnet Server and Console

The TRBOnet software is designed as a client-server architecture, where **TRBOnet Server** is PC-based and runs as a Windows service on a network computer, stores data in an MS SQL database, and allows client connections from Web Consoles, Dispatch Consoles, and Mobile Clients. The TRBOnet service can be located on a dedicated remote PC, a local PC (along with the Dispatch Console), or on a virtual machine.

TRBOnet Dispatch Console is a PC-based voice dispatch and data application for MOTOTRBO professional digital two-way radio systems.

1.2 TRBOnet Agent

Software agents, such as **TRBOnet Agent**, can be connected to TRBOnet Server providing additional voice and data communications paths to and from remote sites. Such configurations can be used when radio equipment can't be connected directly to TRBOnet Server due to IP network limitations (for details, see MOTOTRBO System Planner).





1.3 Network Requirements

- **Delay/Latency** The delay should be less than 2900ms.
- **Jitter** The jitter should be less than 50ms.
- **Packet Loss** The packet loss should be less than 2%.



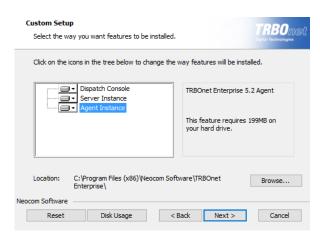
2 Installation

2.1 Installing TRBOnet Agent

- Contact **Neocom Software** to obtain the latest installation package of the TRBOnet Enterprise software, unzip, and run the setup file as a local administrator.
- When the **TRBOnet Enterprise Setup** wizard appears, click **Next**.
- On the **End User License Agreement** page, accept the terms of the license, and then click **Next**.

Choose Setup 1 Choose the set	Type tup type that best suits your needs TRBO Dot Event Type Up type that best suits your needs
	TRBOnet Dispatch Console This is a dispatcher computer and only Dispatch Console must be installed
	TRBOnet Server and Dispatch Console This is a Server computer and you need to install Server software and Dispatch Console
	Custom Allows users to choose which program features will be installed and where they will be installed.
Neocom Software –	< Back Next > Cancel

• On the Choose Setup Type page, click Custom.



- On the **Choose Setup Type** page, select either Server Instance and Agent Instance or only Agent Instance.
- Accept the defaults for the rest of the setup and complete the installation.

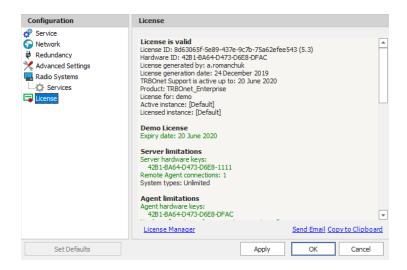


3 TRBOnet Agent configuration

To start TRBOnet Agent, click the corresponding shortcut on the desktop, or click **Start > All Programs > Neocom Software > TRBOnet Agent x.x**

3.1 License Manager

• In the **Configuration** pane on the left, select **License**. In the right pane, you can see the text of your current license.



To apply the new license:

- 1. Click the **License Manager** link in the right pane. The **License Manager** wizard appears.
- 2. Click Next.
- 3. Click the ellipsis (...) button on the right-hand side of the License file box. The **Open** dialog box appears.
- 4. Locate the license file you received from our technical support and click **Open**.

The full path of the license file appears in the **License file** box.

- 5. Click **Next**.
- 6. Click **Finish** to close the wizard.
- 7. Click **Apply** and then confirm to restart TRBOnet Agent.
 - Note: To use a single license for multiple TRBOnet software instances, you need **TRBOnet License Server**. For detailed instructions on how to use TRBOnet License Server, refer to *TRBOnet License Server Configuration Guide*.



3.2 TRBOnet Agent Service

• In the **Configuration** pane, select **Service**.

Configuration	Service
Service Network Redundancy Redundancy Redundancy Radio Systems Radio Systems License	The TRBOnet Agent service is not installed. It is recommended to run TRBOnet Agent as a Windows service: it will start automatically after a reboot and run even when no user is logged on. Click the Install Service button below to install the TRBOnet Agent service. Service logon type:
	Password:
	Install Service
	Agent password: Set password Turn off password
	Niew Log Entries Export Configuration Import Configuration
Set Defaults	Apply OK Cancel

- In the **Service** pane, specify the following service-related parameters:
 - Choose the required logon type:

Logon as Local System

Choose this option to use an account with local system administrator privileges to run the service as a Windows service (Recommended);

Logon as User

Choose this option to use a different account to run the service as a Windows service. This account must allow the user to run services in Windows, have read and write access to the **Neocom Software** folder and subfolders in the "**%ProgramFiles%**" (or,

"**%ProgramFiles(x86)%**" for 64-bit OS) and "**%ProgramData%**" folders. For example, using such an account may be required in the following cases:

- An Active Directory domain network is used, and the current Windows user is not allowed to use a Local System account to launch services on the local PC due to domain policy restrictions.
- 2. MS SQL Server is installed on a remote PC, and **Windows Authentication** has been selected to connect to the database.
- Click Install Service.
- Click the Start Service link that appears in the right pane.
- Agent password

Click the **Set password** link and enter a password if you want to password-protect the agent configuration. Once the configuration password is set, the user will be prompted to enter it when opening and exiting the TRBOnet Agent application.

To remove the password, click the **Turn off password** link.



3.3 Network Parameters

• In the **Configuration** pane, select **Network**.

Configuration	Network	
Service Network Redundancy Remote Access Restriction Advanced Settings Radio Systems Services License	Network interface: Command port: Watch PM port: First VoIP port:	System Default * ¢ 4020 4016 4022 even server and dients
Set Defaults		Apply OK Cancel

• In the **Network** pane, specify the following network-related parameters:

Network interface

From the drop-down list, select the network interface that will be used to communicate between the Agent and Server. Click do refresh the list of network interfaces available on your PC.

Note: If both TRBOnet Server and Agent are installed on the same PC, then select **127.0.0.1** (Loopback Pseudo-Interface).

Command port

Enter the port number to be used by a Server to connect to the Agent (4020, by default).

Watch PM port

Enter the port number that will be used by Watch Performance Monitor to monitor the computer where TRBOnet Agent is running.

First VoIP port

Enter the number of the first VoIP port for audio communications between the Agent and Server (4022, by default). Each additional Server will establish a connection on the next available port number.

Encrypt data traffic between server and clients

Select this option to guarantee the security of data transfer between TRBOnet Server and TRBOnet Agent. It is recommended that this option be used when a connection between system components is established via the Internet or other public networks.



3.4 Redundancy

TRBOnet Agent supports a redundant (secondary/backup) configuration which allows automatic switching from the primary to the redundant (secondary/backup) agent in case of failure of the primary agent. Dispatch Console operation will not be interrupted.

• In the **Configuration** pane, select **Redundancy**.

Configuration	Redundancy	
	Redundant agent mode Redundancy Mode: Primary agents:	•
Radio Systems	IP Address	Port
Services	1 🗸 10.10.235.162	4020
	Add Edit Delete	Test 🔺 🔻
Set Defaults	Apply	OK Cancel

• In the **Redundancy** pane, select the **Redundant server mode** option.

• Redundancy Mode

Select a mode for the redundant agent from the drop-down list.

• To add a primary agent, click **Add**.

Agent Propertie	5	×
IP Address:	10.10.235.162	
Port:	4020	
ОК	Cancel	

• IP Address

Type the IP address of the primary agent.

• Port

Enter the same port number as specified for the Command port.



3.5 Remote Access Restriction

This section describes how to restrict remote access to TRBOnet Agent.

• In the **Configuration** pane, select **Remote Access Restriction**.

Configuration	Remote Access Restriction
 	Use restricted access Allowed connections:
Remote Access Restriction	IP Address Password
Radio Systems	✓ 10.10.201.99
Services	✓ 10.10.109.203
License	Add Delete
Set Defaults	Apply OK Cancel

- In the **Remote Access Restriction** pane, select the **Use restricted access** check box and add allowed connections to the table below:
 - Click the **Add** button.
 - IP Address

Enter the IP address of the PC that will be allowed to connect.

Password

Enter the password that will be used for a connection from this IP address.

Note: If the **Use restricted access** check box is selected and the list of allowed connections is empty or no connections are selected in the list, the TRBOnet Agent won't be able to be remotely accessed at all.



3.6 Advanced Settings

• In the **Configuration** pane, select **Advanced Settings**.

Configuration	Advanced Settings		
🖗 Service			
Network	Language:	English	.
🛱 Redundancy	Logging level:	Normal	
🗶 Advanced Settings			
🖶 Radio Systems			
Services			
⋥ License			
Set Defaults		Apply OK	Cancel

- In the **Advanced Settings** pane, specify the following advanced parameters:
 - Language

From the drop-down list, select the interface language for TRBOnet Agent.

Logging level

From the drop-down list, select the logging level that determines the granularity of log messages in the System Log. The choices are: None, Low, Normal, and High.

Note: This information is used by technical support for troubleshooting purposes, so it is recommended that this value be kept unchanged (Normal).

3.7 Radio Systems

- In the **Configuration** pane, select **Radio Systems**.
- In the **Radio Systems** pane, select or make sure **Enable Radio Systems** is selected.
- In the Radio Systems pane, specify the following parameters:
 - CAI Network

The CAI (Common Air Interface) Network is a value that is combined with the Radio ID to produce the individual radio's air interface network IP address. All radios must use the same CAI Network ID to be able to exchange data. It is recommended that the default value of 12 is used.



CAI Group Network

The CAI Group Network is a value that is combined with the Group ID to produce the group's air interface network IP address. The CAI Group Network ID forms the first or most significant byte of each group's network IP address. All radios must use the same CAI Group Network ID to be able to exchange data (225, by default).

Note: The values of these two parameters must match those configured for the radio units via the MOTOTRBO CPS.

Configuration	Radio Systems
Service Network	☑ Enable Radio Systems
Redundancy Remote Access Restriction	CAI Network:
Advanced Settings	CAI Group Network: 225 ‡
Radio Systems	
Repeater #1	Registered Radio Systems
Advanced Settings	Name Address Radio 1D ✓ Repeater #1 10.12.97.25 64250
	Control Station #1 192.168.10.1 64250
Slot #1	TRBOnet Swift Agent #1 10.10.101.100 64250
Local Slots	
L Control Station #1	
Advanced Settings	
TRBOnet Swift Agent #1	
	Add Delete Test
Set Defaults	Add MOTOTRBO System
Set Derauts	Add Capacity Max
	🚽 Add DIMETRA Express
	🖶 Add TRBOnet Swift Agent
	📲 Add Control Station
	🖶 Add ECOS-D Repeater
	🖶 Add KAIROS Repeater 2
	Add WAVE OnCloud Gateway
	Add ED137 Station
	Add Zenitel Station
	Add Analog Station
	Add Analog Station Add Friendly FS-1000 Station
	•
	Add XRT-9000 Controller
	Add WAVE 5000 Controller

All radio system elements based on MOTOTRBO services are represented in the **Registered Radio Systems** table, including their type (Control Station, Repeater, and others), IP Address, and Radio ID (1):

• To add an element to the system, click **Add** and select the element type from the drop-down menu (2).

3.7.1 Services

- In the Configuration pane, under Radio Systems, select Services:
- In the **Services** pane, specify the following Radio System Services-related parameters:



Automatic Registration Service (ARS)

Select this option to enable the ARS service for the radios. When the radio powers up, it automatically registers with the server. This feature is used with data applications, that is, any data traffic on this channel is associated with an application server such as MOTOTRBO Text Messaging or MOTOTRBO Location Services.

• Port

Enter the local port number for the ARS service (4005, by default).

Telemetry service (TLM)

Select this option to enable the Telemetry service, which is the wireless transmission and reception of measured quantities for remotely monitoring environmental conditions or equipment parameters.

• Port

Enter the local port number for the Telemetry service (4008, by default).

Text Messaging service (TMS)

Select this option to enable the Text Messaging service which is used to exchange text messages between the radios and the dispatchers.

• Port

Enter the local port number for the Text Messaging service (4007, by default).

Location service (GPS / Indoor)

Select this option to enable the Location service. The radio can send its coordinates when it is in Global Positioning or iBeacon coverage area.

• Port

This is the local port number for the Location service (4001), which cannot be modified.

Job Ticketing service (JTS)

Select this option to enable the Job Ticketing service.

• Port

This is the local port number for the Job Ticketing service (4013, by default).

Text Messaging service DMR

Select this option to enable the DMR-based Text Messaging service.

• Port

Enter the local port number for the DMR-based Text Messaging service (5016, by default).

Indoor service (K-TERM)

Select this option to enable the Indoor Location service.

• Port

Enter the local port number for the Indoor service (3022, by default).



Indoor LAN Service (K-TERM)

Select this option to enable the Indoor LAN service.

• Port

Enter the local port number for the Indoor LAN service (3001, by default).

Tallysman Sprite service

Select this option to enable the service for autonomous event and aggregated event reporting to provide significant reduction in GPS data overhead.

• Port

Enter the local port number for the Tallysman Sprite service (4004, by default).

FS 5000 location service (GPS)

Select this option to enable the FS 5000 location service, which is a service for transmitting GPS data packages. This service uses FS 5000 Option Board.

• Port

Enter the local port number for the FS 5000 location service (4004, by default).

Swift.Tracker v.1 service

Select this option to enable the service to transmit coordinates and data packages via a radio channel using the Swift.Tracker TR001 device.

• Port

Enter the local port number for the Swift.Tracker v.1 service (4004, by default).

Swift.Tracker v.1 service (GSM channel)

Select this option to enable the service to transmit coordinates and data packages via a radio channel and a reserved GSM channel using the Swift.Tracker TR001 device.

• Port

Enter the local port number for the Swift.Tracker v.1 service with a GSM channel (4080, by default).

Swift.Tracker v.2 service

Select this option to enable the service to transmit coordinates and data packages via a radio channel using the Swift.Tracker TR001 device (version 2).

• Port

Enter the local port number for the Swift.Tracker v.2 service (4104, by default).



Swift.Tracker v.2 service (GSM channel)

Select this option to enable the service to transmit coordinates and data packages via a radio channel and a reserved GSM channel using the Swift.Tracker TR001 device (version 2).

• Port

Enter the local port number for the GSM channel of the Swift.Tracker v.2 service with a GSM channel (4180, by default).

Extended Text Messaging service

Select this option to enable the Extended Text Messaging service to include sending detailed preconfigured templates with the help of TRBOnet Dispatch Software.

• Port

Enter the local port number for the Extended Text Messaging service (4010, by default).

Extended Data service

Select this option to enable the Extended Data service that will be used for communication with TRBOnet Communicator.

• Port

Enter the local port number for the Extended Data service (4106, by default).

Telemetry service Novox

Select this option to enable the Telemetry service based on NOVOX devices.

• Requests port

Enter the local port number to listen for requests (8090, by default).

• Events port

Enter the local port number to listen for events (8091, by default).

G4S RS232 service

Select this option to enable the custom developed G4S RS232 service.

• Port

Enter the local port number for the G4S RS232 service (4004, by default).

Zebra printer service

Select this option to enable the service for printing Job Tickets. A Zebra printer is connected to a radio via Bluetooth. The radios should be Bluetooth-enabled.

• Port

Enter the local port number for Zebra printer service (4072, by default).



• Forward Data service

Select this option to enable the Forward Data service. This feature is used to forward "raw data" via the COM port from one device to another.

• Port

Enter the local port number for Forward Data service (4011, by default).

3.7.2 Adding a MOTOTRBO Repeater

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add MOTOTRBO System.

Network Image: CAI Network: 12 Remote Access Restriction CAI Network: 12 Advanced Settings CAI Group Network: 225 Radio Systems Image: Service Add MOTOTRBO System	Configuration	ו	Radio System	ns		
Remote Access Restriction CAI Network: 12 12 Advanced Settings CAI Group Network: 225 1 Radio Systems Add MOTOTRBO System iio Systems 225 1 Service Add Capacity MAX Address Radio ID Add Capacity MAX Add Control Station Add RBOnet Swift Agent Add RBOnet Swift Agent Add XRC-9000 Controller Add XRC-9000 Controller Add XRC-9000 Controller Add WAVE 5000 Controller Add WAVE 5000 Controller Test Add WAVE 5000 Controller Add WAVE 0nCloud Gateway Add Apalog Station Add ZENITEL Station Add ZENITEL Station Remove All	Network	,	🗸 Enable Ra	adio Systems		
Radio Systems Add MOTOTRBO System dio Systems Service Add Capacity MAX Address Add DIMETRA Express Add Control Station Add TR8Onet Swift Agent Add Friendly FS-1000 Station Add XRC-9000 Controller Add XRC-9000 Controller Add SELEX Repeater Add WAVE 5000 Controller Add WAVE 5000 Controller Add Analog Station Add Analog Station Add ED137 Station Add ZENITEL Station Remove All Kernove All	<u> </u>		CAI Network	a	12	
Service Add MOTOTRBO System iio Systems License Add Capacity MAX Address Radio ID Add Capacity MAX Address Radio ID Add Control Station Add Control Station Add TRBOnet Swift Agent Add Triendly FS-1000 Station Add XRC-9000 Controller Add XRC-9000 Controller Add XRT-9000 Controller Add XROS Repeater Delete Test Add WAVE 5000 Controller Add WAVE 5000 Controller Add WAVE 5000 Controller Add Analog Station Add Analog Station Add ZENITEL Station Add ZENITEL Station Add ZENITEL Station Remove All			CAI Group N	letwork:	225	
Add Capacity MAX Address Radio ID Add Charactly MAX Address Radio ID Add DIMETRA Express Add Control Station Add TRBOnet Swift Agent Add TRBOnet Swift Agent Add TRBOnet Swift Agent Add TRBOnet Swift Agent Add XRC-9000 Controller Add XRC-9000 Controller Add XRC-9000 Controller Add XRCS Repeater Add VAVE 5000 Controller Add VAVE 5000 Controller Add WAVE			BO System	dio Systems		
 Add Control Station Add TRBOnet Swift Agent Add TRBOnet Swift Agent Add TRBOnet Swift Agent Add TRBOnet Swift Agent Add XRC-9000 Controller Add XRC-9000 Controller Add XRC-9000 Controller Add XRC-9000 Controller Add WAVE 5000 Controller Add WAVE 0nCloud Gateway Add Analog Station Add ZENITEL Station Add ZENITEL Station Remove All 	License	-				Radio ID
 Add TRBOnet Swift Agent Add Triendly FS-1000 Station Add XRC-9000 Controller Add XRT-9000 Controller Add XRC-9000 Controller Add SELEX Repeater Add WAVE 5000 Controller Add WAVE 0nCloud Gateway Add Analog Station Add ZENITEL Station Add ZENITEL Station Kernove All 		Add DIMETRA	Express			_
Add Friendly FS-1000 Station Add XRC-9000 Controller Add XRT-9000 Controller Add XRT-9000 Controller Add XRC Sepeater Add WAVE 5000 Controller Add WAVE 0nCloud Gateway Add Analog Station Add ZENITEL Station Add ZENITEL Station Remove All		🖶 Add Control S	tation			
 Add XRC-9000 Controller Add XRT-9000 Controller Add XRT-9000 Controller Add SELEX Repeater Add KAIROS Repeater Add WAVE 5000 Controller Add WAVE 5000 Controller Add WAVE 0nCloud Gateway Add Analog Station Add ZENITEL Station Add ZENITEL Station Remove All 		🖶 Add TRBOnet	Swift Agent			
Image: Set D Add XRT-9000 Controller Image: Add SELEX Repeater Add SELEX Repeater Image: Add XROS Repeater Delete Image: Add WAVE 5000 Controller Image: Add WAVE 0nCloud Gateway Image: Add WAVE 0nCloud Gateway Add Analog Station Image: Add ED137 Station Add ZENITEL Station Image: Add ZENITEL Station Image: Add ZENITEL Station Image: Remove All Image: Add Zenite Station		🛖 Add Friendly F	S-1000 Station			
Set 0 Add SELEX Repeater Delete Test Image: Set 0 Add WAVE 5000 Controller Add WAVE 5000 Controller Add WAVE 5000 Controller Image: Add WAVE 0nCloud Gateway Add Analog Station Add ED137 Station Image: Add ZENITEL Station Add ZENITEL Station Image: Weine Water Remove All		👍 Add XRC-9000	Controller			
 Add KAIROS Repeater Add WAVE 5000 Controller Add WAVE OnCloud Gateway Add Analog Station Add ED137 Station Add ZENITEL Station Remove All 		🖶 Add XRT-9000	Controller			
Add WAVE 5000 Controller Add WAVE 000 Controller Add WAVE 0nCloud Gateway Add Analog Station Add ED137 Station Add ZENITEL Station Remove All		🖶 🛛 Add SELEX Rep	peater			
Set D Add WAVE OnCloud Gateway Apply OK Cancel Image: Add Analog Station Add ED137 Station Add ZENITEL Station Image: Add ZENITEL Station Image: Add ZENITEL Station Remove All Image: Add ZENITEL Station Image: Add ZENITEL Station		Add KAIROS R	epeater	Delete		Test
Add WAVE OnCloud Gateway Add Analog Station Add ED137 Station Add ZENITEL Station Remove All	Set D	Add WAVE 500	00 Controller		Apply OK	Cancel
 Add ED137 Station Add ZENITEL Station Remove All 	Jerb	🖶 Add WAVE On	Cloud Gateway			Cancer
Add ZENITEL Station Remove All		🛉 🛛 Add Analog St	ation			
× Remove All		🛉 Add ED137 Sta	tion			
		Add ZENITEL S	itation			
Set Defaults		🗙 Remove All				
		Set Defaults				

• In the **Repeater** pane, specify the connection parameters. To ensure your connection parameters match the actual configuration of your radio network, you may need to use Motorola CPS or Config Advisor tools to determine the values. Contact your radio network administrator, if you do not have this information.



Configuration	Repeater #1					
	System Name: TRBOnet Peer ID: TRBOnet Radio ID: TRBOnet Local Port: Master Repeater Comm IP Address: UDP Port: Authentication Key: System Type: System Type: System Identifier: USE NAI Voice USE NAI Voice USE NAI Data (MNIS an USE RCM to monitor radi	10. 10. 102. 131 50000 IP Site Connect Department 1 d DDMS)	* * *	Test		
Set Defaults		Apply		ОК	Cancel	1

System Name

Enter a name for the repeater. This name will be displayed in the Dispatch Console.

TRBOnet Peer ID

Enter a Peer ID for TRBOnet Agent. The Peer ID must be unique among the repeaters in the radio system.

Note: Motorola recommends that this value be less than 200.

TRBOnet Radio ID

Enter the Radio ID, which is a gateway for voice and data. The Radio ID must be unique in the radio system (for Capacity Plus and Linked Capacity Plus systems, the maximum value is 65535).

TRBOnet Local Port

Enter the local port number that will be used by TRBOnet Agent to establish a connection to the repeater. Use unique port numbers for each repeater connection if there are several repeaters connected.

Master Repeater Connection Information

IP Address

Enter the Ethernet IP address of the master repeater.

Note: This value is programmed for a repeater via MOTOTRBO CPS, in *Link Establishment>Master IP*.

UDP Port

Enter the UDP port number of the master repeater.

Note: This value is programmed for a repeater via MOTOTRBO CPS, in *Link Establishment>Master UDP Port*.

Authentication Key

Enter the repeater's authentication key (if any).



Note: This value is programmed for a repeater via MOTOTRBO CPS, in *Link Establishment>Authentication Key*.

System Type

From the drop-down list, select the system type.

Test

Click this button to check the connection to your master repeater. If the test is successful, you'll see the information on the repeater you are connected to, such as the serial number, firmware version, and other relevant information.

System Identifier

Enter the system identifier if a Capacity Plus or Linked Capacity Plus system is used with one or more control stations. Use the same system identifier as you have specified for the corresponding control stations.

Use NAI Voice

Select this option to connect to the repeater via NAI (Network Application Interface) for Voice transfer.

Use NAI Data (MNIS and DDMS)

Select this option to connect to the repeater via NAI (Network Application Interface) for Data transfer.

• MNIS

MOTOTRBO Network Interface Service is a Windows application which acts as a data gateway between the data applications and the radio system. Data messages are routed through the MNIS.

• DDMS

Device Discovery and Mobility Service is a service for tracking the presence of radio subscribers in the radio network and transmitting the data to the server.

3.7.2.1 Advanced Settings

• In the **Configuration** pane, under the corresponding **Repeater**, select **Advanced settings**.



Configuration	Advanced Settings			
Service Network Remote Access Restriction Remote Access Restriction Radio Systems Radio Systems Repeater #1 Repeater #1 Repeater #1 Repeater #1 Stot #1	Advanced Settings Call Hangtime (ms): Group Call: Private Call: Emergency Call: TX Preamble: TX Timeout: Phone System:	3000 4000 4000 120 60 Motorola Phone Syst	seconds em	•
Set Defaults	TX Interrupt Mode:	MSI Proprietary	OK Can	*
Set Defaults		Apply	OK Can	cel

• In the **Advanced Settings** pane, specify the following repeater-related advanced settings:

Call Hangtime (ms):

Group Call

This value sets the duration the repeater reserves the channel after the end of a group call transmission. During this time, only members of the group that the channel is reserved for can transmit.

Private Call

This value sets the duration a radio keeps the private call setup after a user releases the PTT button. This is to avoid setting up the call again each time a user presses the PTT button to transmit. During this time, other radios can still transmit since the channel is essentially idle. After the hang timer expires, the radio transmits using the *TX Contact Name* parameter specified for this channel in MOTOTRBO CPS.

Emergency Call

This value sets the duration the repeater reserves the channel after the end of an emergency call transmission. During this time, only members of the Group that the channel is reserved for can transmit.

Note: The values of the above three parameters must be taken from the corresponding parameter values programmed for the repeater via MOTOTRBO CPS in *General Settings*.

TX Preamble

Enter the value of the TX Preamble. The TX Preamble is a string of bits added in front of a data or control message (Text Messaging, Location Messaging, Registration, Radio Check, Private Call, and other message types) before transmission. The acceptable range is 0 - 8640 ms. The recommended value is 120 ms.



TX Timeout

Enter the time, in seconds, to be used as a voice session limit. When the dispatcher starts any voice session in the Dispatch Console, transmission will be interrupted after this TX Timeout expires.

Phone system

From the drop-down list, select the system for phone calls:

• Motorola Phone System

This system uses a special call type with the parameters specified for a radio unit in MOTOTRBO CPS. The Motorola Phone System is recommended for IP Site Connect mode to minimize Radio response time.

• TRBOnet Phone System (TX Interrupt)

This is a phone call system based on the private call type using TX Interrupt feature. This phone system is available for radio systems with control stations.

TX Interrupt Mode

Use the default value **MSI Proprietary**.

The 'DMR Standard' mode is selected when non-Motorola radios are used that support TX Interrupt and require to be additionally configured.

Allow CSBK Data

Select this option so that GPS data is sent in a single CSBK.

Note: This feature is available only when the <u>MNIS Data</u> <u>Service</u> is enabled for the repeater.



3.7.2.2 Privacy

• In the **Configuration** pane, under the corresponding **Repeater**, select **Privacy**.

Configuration	Privacy	
Service Network Redundancy Remote Access Restriction Advanced Settings	Privacy Type: Enhanced - Basic Privacy Key ID: 1 0 Enhanced Privacy Keys:	
Radio Systems	Algorithm ID Name Value ARC4 (40 bit) - 1	
Advanced Settings	ARC4 (40 bit) AES (256 bit) AES (256 bit) Legacy	
License	Add Remove	5 File
Set Defaults	Apply OK	Cancel

- In the **Privacy** pane, specify the following privacy-related settings:
 - Privacy Type

From the drop-down list, select one of the privacy types: **None**, **Basic**, or **Enhanced**.

Basic Privacy Key ID
 Enter the Drive and Key ID available for the Drive

Enter the Privacy Key ID available for the **Basic** privacy type.

Enhanced Privacy Keys

Here you add enhanced privacy keys when the **Enhanced** privacy type is selected.

- Click **Add** and specify the required **Algorithm**, **ID**, **Name**, and **Value** for the privacy key being added.
 - ✓ Algorithm

From the drop-down list, select one of the enhanced algorithms if you are going to use additional encryption.

3.7.2.3 DDMS Service

The DDMS, or Device Discovery and Mobility Service is a service for tracking the presence of radio subscribers in the radio network and transmitting the data to the server.

• In the **Configuration** pane, under the corresponding **Repeater**, select **DDMS service**.

TRBOnet Agent — User Guide



Configuration	DDMS service			
 	✓ Use DDMS service Local port: Service IP Address: Service port:	0 127.0.0 3000	 .1	Test
Services Repeater #1	Authentication Port: Redundant services:	5055 Address	Service port	Local port
DDMS service DDMS service Advanced Settings MVIS data service Audio Paths	1 🗸 10.10.101.	207	3000	0
License	Add)elete		Test 🔺 🔻
Set Defaults		[Apply	OK Cancel

• In the **DDMS service** pane, specify the following DDMS service-related settings:

Use DDMS service

Select this option to enable the DDMS service for the server.

Local Port

Enter the number of the local port to be used on a PC with TRBOnet Dispatch Software for DDMS service.

Service IP Address

Enter the IP Address of the PC with the DDMS service installed and running.

Service port

Enter the service port number.

Note: This value is programmed for a DDMS service via MOTOTRBO DDMS Administrative Client, in Interfaces>Watcher Settings>PortWatcher.

Authentication Port

Enter the authentication server port number.

Note: This value is programmed for a DDMS service via MOTOTRBO DDMS Administrative Client, in Interfaces>Authentication Server Settings> AuthenticationServerPort.

Redundant services

Here you see the list of redundant DDMS services for failover purposes.

- Click **Add** and specify the required parameters for the DDMS service being added.
- Click **Test** to test if the selected DDMS service is available.



Use the Up () and Down () buttons to move a selected DDMS service up and down in the priority list of DDMS services.

Advanced Settings

• In the **Configuration** pane, under **DDMS service**, select **Advanced Settings**.

Configuration	Adva	nced Settings			
 		lio ID range: nts:	1-200 All		?
Remote Access Restriction Advanced Settings	Ext	ernal sites:			
Radio Systems		Site ID	Presence	Voice	Data
Advanced Settings					
		Add	Delete		
Set Defaults			App	oly OK	Cancel

- In the **Advanced settings** pane, you can specify settings that relate to the connected DDMS service:
 - Radio ID range

Enter the range of the radios to receive data from according to the following rules:

- To receive data from all radios in the system, leave this box blank.
- To receive data from multiple radios, separate each Radio ID by a comma, for example, 105,106,111, and so on.
- To receive data from a range of radios, enter the range using the following example: 105-111.

Note: In the Radio ID list, enter Radio IDs only, without mentioning Radio Names and/or the word "Radio".

Events

In the drop-down list, select the events to be monitored.

External sites

This is the list of sites that is used when the corresponding system has a MOTOROLA System Bridge to the current Capacity MAX system.

 Click the Add button and add a site by specifying its Site ID and selecting the appropriate data types (Presence, Voice, and/or Data).



3.7.2.4 MNIS Data Service

The MNIS, or Motorola Network Interface Service, is a Windows application which acts as a data gateway between the data applications and the radio system. Data messages are routed through the MNIS.

• In the **Configuration** pane, under the corresponding **Repeater**, select **MNIS data service**.

Configuration	MNIS data service		
	Control port: 550	2.16.10.2 - Ø	Test
Repeater #1 Advanced Settings Privacy DDMS service Advanced Settings MINIS data service Advanced Settings Advanced Settings License	Add Delete	Control port 55000	Local port
Set Defaults		Apply	OK Cancel

- In the **MNIS data service** pane, specify the following MNIS data service-related settings:
 - **Use Data Gateway** Select this option to enable the MNIS data service for the server.
 - Service is on a local host
 Select this option if the MNIS data service will be used on the local PC.
 - **IP Address** Enter the IP Address used by the MNIS to communicate with the PC.
 - Note: This value is programmed for a MNIS data service via MOTOTRBO MNIS Configuration Utility, and can be retrieved from *General>Tunnel Network>Tunnel IP Address*.

Control port

Enter the number for the MNIS control port.

Note: This value is programmed for a MNIS data service via MOTOTRBO MNIS Configuration Utility, in Advanced>Network>MNIS Control Interface TCP Port.

MNIS Service

Select this option, and from the drop-down list select the available MNIS service.



Redundant services

Here you see the list of redundant MNIS data services for failover purposes.

- Click **Add** and specify the required parameters for the MNIS data service being added.
- Click **Test** to test if the selected MNIS data service is available.
- Use the Up (
) and Down (
) buttons to move a selected MNIS data service up and down in the priority list of MNIS data services.

Advanced Settings

• In the **Configuration** pane, under **MNIS data service**, select **Advanced Settings**.

Configuration	Advanced Settings
 Service Network Redundancy Remote Access Restriction Advanced Settings Repeater #1 Advanced Settings DDMS service Privacy DDMS service Advanced Settings Advanced Settings Advanced Settings License 	✓ Send data over control port Add network routes to the Windows routing table Add port forwarding rules to the remote MNIS service Queue Limit: None \$\Phi\$ Radio Range: 1 \$\Phi\$
Set Defaults	Apply OK Cancel

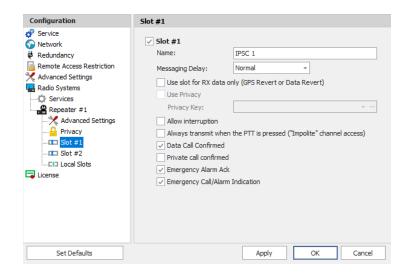
- In the **Advanced settings** pane, you can specify settings that relate to the connected MNIS data service:
 - Send data to over control port
 Select this option so that data will be sent via the specified control port.
 - Add network routes to the local Windows routing table
 Select this option to allow TRBOnet Agent to add network routes to the local Windows routing table so that data can be sent to the remote
 MNIS data service.
 - Add port forwarding rules to the remote MNIS service Select this option to allow TRBOnet Agent to add forwarding rules to the remote MNIS data service.
 - Radio Range
 Specify the range of radios to be monitored by the MNIS service.

3.7.2.5 Slots

Note: The slots are available only when **IP Site Connect** is selected in the **Repeater** pane.



• In the **Configuration** pane, under the corresponding **Repeater**, select **Slot #1** or **Slot #2**.



- In the **Slot #1** (or **Slot #2**) pane, specify the following slot-related parameters:
 - Name

Enter a name for the slot. This name will be displayed in the Dispatch Console.

Messaging Delay

From the drop-down list, select the inter-repeater messaging delay based on the IP network configuration.

• Normal

The inter-repeater messaging delay is 60 ms.

• High

The inter-repeater messaging delay is 90 ms.

Use slot for RX data only (GPS Revert or Data Revert)

Select this option to configure the slot so that it will only receive data, thus having no transmission capability.

Use Privacy

Select this option to use Privacy for the slot.

Note: This option is available only if the **Basic** or **Enhanced** Privacy Type have been selected in Repeater's <u>Privacy</u> settings.

• Privacy Key

From the drop-down list, select the privacy key.

Note: This option is available only if the **Enhanced** Privacy Type has been selected in Repeater's <u>Privacy</u> settings).



Allow TX interrupt

Select this option to allow interrupting dispatcher transmissions by radios that are Transmit Interrupt capable.

Note: This feature is available only when the **Use NAI Voice** option is cleared in the **Repeater** pane.

Always transmit when the PTT is pressed ("Impolite" channel access)

Select this option so that when the PTT button is pressed, the dispatcher will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

Note: This feature is not available in Capacity Plus and Linked Capacity Plus systems.

Data Call confirmed

Select this option to enable data packets in data calls (ARS, GPS, and Text Message) on the current slot to be confirmed.

Note: This feature is available only when both the **Use NAI Voice** and **Use NAI Data (MNIS and DDMS)** options are cleared in the **Repeater** pane.

Private call confirmed

Select this option to set Private calls on the current slot as confirmed. By default, Private calls are unconfirmed.

Emergency Alarm Ack

Select this option so that the Dispatch Console is allowed to acknowledge an emergency alarm received via this slot.

Emergency Call/Alarm Indication

Select this option so that audio and visual indication is given for an emergency call/emergency alarm received via this slot.

3.7.2.6 Local Slots

While on a local slot, voice or data are not transmitted between sites in IPSC systems. Due to MOTOTRBO limitations TRBOnet Agent can only receive information from local slots, but cannot transmit by IP connection to such slots.

Note: Local slots are available only when **IP Site Connect** is selected, and the **Use NAI Voice** option is selected in the **Repeater** pane.

If the **Use NAI Voice** option is cleared, local slots will be available only through dedicated control stations.

• In the **Configuration** pane, under the corresponding **Repeater**, select **Local Slots**.

TRBOnet Agent — User Guide



Configuration	Local Slots	
Service Service Network Redundancy Remote Access Restriction Advanced Settings Radio Systems Services Repeater #1 Advanced Settings	Local Slots Load Peers Map Name Local Jone's	Peer ID Peer Slot 1002 Slot #1
Advanced Settings		
	Add Remove	Configure
Set Defaults	Apply	OK Cancel

- In the Local Slots pane, specify the following Local Slot-related settings:
 - To add a Local Slot to the system, click **Add**.
 - Select the option in the first column to enable the selected local slot.
 - Enter a Name for the local slot. This name will be displayed in the Dispatch Console.
 - Enter the **Peer ID** of the repeater.

Note: This value can be taken from the repeater's configuration in MOTOTRBO CPS, in *General Settings*>*Radio ID*.

- From the drop-down list, select the **Peer Slot**.
- To configure the selected local slot, click **Configure**.

TX Configuration	:	×
Name:	Local Brine's	
Messaging Delay:	Normal -	
Use slot for RX data o	only (GPS Revert or Data Revert)	
Use Privacy		
Privacy Key:	· ···	
Allow interruption		
Always transmit when	n the PTT is pressed ("Impolite" channel access)	
Data Call Confirmed		
Private call confirmed		
Emergency Alarm Ack	:	
Emergency Call/Alarm	Indication	
	OK Cancel	

 Specify the desired local slot settings similar to those for a common repeater <u>slot</u>.

3.7.2.7 Audio Paths

The Audio Paths are talk paths of the system to make and receive Voice Calls; in general, they are talk groups. TRBOnet Agent requires that all audio paths of a Capacity Plus system be registered in its configuration. If an audio path is not



registered, the TRBOnet operator will not be able to receive and transmit to the corresponding talk group.

- Note: Audio paths are available only when **Capacity Plus** or **Linked Capacity Plus** are selected.
- In the **Configuration** pane, under the corresponding **Repeater**, select **Audio Paths**.

Configuration	Audio Paths
ở Service 🛜 Network	Load Groups Map
Redundancy Redundancy Remote Access Restriction Advanced Settings Radio Systems Repeater #1 Advanced Settings Privacy DMS service Advanced Settings Advanced Settings	Call Type Group ID Site ID Image: Call Structure 10 Wide Group Call 20 Wide Private Call Image: Call Structure Image: Call Structure Image: All Call Image: Call Structure Image: Call Structure
MNIS data service Advanced Settings Audio Paths	Add Delete Configure Apply OK Cancel

- In the **Audio Paths** pane, specify the following Audio Path-related settings:
 - To add an audio path to the system, click **Add**.
 - Make sure the check box in the first column is selected to make and receive voice calls from the selected subscriber.
 - From the drop-down list, select the **Call Type** for the audio path. The available call types are All Call, Group Call, and Private Call.
 - Enter the Group ID, which is an ID of the talk group the dispatcher can make calls to. The Group ID is not applicable for Private Calls and All Calls.
 - Enter the Site ID of the site the audio path will belong to in a Linked Capacity Plus system. Or, leave zero value in this column. In this case, the Site ID will be displayed as Wide, meaning that the audio path will belong to all sites in the system.
 - To configure the selected audio path, click **Configure**.
 - Specify the desired audio path settings similar to those for a common repeater <u>slot</u>.

3.7.3 Adding a Capacity MAX System

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click **Add Capacity MAX**.



Note that a Capacity Max system can only be integrated with TRBOnet PLUS software. For more information on how to configure and deploy a Capacity MAX system, see *TRBOnet PLUS MOTOTRBO Capacity MAX Deployment Guide*.

3.7.4 Adding a DIMETRA Express system

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add DIMETRA Express.

For more information on how to configure and deploy a DIMETRA Express system, see *TRBOnet DIMETRA Express Deployment Guide*.

3.7.5 Adding a TRBOnet Swift Agent

The TRBOnet Swift Agent functions as a gateway to receive and transmit voice and data.

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add TRBOnet Swift Agent.

Configuration	TRBOnet Swift Agent #	1	
💣 Service			
S Network	Name:	TRBOnet Swift Agent #1	
Redundancy	Radio ID:	64250 ‡	
Remote Access Restriction	IP Address:	10.10.188.50 -	
🔜 Radio Systems	Port:	8002 ‡	Test
Services TRBOnet Swift Agent #1	TRBOnet Local Port:	50000 ‡	
Advanced Settings	Mode:	Single Control Station	•
Redundancy	System Identifier:	Department 2	
Ticense	Use radio for RX data	only (GPS Revert or Data R	evert)
	VoIP port:	4000 ‡	
	Audio Format:	PCM 8 kHz 16 bit	-
Set Defaults		Apply	OK Cancel

- In the **TRBOnet Swift Agent** pane, specify the following Swift Agentrelated parameters:
 - Name

Enter a name for the Swift Agent. This name will be displayed in the Dispatch Console.

Radio ID

This is the Radio ID of the control station connected to the Swift Agent. (for Capacity Plus and Linked Capacity Plus systems, the maximum value is 65535).



- Note: This box is populated automatically once you have successfully tested the Swift Agent by clicking the **Test** button.
- IP Address

Enter the IP Address of the Swift Agent network interface.

Port

Enter the port number of the Swift Agent connection (8002, by default).

TRBOnet Local Port

Enter the local port number that will be used by TRBOnet Agent to establish a connection to the TRBOnet Swift Agent. Use unique port numbers for each swift agent connection if there are several swift agents connected.

Test

Click this button to check the connection to the Swift Agent. If the test is successful, you'll see the information on the Swift Agent you are connected to, such as Serial number, Firmware version, and other relevant information.

Mode

From the drop-down list, select the connection mode for the Swift Agent being configured.

System Identifier

Enter the system identifier if the control station is used with a Capacity Plus or Linked Capacity Plus system. Note that the system identifier should be the same for all control stations used in the radio system.

Use the radio for RX data only (GPS Revert or Data Revert) Select this option to configure the radio channel so that it will only receive data, thus having no transmission capability.

VoIP port

Enter the port number for audio communications (4000, by default).

Note: This setting is used for older firmware versions of TRBOnet Swift Agent.

Audio Format

From the drop-down list, select the format to transmit audio data.

3.7.5.1 Advanced Settings

• In the **Configuration** pane, under the corresponding **TRBOnet Swift Agent**, select **Advanced Settings**.

TRBOnet Agent — User Guide



Configuration	Advanced Settings		
Service Network Redundancy Remote Access Restriction Advanced Settings Radio Systems Services TRBOnet Swift Agent #1 Advanced Settings Redundancy License	 ✓ Automatically reset al ✓ Emergency Call/Alarm 		x
Set Defaults		Apply OK	Cancel

- In the **Advanced Settings** pane, specify the following Swift Agent-related advanced settings:
 - Automatically reset alarm mode

Select this option to reset alarm mode on the control station radio automatically. It is recommended to enable this option.

Emergency Call/Alarm indication

Select this option so that audio and visual indication is given by the Control Station radio when an Emergency Call/Emergency Alarm is received.

Always transmit when the PTT is pressed ("Impolite" channel access)

Select this option so that that when the PTT button is pressed, the radio will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

Note: This feature is not available in Capacity Plus and Linked Capacity Plus systems.

TX Timeout

Enter the time, in seconds, to be used as a voice session limit. When a dispatcher starts any voice session in the Dispatch Console, transmission will be interrupted after this TX Timeout expires.

Mic delay time

Select this option and specify the time, in milliseconds, to be used as a delay time interval between pushing the PTT and enabling the microphone.

• Roger beep

Select this option to play a beep sound for the time interval until the microphone is enabled. Click the ellipsis button (...) on the right and locate the desired sound file (WAV).



PTT Mode

From the drop-down list, select the mode of pressing the PTT on the radio.

Signaling system

From the drop-down list, select the signaling system.

- **MDC-1200** signaling is a Motorola data system using audio frequency shift keying (ASFK) using a 1,200 baud data rate. A general option is to enable or disable an acknowledgement (ACK) data packet.
- SELECT-5 (5 Tone Signaling System). In the 5 Tone Signaling Systems, each radio has a unique numeric identity (for example, 12345). To signal the number 12345, a sequence of 5 tones is sent. Sequences of audible tones of a very short duration are sent between radios. Most 5 tone sequences take less than half a second to send. Available for Voice Calls, Check Radio, Call Alert, and Enable/Disable Radio.

Click the **Configure** link and specify desired SELECT 5 settings.

• **Quick Call I**. Using this signaling system, the radio sends a pair of tones followed by 50 to 1,000 milliseconds of silence and then a second pair of tones.

Click the **Configure** link and specify desired Quick Call I settings.

• **Quick Call II**. Using this signaling system, the radio sends a single tone followed by 50 to 1,000 milliseconds of silence and then a second tone.

Click the **Configure** link and specify desired Quick Call II settings.

• Quick Call II MOTOTRBO When this system is selected, the parameters are configured for the radio units via the MOTOTRBO CPS.

3.7.5.2 Redundancy

A Redundant TRBOnet Swift Agent will be used when a connection to the Main TRBOnet Swift Agent is lost.

• In the **Configuration** pane, under the corresponding **TRBOnet Swift Agent**, select **Redundancy**.

TRBOnet Agent — User Guide



Configuration	Ree	lunda	incy		
ở Service 🕥 Network	Rec	dundar	nt agents:		
🛱 Redundancy			IP Address	Port	Local Port
Remote Access Restriction X Advanced Settings Radio Systems	1	\checkmark	10.10.1.210	8002	0
Services					
TRBOnet Swift Agent #1					
Advanced Settings					
T License					
		Add	Delete		Test 🔺 🔻
Set Defaults				Apply	OK Cancel

- In the **Redundancy** pane, specify the following Redundant Agent-related settings:
 - Click Add and specify the desired parameters for the Redundant Agent being added.
 - IP Address

Enter the IP Address of the Swift Agent that will be used as a Redundant Swift Agent.

Port

Enter the port number that will be used for connections between the server and the Redundant Swift Agent (8002, by default).

- Click **Test** to check the connection to the Redundant Swift Agent. If the test is successful, you'll see the information on the Swift Agent you are connected to, such as Serial number, Firmware version, and other relevant information.
- Local Port

Enter the port number that will be used for connections from the Redundant Swift Agent. The value 0 (default) means that a random port will be used.

3.7.6 Adding a Control Station

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click **Add Control Station**.



Configuration	Control Station #1	
Service Network Redundancy Advanced Settings Control Station #1 Advanced Settings License	Name: Radio ID: IP Address: Mode: System Identifier:	Control Station #1 64250 192.168.10.2 • Single Control Station © Department 1 only (GPS Revert or Data Revert) Primary Sound Driver • Primary Sound Capture Driver • Ø
Set Defaults		Apply OK Cancel

- In the **Control Station** pane, specify the following control station-related parameters:
 - Name

Enter a name for the control station. This name will be displayed in the Dispatch Console in the Voice Dispatch Radio Interface pane. It will be the name at the top of the PTT box.

Radio ID

This is the Radio ID of the radio unit connected as a control station. (for Capacity Plus and Linked Capacity Plus systems, the maximum value is 65535).

Note: This box is populated automatically once you have successfully tested the control station by clicking the **Test** button.

IP Address

Enter, or select from the list, the IP Address of the control station network interface.

Note: This value is can be taken from the radio's configuration in MOTOTRBO CPS, in *Network*>Accessory *IP*.

Test

Click this button to check the connection to the control station. If the test is successful, you'll see the information on the control station you are connected to, such as radio ID, serial number, firmware version, and other relevant information.

Mode

From the drop-down list, select the connection mode for the control station being configured.



System Identifier

Enter the system identifier with which the control station is used within a Capacity Plus or Linked Capacity Plus system. Note that the system identifier should be the same for all control stations used in a (Linked) Capacity Plus system.

- Use radio for RX data only (GPS Revert or Data Revert)
 Select this option to configure the radio channel so that it will only receive data, thus having no transmission capability.
- Playback device

From the drop-down list, select the playback device on the PC that will be used to transfer audio data to the connected control station.

Recording device

From the drop-down list, select the recording device on the PC that will be used to receive audio data from the control station connected via a line-in jack.

3.7.6.1 Advanced Settings

• In the **Configuration** pane, under the corresponding **Control Station**, select **Advanced Settings**.

Configuration	Advanced Settings
	 Automatically reset alarm mode Automatically handle call alert Emergency Call/Alarm indication Use front microphone Always transmit when the PTT is pressed ("Impolite" channel access) Use serial port for PTT device Serial port: TX Timeout: 60 seconds Mic delay time: 600 milliseconds Kone Configure Allow CSBK Data
Set Defaults	Apply OK Cancel

- In the **Advanced Settings** pane, specify the following control stationrelated advanced settings:
 - Automatically reset alarm mode
 Select this option to reset alarm mode on the control station radio automatically. It is recommended to enable this option.
 - Automatically handle call alert Select this option to automatically redirect call alerts from the control station radio to the Dispatch Console.



Emergency Call/Alarm indication

Select this option so that audio and visual indication is given by the control station radio when an emergency Call/Emergency Alarm is received.

Use front microphone

Select this option to use a remote control of the PTT button via a remote speaker microphone on the radio.

Always transmit when the PTT is pressed ("Impolite" channel access)

Select this option so that when the PTT button is pressed, the radio will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

Use serial port for PTT device

Select this option to use a remote control of the PTT button via the serial port of the PC, and select the serial port from the drop-down list.

TX Timeout

Enter the time, in seconds, to be used as a voice session limit. When a dispatcher starts any voice session in the Dispatch Console, the ongoing transmission will be interrupted after this TX Timeout expires.

Mic delay time

Select this option and specify the time, in milliseconds, to be used as a delay time interval between pushing the PTT and enabling the microphone.

• Roger beep

Select this option to play a beep sound for the time interval until the microphone is enabled. Click the ellipsis button (...) on the right and locate the desired sound file (WAV).

Signaling system

From the drop-down list, select the signaling system.

- **MDC-1200** signaling is a Motorola data system using audio frequency shift keying (ASFK) using a 1,200 baud data rate. A general option setting for the system is to enable or disable an acknowledgement (ACK) data packet.
- SELECT-5 (5 Tone Signaling System). In the 5 Tone Signaling Systems, each radio has a unique numeric identity (for example, 12345). To signal the number 12345, a sequence of 5 tones is sent. Sequences of audible tones of a very short duration are sent between radios. Most 5 tone sequences take less than half a second to send. Available for Voice Calls, Check Radio, Call Alert, and Enable/Disable Radio.

Click the **Configure** link and specify desired SELECT 5 settings.

TRBOnet Agent — User Guide



Voice Calls			
Call Type	Telegram ID	Source ID	Target ID
Private Call:	1 🗘 Encoder:		A1 A2 A3 A4
	Decoder:	A1 A2 A3 A4	
Group Call:	1 🗘 Encoder:		A1 A2 A3 A4
	Decoder:	A1 A2 A3 A4	
All Call:	1 🗘 Encoder:		A1 A2 A3 A4
	Decoder:	A1 A2 A3 A4	· · · · · · · · · · · · · · · · · · ·
Check Radio			
Call Alert			
Enable Radio			
Disable Radio			

• **Quick Call I**. Using this signaling system, the radio sends a pair of tones followed by 50 to 1,000 milliseconds of silence and then a second pair of tones.

Click the **Configure** link and specify desired Quick Call I settings.

Quick Call I		×
Preamble:	500	‡ ms
Tone 1:	1000	‡ ms
Tone 2:	1000	‡ ms
Long Tone:	4000	‡ ms
Pause:	200	‡ ms
Defaults	ОК	Cancel

• **Quick Call II**. Using this signaling system, the radio sends a single tone followed by 50 to 1,000 milliseconds of silence and then a second tone.

Click the **Configure** link and specify desired Quick Call II settings.

• Quick Call II MOTOTRBO

When this system is selected, the parameters are configured on the radio unit via the MOTOTRBO CPS.

Allow CSBK Data

Select this option so that GPS data is sent in a single CSBK.

3.7.6.2 Audio Paths

The Audio Paths are talk paths of the system to make and receive Voice Calls; in general, they are talk groups. TRBOnet Agent requires that all audio paths of a radio system be registered in its configuration. If an audio path is not registered, the TRBOnet operator will not be able to receive and transmit to the corresponding talk group.

Note: Audio paths are available only when one of the following modes is selected: **Capacity Plus**, **Linked Capacity Plus**, **Connect Plus**, or **Capacity MAX**.

• In the **Configuration** pane, under the corresponding **Control Station**, select **Audio Paths**.



Configuration	Audio Paths	
🗬 Service 🛜 Network	Site ID: 1	
🛱 Redundancy	Call Type	Group ID Site
Remote Access Restriction Advanced Settings	Group Call	10 Wide
Radio Systems	Group Call	20 Wide
- O Services	Private Call	•
Control Station #1	All Call	
License	Add Delete	
0.10.6.0		
Set Defaults	Apply	OK Cancel

- In the **Audio Paths** pane, specify the following Audio Path-related settings:
 - To add an audio path to the system, click **Add**.
 - Make sure the check box in the first column is selected to make and receive voice calls from the selected subscriber.
 - From the drop-down list, select the **Call Type** for the audio path. The available call types are All Call, Group Call, and Private Call.
 - Enter the **Group ID**, which is an ID of the talk group the dispatcher can make calls to. The Group ID is not applicable for Private Calls and All Calls.
 - In the **Site** column, select either Local or Wide. The value Wide means that the audio path will be to all sites in the system and not just to the local site.

3.7.7 Adding an ECOS-D Repeater

The **ECOS-D** repeater is configured as a stand-alone repeater which supports connections to MOTOTRBO[™] radios to transmit voice and data in digital, analog, and mixed modes.

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add ECOS-D Repeater.

TRBOnet Agent — User Guide



Configuration	ECOS-D #1	
Configuration	ECOS-D #1 Name: Radio ID: Repeater Mode:	ECOS-D #1 64250 \$ Digital *
Set Defaults		Apply OK Cancel

- In the **ECOS-D** pane, specify the following ECOS-D Repeater-related parameters:
 - Name

Enter a name for the ECOS-D Repeater. This name will be displayed in the Dispatch Console.

Radio ID

Enter the Radio ID for the ECOS-D Repeater (for Capacity Plus systems, the maximum value is 65535).

The Radio ID is an individual ID that uniquely identifies the radio. This ID is used by other calling radios when addressing the radio, for instance, when making a private call or sending a text message.

Repeater Mode

From the drop-down list, select the mode. The available modes are Digital, Analog, Mixed, and <u>Tier III</u>.

3.7.7.1 Advanced Settings

• In the **Configuration** pane, under the corresponding **ECOS-D**, select **Advanced Settings**.

Configuration	Advanced Settings		
Service Network Redundancy Remote Access Restriction Advanced Settings ECOS-D #1 Cost D #1 Slot #2 License	Keep Alive Interval: TX Timeout: Audio Frame Size:	10 60 20	 seconds seconds ms
Set Defaults		Apply	OK Cancel



• In the **Advanced Settings** pane, specify the following ECOS-D Repeaterrelated advanced settings:

Keep Alive Interval

Enter the time interval, in seconds, for TRBOnet Agent to check the connection to the ECOS-D repeater (10, by default).

TX Timeout

Enter the time, in seconds, to be used as a voice session limit. When a Dispatcher starts any Voice Session in the Dispatch Console, transmission will be interrupted after this TX Timeout expires (60, by default).

Audio Frame Size

Set the audio frame size, in milliseconds.

3.7.7.2 Slots

The ECOS-D repeater has two available slots (in **Digital** or **Mixed** mode) to transmit voice and data.

• In the **Configuration** pane, under the corresponding **ECOS-D**, select **Slot #1** or **Slot #2**.

Configuration	Slot #1
Service Redundancy Remote Access Restriction Advanced Settings Services ECOS-D #1 Advanced Settings Solv #1 Slot #1 Slot #1 Slot #2 License	✓ Slot #1 Name: Slot 1 TRBOnet IP Address: 10.10.100.99 • ¢ Port: 6080 ¢ ECOS-D IP Address: 10.10.9.30 • Port: 6080 ¢ Use gateway for RX data only (GPS Revert or Data Revert) Use Encryption Always transmit when the PTT is pressed ("Impolite" channel access) ✓ Data Call Confirmed ✓ Private call confirmed ✓ Private call confirmed
Set Defaults	Apply OK Cancel

- In the **Slot #1** (or **Slot #2**) pane, specify the following slot-related parameters:
 - Name

Enter a name for the slot. This name will be displayed in the Dispatch Console.

TRBOnet IP Address

Enter the IP Address of the PC with TRBOnet Dispatch Software. Enter the **Port** number (6080, by default).

ECOS-D IP Address

Enter the IP Address of the ECOS-D Repeater (refer to the repeater configuration). Enter the **Port** number (6080, by default).

TRBOnet Agent — User Guide



- Click **Test** to check the connection to the repeater.
- Use gateway for RX data only (GPS Revert or Data Revert)
 Select this option to configure the channel so that it will only receive data, thus having no transmission capability.
- Use Encryption

Select this option to encrypt voice and data traffic over IP.

Always transmit when the PTT is pressed ("Impolite" channel access)

Select this option so that that when the PTT button is pressed, the radio will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

Note: This feature is not available in Capacity Plus and Linked Capacity Plus systems.

Data Call Confirmed

Select this option to enable individual packets in data calls (ARS, GPS, and Text Message) on the current slot to be confirmed.

Private call confirmed

Select this option to set Private calls on the current slot as confirmed.

3.7.7.3 Tier III and Audio Paths

The ECOS-D repeater can be used in a **Tier III** mode. To configure this mode, do the following:

- While in the ECOS-D pane, select Tier III from the Repeater Mode dropdown list.
- In the **Configuration** pane, under the corresponding **ECOS-D**, select **Tier III**.

Configuration	Tier III
Service Network Redundancy Remote Access Restriction Remote Access Restriction Readio Systems COS-D #1 COS-D #1 Advanced Settings COS-D #1 Advanced Settings COS-D #1 License	✓ Tier III Name: Tier III TRBOnet IP Address: 10.10.100.99 • ¢ Port: 6080 ¢ ECOS-D IP Address: 10.10.9.30 • Port: 6080 ¢ Test Use gateway for RX data only (GPS Revert or Data Revert) Use Encryption Always transmit when the PTT is pressed ("Impolite" channel access) Ø Data Call Confirmed ✓ Private call confirmed
Set Defaults	Apply OK Cancel

• In the **Tier III** pane, specify the following Tier III-related parameters:

Use Encryption

Select this option to encrypt voice and data traffic over IP.



Always transmit when the PTT is pressed ("Impolite" channel access)

Select this option so that that when the PTT button is pressed, the radio will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

Note: This feature is not available in Capacity Plus and Linked Capacity Plus systems.

Private call confirmed

Select this option to set Private calls on the current slot as confirmed.

To configure Audio Paths:

• In the **Configuration** pane, under the corresponding **ECOS-D**, select **Audio Paths**.

Note: Make sure the **Tier III** mode has been selected as a Repeater Mode for the ECOS-D repeater.

Configuration	Audio Paths	
Service Network Redundancy Remote Access Restriction Advanced Settings ECOS-D #1 ECOS	Call Type Group Call Group Call Private Call All Call Add Delete	Group ID 10 20
Set Defaults	Apply OK	Cancel

- In the **Audio Paths** pane, specify the following Audio Path-related settings:
 - To add an Audio Path to the system, click **Add**.
 - Make sure the check box in the first column is selected to make and receive Voice Calls from the selected subscriber.
 - From the drop-down list, select the **Call Type** for the audio path. The available call types are All Call, Group Call, and Private Call.
 - Enter the **Group ID**, which is a radio ID of the talk group to make a call to. The Group ID is not applicable for Private Calls and All Calls.

3.7.7.4 Analog channel

The ECOS-D repeater can also use the Analog channel.



• In the **Configuration** pane, under the corresponding **ECOS-D**, select **Analog**.

Note: Make sure the **Analog** or **Mixed** mode have been selected as a Repeater Mode for the ECOS-D repeater.

Configuration	Analog
 Service Network Redundancy Remote Access Restriction Advanced Settings ECOS-D #1 Advanced Settings License 	 ✓ Analog Name: Analog TRBOnet IP Address: 10, 10, 100, 99 + ¢ Port: 6080 + ECOS-D IP Address: 10, 10, 9, 30 + Port: 6080 + Test Use gateway for RX data only (GPS Revert or Data Revert) Use Encryption Always transmit when the PTT is pressed ("Impolite" channel access) Data Call Confirmed Private call confirmed
Set Defaults	Apply OK Cancel

• In the **Analog** pane, specify the following Analog channel-related settings:

Name

Enter a name for the ECOS-D repeater in the analog mode. This name will be displayed in the Dispatch Console.

TRBOnet IP Address

Enter the IP Address of the PC with TRBOnet Dispatch Software. Enter the **Port** number (6080, by default).

ECOS-D IP Address

Enter the IP Address of the ECOS-D Repeater (refer to the repeater configuration). Enter the **Port** number (6080, by default).

- Click **Test** to check the connection to the repeater.
- Always transmit when the PTT is pressed ("Impolite" channel access)

Select this option so that when the PTT button is pressed, the radio will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

Note: This feature is not available in Capacity Plus and Linked Capacity Plus systems.

3.7.8 Adding a KAIROS Repeater

The **Radio Activity Kairos** repeater is configured as a stand-alone repeater which supports connections to MOTOTRBO[™] radios to transmit voice and data in digital, analog, and mixed modes.



- Note: When the Kairos repeater is connected, the following TRBOnet Dispatch features are not supported: Remote Monitor, Disable Radio, Enable Radio, Kill Radio, and Telemetry.
 - In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
 - In the drop-down menu, click Add KAIROS Repeater.

Configuration	Kairos #1	
Service Network Redundancy Remote Access Restriction Advanced Settings Services Services Advanced Settings Slot #1 Slot #2 Analog License	Name: IP Address: User Name: Password: Radio ID: Repeater Mode:	Kairos #1 10.10.155.130 ~ kairos Test 64250 Mixed (Analog and Digital) ~
Set Defaults		Apply OK Cancel

- In the Kairos pane, specify the following repeater-related parameters:
 - Name

Enter a name for the Kairos repeater. This name will be displayed in the Dispatch Console.

IP Address

Enter the IP Address of the Kairos repeater network interface.

User Name

Enter the user name. For the user name, refer to the Kairos repeater configuration.

Password

Enter the password for the user. For the password, refer to the Kairos repeater configuration.

Radio ID

Enter the Radio ID, which is a gateway for voice and data. The Radio ID must be unique in the radio system.

Repeater Mode

From the drop-down list, select the mode. The available modes are Digital, Analog, and Mixed.

3.7.8.1 Advanced Settings

• In the **Configuration** pane, under the corresponding **Kairos**, select **Advanced Settings**.

TRBOnet Agent — User Guide



Configuration	Advanced Settings		
🗬 Service			
S Network	Keep Alive Interval:	10 ‡	seconds
💐 Redundancy	TX Timeout:	60	seconds
Remote Access Restriction	(
🔀 Advanced Settings	Call Hangtime (ms):		
Radio Systems	Group Call:	3000	
Services	Private Call:	4000	
Advanced Settings	Emergency Call:	4000	
III Slot #1			
Analog			
🗔 License			
Set Defaults		Apply	OK Cancel

- In the **Advanced Settings** pane, specify the following Kairos Repeaterrelated advanced settings:
 - Keep Alive Interval

Enter the time interval, in seconds, for TRBOnet Agent to check the connection to the Kairos repeater (10, by default).

TX Timeout

Enter the time, in seconds, to be used as a voice session limit. When a Dispatcher starts any Voice Session in the Dispatch Console, transmission will be interrupted after this TX Timeout expires (60, by default).

Call Hangtime (ms):

Group Call

This value sets the duration the repeater reserves the channel after the end of a group call transmission. During this time, only members of the group that the channel is reserved for can transmit.

Private Call

This value sets the duration a radio keeps the private call setup after a user releases the PTT button. This is to avoid setting up the call again each time a user presses the PTT button to transmit. During this time, other radios can still transmit since the channel is essentially idle. After the hang timer expires, the radio transmits using the *TX Contact Name* parameter specified for this channel in MOTOTRBO CPS.

Emergency Call

This value sets the duration the repeater reserves the channel after the end of an emergency call transmission. During this time, only members of the Group that the channel is reserved for can transmit.

3.7.8.2 Slots

The Kairos repeater has two digital slots (in **Digital** mode) and one analog slot (in **Mixed** or **Analog** mode) to transmit voice and data.



 In the Configuration pane, under the corresponding Kairos, select Slot #1 or Slot #2 (or Analog, if you have selected Mixed or Analog mode).

Configuration	Slot #1		
Service Service Network	✓ Slot #1		
Redundancy Remote Access Restriction X Advanced Settings	Name: Audio Codec:	Slot G.711 µ-Law/8000	•
Radio Systems	Audio port KAIROS: Audio port TRBOnet:	40000 ÷	
Kairos #1	Data port KAIROS:	40001	
Slot #1	Data port TRBOnet:	40001	
Set Defaults		Apply OK	Cancel

- In the **Slot #1** (or **Slot #2**) pane, specify the following slot-related parameters:
 - Name

Enter a name for the slot. This name will be displayed in the Dispatch Console.

Audio Codec

From the drop-down list, select the audio codec to be used to compress the audio files.

- Audio port KAIROS/ Audio port TRBOnet Enter the port numbers to be used for KAIROS/TRBOnet audio ports.
- Data port KAIROS/ Data port TRBOnet Enter the port numbers to be used for KAIROS/TRBOnet data ports.
 - Note: Use the matching port numbers for KAIROS and TRBOnet. The default audio and data port numbers are
 40000 and 40001 for Digital slot 1, 40002 and 40003 for Digital slot 2, and 40004 and 40005 for the Analog slot.

3.7.9 Adding a WAVE OnCloud Gateway

WAVE OnCloud is a Push-to-Talk (PTT) service that connects phones, computers and radios together.

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add WAVE OnCloud Gateway.
- In the **Wave OnCloud Gateway** pane, specify the following Wave gateway-related parameters:



Name

Enter a name for the Wave OnCloud gateway. This name will be displayed in the Dispatch Console.

Authentication FQDN

Enter the fully-qualified domain name of the authentication server.

Client ID

Enter the Client ID that will be used for authentication.

Client Secret

Enter the Client Secret that will be used for authentication.

Agency

Enter the name of the agency that will be used.

Test

Click this button and see the list of all available agencies.

3.7.10 Adding an ED137 / Jotron Station

This section describes how to connect an ED137-compatible radio station (for example, the Jotron 7000 series Multimode Digital Radio).

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add ED137 Station.

Configuration	ED137 Station #1				
Service Network Redundancy Redundancy Redundancy Radio Systems Radio Systems D137 Station #1 Advanced Settings License	Name: Local Interface: Local Port: Station Radio User: V Use Control Port: Separate receiver an Receiver:	ED137 Station #1 10.10.100.99 0 900 3008 d transmitter	* *		- ¢
	IP Address: Port:	10.10.123.145	*	Test	
	Transmitter: IP Address:	10.10.123.158			
Set Defaults	Port:	5060		Test OK	Cancel

- In the **ED137 Station** pane, specify the following ED137 Station-related settings:
 - Name

Enter a name for the control station. This name will be displayed in the Dispatch Console.

Local Interface

Enter the IP address of the PC with TRBOnet Server.



Local Port

Enter the local UDP port number.

- Station Radio User Enter the SIP ID of the radio station.
- Use Control Port Select this option and enter the control port number.
- Separate receiver and transmitter
 Select this option if the receiver and transmitter are separate devices with different IP addresses.
- **IP Address** Enter the IP Address of the receiver/transmitter (or transceiver).
- **Port** Enter the port number (5060, by default).

3.7.11 Adding a Zenitel Station

This section describes how to connect a Zenitel station.

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add Zenitel Station.
- In the **Zenitel Station** pane, specify the following Zenitel-related settings:
 - Name

Enter a name for the Zenitel station. This name will be displayed in the Dispatch Console.

Radio ID

This is the Radio ID of the Zenitel station. The maximum value is 65535.

- Local Interface
 Enter the IP address of the PC with TRBOnet Server.
- Local Port

Enter the local UDP port number.

- Station IP Address Enter the IP address of the Zenitel station.
- Station Control Port

Enter the control port on the Zenitel station.

Station SIP Port

Enter SIP port on the Zenitel station (5060, by default).

3.7.12 Adding an Analog Station

TRBOnet Dispatch Software allows using analog radios as control stations.



- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add Analog Station.

Configuration	Control Station #1	
Configuration Service Network Redundancy Remote Access Restriction Advanced Settings Radio Systems Services Control Station #1 Conse	Name: Playback device: Recording device: Serial port: Always transmit whe TX Timeout:	Control Station #1 Speakers (2- Logitech USB Headset) • ¢ Microphone (2- Logitech USB Headset) • ¢ COM1 • n the PTT is pressed ("Impolite" channel access) 60 • ¢ seconds condot seconds
	✓ Mic delay time:✓ Roger beep:	600 milliseconds C:\Desktop\RingMobile.wav × ···
	Extended protocol:	None
	Signaling System:	Quick Call I
		Configure
Set Defaults		Apply OK Cancel

- In the **Control Station** pane, specify the following Analog Control Stationrelated settings:
 - Name

Enter a name for the analog control station. This name will be displayed in the Dispatch Console.

Playback device

From the drop-down list, select the playback device on the PC that the control station is connected to.

Recording device

From the drop-down list, select the recording device on the PC that the control station is connected to.

Serial port

From the drop-down list, select the serial port the control station is connected to on the PC.

 Always transmit when the PTT is pressed ("Impolite" channel access) - Select this option so that when the PTT button is pressed, the radio will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

Note: This feature is not available in Capacity Plus and Linked Capacity Plus systems.

TX Timeout

Enter the time, in seconds, to be used as a voice session limit. When a Dispatcher starts any voice session in the Dispatch Console, transmission will be interrupted after this TX Timeout expires.



Mic delay time

Select this option and specify the time, in milliseconds, to be used as a delay time interval between pushing the PTT and enabling the microphone.

• Roger beep

Select this option to play a beep sound for the time interval until the microphone is enabled. Click the ellipsis button (...) on the right and locate the desired sound file (WAV).

Extended protocol

From the drop-down-list, select either **None**, if your radio does not support the extended protocol, or **IC-F1721D v1.01** if the radio supports the extended protocol.

Signaling System

From the drop-down-list, select the signaling system (**Quick Call I** or **Quick Call II**). Click the **Configure** link and specify desired Quick Call settings. Selecting the signaling system is available only if **None** is selected in the **Extended Protocol** list.

3.7.12.1 Serial Port

- Note: The serial port settings are available only when the extended protocol **IC-F1721D v1.01** is selected for the analog control station.
- In the **Configuration** pane, under the corresponding **Control Station**, select **Serial Port**.

Configuration	Serial Port	
Service Network Redundancy Remote Access Restriction Advanced Settings Radio Systems Services Control Station #1 Serial Port License	Baud Rate: Data Bits: Parity: Stop Bits: Handshake:	19200 \$ 8 \$ None * 1 * None *
Set Defaults		Apply OK Cancel

• In the **Serial Port** pane, specify the same serial port settings as those on the radio device connected to the serial port.

3.7.13 Adding an XRC-9000 Controller

The XRC Controller is a site controller that provides a channel for transferring data between sites and managing data flow.



- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add XRC-9000 Controller.

Configuration	Controller #1
Service Network Redundancy Redundancy Radio Systems Services Controller #1 Services Redundancy Redundancy License	Name: Controller #1 IP Address: 10.10.100 Test System Identifier: Connect Plus 1
Set Defaults	Apply OK Cancel

- In the **Controller** pane, specify the following XRC controller-related parameters:
 - Name

Enter a name for the XRC controller. This name will be displayed in the Dispatch Console.

IP Address

Enter the IP Address of the XRC controller network interface.

- Click **Test** to check the connection to the controller.
- System Identifier

Enter the system identifier. Note that the system identifier should be the same through all the controllers in a Connect Plus system.

3.7.13.1 Services

• In the **Configuration** pane, under the corresponding **XRC Controller**, select **Services**.



Configuration	Services	
Service Ketwork Ke	✓ Automatic Registration service (ARS) Controller port: 4005 Local port: 0 ✓ Location service (GPS / Indoor) Controller port: 4001 Local port: 4001 Use adaptive location trigger	^
C License	✓ Text Messages service (TMS) Controller port: 4007 Local port: 4007 Dispatcher ID: 64250 Multi Gate connection Subscribe ID: 1	
Set Defaults	Apply OK Cance	

- In the **Services** pane, specify the following XRC controller-related services:
 - Automatic Registration service (ARS) provides an automated data application registration for the radio. When the radio powers up, it automatically registers with the server. This feature is used with data applications, that is any data traffic on this channel is associated with an application server, such as MOTOTRBO Text Messaging or MOTOTRBO Location Service. This option is selected by default and cannot be cleared.
 - Controller port

Enter the controller's port number for ARS service (4005, by default).

• Local port

Enter the local port of the PC with TRBOnet Dispatch Software. The value 0 (default) means that a random port will be used.

Location service (GPS / Indoor)

Select this option to enable Location service on the controller. The radio can send its coordinates when it is in Global Positioning coverage area.

• Controller port

Enter the controller's port number for Location service (4001, by default).

• Local port

Enter the local port of the PC with TRBOnet Dispatch Software (4001, by default).

• Use adaptive location trigger Select this option to use the adaptive GPS polling interval.

Text Messaging service (TMS)

Select this option to enable text message transmission on the controller.



• Port

Enter the controller's port number for Text Messaging service (4007, by default).

• Local port

Enter the local port of the PC with TRBOnet Dispatch Software (4007, by default).

• Dispatcher ID

Enter the Dispatcher ID. The Dispatcher ID should belong to TRBOnet Server account in a Connect Plus system.

Multi Gate connection

Select this option to use a multi-gate connection and enter the corresponding **Subscribe ID.**

3.7.13.2 Advanced Settings

• In the **Configuration** pane, under the corresponding **XRC Controller**, select **Advanced Settings**.

Configuration	Advanced Settings		
 	Radio ID range: 10 External sites:	0-200	?
Advanced Settings	Site ID Pr 251 252 ‡	esence Voice	Data
Advanced Settings	Add Delet	e	
Set Defaults		Apply OK	Cancel

- In the **Advanced Settings** pane, specify the following XRC controllerrelated services:
 - Radio ID list

Enter a list of the radios to receive data from according to the following rules:

- To receive data from all radios in the system, leave this box blank.
- To receive data from multiple radios, separate each Radio ID by a comma, for example, 105,106,111, and so on.
- To receive data from a range of radios, enter the range using the following example: 105-111.

Note: In the Radio ID list, enter Radio IDs only, without mentioning Radio Names and/or the word "Radio".



External sites

This is the list of Connect Plus sites that is used when the corresponding Connect Plus system has a MOTOROLA System Bridge to the current Capacity MAX system.

 Click the Add button and add a site by specifying its Site ID and selecting the appropriate data types (Presence, Voice, and/or Data).

3.7.13.3 Redundancy

A redundant XRC controller will be used when a connection to the main XRC controller is lost.

• In the **Configuration** pane, under the corresponding **XRC Controller**, select **Redundancy**.

Configuration	Redundancy		
🛷 Service 🎧 Network	Redundant controllers:		
Redundancy	IP Address Con	troller port Local port	
Remote Access Restriction	1 🗸 10.10.101 400	5 0	
🔀 Advanced Settings			
Radio Systems			
Services			
Advanced Settings			
Redundancy			
📮 License			
	Add Delete	Test 🔺 🔻	
Set Defaults		Apply OK Cancel	

- In the **Redundancy** pane, specify the following redundant XRC controllerrelated settings:
 - Click Add and specify the desired parameters for the redundant XRC controller being added.
 - IP Address

Enter the IP Address of the XRC controller that will be used as a redundant XRC controller.

• Controller port

Enter the port number of the redundant XRC controller for incoming connections (4005, by default).

• Click **Test** to check the connection to the redundant XRC Controller. If the test is successful, you'll see the information on the XRC controller you are connected to, such as serial number, firmware version, and other relevant information.



• Local port

Enter the port number that will be used for incoming connections from the redundant XRC controller. The value 0 (default) means that a random port will be used.

3.7.14 Adding an XRT-9000 Controller

The XRT controller functions as a voice gateway connected to each XRC controller in a Connect Plus system.

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add XRT-9000 Controller.

Configuration	Controller #1		
Service Service Remote Access Restriction Remote Access Restriction Radio Systems Radio Systems Services Servi	System Name: Radio ID: Start Local Port: XRT-9000 Controller In Controller TCP Port: User Name: Password: System Identifier: Monitor voice calls (no	10. 10. 234. 102 * 10001 \$ Admin ***** Connect Plus 1 ******	Test
Set Defaults		Apply	OK Cancel

- In the **Controller** pane, specify the following XRT Controller-related parameters:
 - System Name

Enter a name for the XRT Controller. This name will be displayed in the Dispatch Console.

Radio ID

Enter the individual virtual radio ID. The virtual Radio ID is required to do the following:

- Make all types of voice calls from XRT Controller to radios, dispatchers and groups.
- Send commands (for example, Remote Monitor).
- Start Local Port

Enter the local port of the PC with TRBOnet Agent. The value 0 (default) means that a random port will be used.

XRT-9000 Controller Info:

Controller IP Address

Enter the IP Address of the XRT controller network interface.



Controller TCP Port

Enter the port number of the XRT controller to be used for connections via TCP (10001, by default).

- Click **Test** to check the connection to the XRT controller.
- User Name

Enter the user name. For the user name, refer to the XRT controller configuration.

Password

Enter the password for the user. For the password, refer to the XRT controller configuration.

Note: The user name and password must belong to the same TRBOnet Connect Plus account and be appropriately configured.

System Identifier

Enter the system identifier. Note that the system identifier should be the same through all the controllers in a Connect Plus system.

 Monitor voice calls (no audio recordings) This is the Billing feature. Select this option to monitor only PTT press events.

3.7.14.1 Privacy

• In the **Configuration** pane, under the corresponding **XRT Controller**, select **Privacy**.

Configuration	Privacy	
Service Service Redundancy Advanced Settings Radio Systems Services Services	Privacy Type: Enhanced Basic Privacy Key ID: 1 Enhanced Privacy Keys:	Value
Set Defaults	Apply	OK Cancel

- In the **Privacy** pane, specify the following Privacy-related settings:
 - Privacy Type

From the drop-down list, select one of the privacy types: **None**, **Basic**, or **Enhanced**.

Basic Privacy Key ID

Enter the Privacy Key ID available for the **Basic** privacy type.



Enhanced Privacy Keys

Here you add enhanced privacy keys when the **Enhanced** privacy type is selected.

- Click **Add** and specify the required **Algorithm**, **ID**, **Name**, and **Value** for the privacy key being added.
 - ✓ Algorithm

From the drop-down list, select one of the enhanced algorithms if you are going to use additional encryption.

3.7.14.2 Data Path

The Data Paths are used to transmit data in a Connect Plus system.

• In the **Configuration** pane, under the corresponding **XRT Controller**, select **Data Path**.

Configuration	Data Path	
Configuration Service Network Redundancy Remote Access Restriction Advanced Settings Radio Systems Services Services Services Redundancy Services Madvanced Settings Privacy Data Path	Data Path Data Service: Radio ID:	Autodetect *
Audio Paths		Apply OK Cancel

• In the **Data Path** pane, specify the following data path-related settings:

Data Service

From the drop-down list, select the data service to be used to transfer data.

Radio ID

Enter the Radio ID of the data service.

3.7.14.3 Audio Paths

The Audio Paths are talk paths of the system to make and receive voice calls; in general, they are talk groups. TRBOnet Agent requires that all audio paths of a Connect Plus system be registered in its configuration. If an audio path is not registered, the TRBOnet operator will not be able to receive and transmit to the corresponding talk group.

• In the **Configuration** pane, under the corresponding **XRT Controller**, select **Audio Paths**.



Configuration	Audio Paths	
💣 Service		
S Network	Call Type Sou	rce ID Target ID
🛱 Redundancy	Group Call	10
Remote Access Restriction	Group Call	20
🔀 Advanced Settings	Private Call 642	
🔚 Radio Systems		.50
Services	All Call	
Controller #1		
Services		
Advanced Settings		
Redundancy		
XRT Controller #1		
Privacy		
💭 Data Path		
Audio Paths		
🔤 🗰 🖗 Redundancy		
🗔 License		
	Add Delete	Configure
Set Defaults	Apply	OK Cancel

- In the **Audio Paths** pane, specify the following Audio Path-related settings:
 - To add an Audio Path to the system, click **Add**.
 - Make sure the check box in the first column is selected to make and receive Voice Calls from the selected subscriber.
 - From the drop-down list, select the **Call Type** for the audio path. The available call types are All Call, Group Call, and Private Call.
 - Enter the Source ID for Private Calls. In general, this is TRBOnet's Radio ID. If more than one Radio ID is specified in a Connect Plus system (for example, for different dispatchers), the corresponding talk paths should be added for all of them.
 - Enter the **Target ID** for Group Calls. This is the Radio ID of the talk group to make a call to. The Target ID is not applicable for Private Calls and All Calls.

3.7.14.4 Redundancy

A Redundant XRT Controller will be used when a connection to the Main XRT Controller is lost.

• In the **Configuration** pane, under the corresponding **XRT Controller**, select **Redundancy**.



Configuration	Redu	ında	псу		
Configuration Service Network Redundancy Redundancy Radio Systems Services Services Advanced Settings Kedundancy Services Advanced Settings Redundancy Services Advanced Settings Redundancy Services Advanced Settings Redundancy Services Advanced Settings Redundancy Services Advanced Settings Redundancy Services Services Redundancy Services Services Services Services Services Services Redundancy Services Servic		indan	ncy t controllers: Controller IP Address 10.10.234.100 Delete	Controller TCP Port 10001	Start Local Port 0
Set Defaults				Apply	OK Cancel

- In the **Redundancy** pane, specify the following Redundant XRT Controller-related settings:
 - Click Add and specify the desired parameters for the Redundant XRT Controller being added.
 - Controller IP Address

Enter the IP Address of the XRT Controller that will be used as a Redundant XRT Controller.

Controller TCP Port

Enter the port number of the Redundant XRT Controller to be used for connections via TCP (10001, by default).

Start Local Port

Enter the local port of the PC with TRBOnet Dispatch Software. The value 0 (default) means that a random port will be used.

 Click **Test** to check the connection to the Redundant XRT Controller. If the test is successful, you'll see the information on the XRT Controller you are connected to, such as Serial number, Firmware version, and other relevant information.

3.7.15 Adding a WAVE 5000 Controller

Before creating a connection to the Wave controller, make sure the Wave server is configured to allow 3rd party applications to connect with a Neocom Software-specified license key.

- In the **Radio Systems** pane, click **Add**. Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click Add WAVE 5000 Controller.



Configuration	WAVE 5000 controller	#1		
🔗 Service				
S Network	Name:	WAVE 5000 controller #	1	
Redundancy	Connection:			
Remote Access Restriction	Use proxy for connect	tion		
Radio Systems	Controller IP Address:	10.10.150.110	*	
Services	Controller Port:	4502	÷	
WAVE 5000 controller #1	TRBOnet Local Port:	0	÷	
	User Name:	test4		
	Password:	•••••		
	Profile:	all-channels		*
		Test		
Set Defaults		Apply	ОК	Cancel

- In the **Wave Controller** pane, specify the following Wave controllerrelated parameters:
 - Name

Enter a name for the Wave controller. This name will be displayed in the Dispatch Console.

Use proxy for connection

Select this option to use a proxy server to connect to the Wave controller.

Controller IP Address

Enter, or select from the list, the IP Address of the Wave controller.

Controller Port

Enter the port number of the Wave controller.

Local Port

Enter the local port number that will be used by TRBOnet Agent to establish a connection to the Wave controller.

User Name

Enter the user name. For the user name, refer to the Wave server configuration.

Password

Enter the password for the user. For the password, refer to the Wave server configuration.

Profile

From the drop-down list, select the profile to be used on the Wave server.

Test

Click this button to check the connection to the Wave controller.



4 TRBOnet Server configuration

This section describes how to connect TRBOnet Agent to TRBOnet Server.

To start TRBOnet Server, click the corresponding shortcut on the desktop, or click **Start > All Programs > Neocom Software > TRBOnet Server x.x**

4.1 Adding a Remote Agent

• In the **Configuration** pane, select **Remote Agents**.

Configuration		Remote Agents			
III Slot #2	^				
Local Slots		Registered remote Agents:			
CP1		Agent Name	IP Address	Port	Redundancy
Advanced Settings		Agent #1	10.10.110.190	4020	No
DDMS service					
Advanced Setting					
MNIS data service					
Advanced Setting					
Audio Paths					
🖵 PTT over Cellular					
TRBOnet.Mobile gateway					
Remote Agents					
Agent #1					
🐺 🛱 Redundancy					
Friendly Servers					
7 Telephony					
∲ Data Sources					
🔀 Email					
SMS Notifications				ſ	
C >	•	Add Delete			Test
		Г			
Set Defaults			Apply	OK	Cancel

• In the **Remote Agents** pane, click **Add**.

Configuration	Agent #1		
Advanced Setting A	Agent Name:	Agent #1	
Advanced Setting	IP Address:	10.10.110.190	
🖵 PTT over Cellular	Port:	4020 🗘	
Advanced Settings	Password:		Test
C Teltonika	 Use all services 		
Remote Agents	Use selected ser	vices	
Redundancy			
Friendly Servers			
Advanced Settings			
Mathematical PBX Server			
1 Data Sources			
Email			
SMS Notifications			
Push Notifications			
🗔 License			
< >	Load services f	rom agent	
Set Defaults		Apply	OK Cance

In the Agent pane, specify the following parameters:

• Agent Name

Enter a name for the remote agent. This name will be displayed in the Dispatch Console.



• IP Address

Enter the IP address of the TRBOnet Agent.

Note: If both TRBOnet Server and Agent are installed on the same PC, then select **127.0.0.1** (Loopback Pseudo-Interface).

• Port

Enter the local port number that will be used by TRBOnet Server to accept connections from the remote agent.

• Password

Enter the password, if the connection to TRBOnet Agent is password-protected.

• Click **Test** to check the connection to the remote agent.

• Use all services

Choose this option so that all available services will be used on the remote agent.

• Use selected services

Choose this option and click the **Load services from agent** link to load services available on the remote agent.

4.2 Redundancy

A Redundant remote agent will be used when a connection to the Main remote agent fails.

• In the **Configuration** pane, under the corresponding **Agent**, select **Redundancy**.

Configuration	Redundancy							
	Redundant agents:							
Local Slots		- recu	unua	-				
				Name	IP Address		Port	
		1	\checkmark	Backup Agent 1	10.10.110.1	.92	4020	
Privacy		2	\checkmark	Backup Agent 2	10.10.110.1	.01	4020	
DDMS service								
Advanced Setting								
MNIS data service								
Advanced Setting								
Audio Paths								
PTT over Cellular								
🛄 TRBOnet.Mobile gateway								
Remote Agents								
Agent #1								
🗰 🛊 Redundancy								
Friendly Servers								
🔞 Telephony								
🜵 Data Sources								
🔀 Email								
SMS Notifications		-						
<pre>A there a </pre>	*		Add	Edit	Delete		Test	
					-			
Set Defaults					Apply	ОК		Cancel

• In the **Redundancy** pane, click **Add**.



Remote Agent		×				
Agent Name:	Backup Agent 2					
IP Address:	10.10.110.101					
Port:	4020 ‡					
Password:		Test				
Use all services Use selected services Service Name						
Load services from agent OK Cancel						

- In the **Remote Agent** dialog box, specify the following parameters:
- Agent Name

Enter a name of the redundant remote agent.

• IP Address

Enter the IP address of the redundant remote agent.

• Port

Enter the local port number that will be used by TRBOnet Server to accept connections from the redundant remote agent.

• Password

Enter the password, if the connection to TRBOnet Agent is password-protected.

- Click **Test** to check the connection to the redundant remote agent.
- Use all services

Choose this option so that all available services will be used on the redundant remote agent.

• Use selected services

Choose this option and click the **Load services from agent** link to load services available on redundant the remote agent.

• Click **OK** to add a redundant remote agent to the system.