



# **TRBOnet Enterprise/PLUS** IP Site Connect

**Deployment Guide** 

World HQ

Neocom Software 8th Line 29, Vasilyevsky Island St. Petersburg, 199004, Russia US Office

Internet

Neocom Software 15200 Jog Road, Suite 202 Ema Delray Beach, FL 33446, USA WM

Email: info@trbonet.com Ameri WWW.TRBONET.COM APAC

Telephone EMEA: +44 203 608 0598 Americas: +1 872 222 8726 APAC: +61 28 6078325 MOTOROLA

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# Contents

1	Introduction		1
	1.1	About This Document	1
	1.2	About TRBOnet	1
	1.3	Contacts	1
2	Syster	m Components	2
	2.1	TRBOnet Enterprise/Plus	2
	2.2	IP Connection (Wireline Connection)	2
	2.3	Wireless Connection (Control Stations)	2
	2.4	Wide Area Channels	2
	2.5	Local Channels	2
3	Syster	m Topology	3
	3.1	Wireless Connection	3
	3.2	IP Connection	5
	3.3	NAI IP Connection	8
4	Config	guring MOTOTRBO Equipment	10
	4.1	Configuring a Repeater	10
	4.2	Configuring a Control Station	15
	4.3	Configuring a Subscriber Radio	21
	4.4	Configuring MOTOTRBO DDMS	29
	4.5	Configuring MOTOTRBO MNIS	31
5	Configuring TRBOnet Enterprise		
	5.1	Configuring TRBOnet Server	
	5.2	Configuring TRBOnet Dispatch Console	51



# **1** Introduction

# **1.1 About This Document**

The information in this guide is intended for administrators setting up evaluation and proof-of-concept deployments of MOTOTRBO Dispatch over IP solutions. This document describes the steps required to configure communication with a MOTOTRBO IP Site Connect (IPSC) system.

For more comprehensive information on the Neocom TRBOnet family of radio network software tools, refer to the <u>Documentation section</u> of our web site.

# 1.2 About TRBOnet

TRBOnet is a suite of professional applications for MOTOTRBO digital two-way radio networks. TRBOnet manages voice and data communication paths across network endpoints. It provides a unified graphical dispatcher workbench interface for the entire range of workforce fleet management tasks.

# 1.3 Contacts

Region	Phone	Email & Support
EMEA	+44 203 608 0598	info@trbonet.com — general and commercial inquiries
Americas	+1 872 222 8726	support@trbonet.com — technical support
APAC +61 28 607 8325 http://kb.trbonet.cc knowledge base		<u>http://kb.trbonet.com</u> — online knowledge base

# 2 System Components

software

# 2.1 TRBOnet Enterprise/Plus

The TRBOnet software consists of several modules which enable you to build enterprise dispatch solutions of different levels of complexity and redundancy. The first step in implementing the best solution is determining the topology for the customer's system; then identifying the combination of modules to implement the best customer solution.

# 2.2 IP Connection (Wireline Connection)

TRBOnet Server can be connected to a two-way radio system via an IP connection creating a direct communications path for all voice and data information between them. The topologies can be in the form of a LAN, WAN, or VLAN and/or any combination thereof.

# 2.3 Wireless Connection (Control Stations)

If TRBOnet Server doesn't have an IP connection to the radio system, it can be connected via control stations (also known as control radios or donor radios). Two control stations are required to transmit and receive voice and data to/from a repeater, that is, one control station per time slot.

# 2.4 Wide Area Channels

A wide area channel (**WAC**, Slot 1 or 2, or both) is a repeater's channel configured so that a call on the wide area channel is repeated to all the sites within an IPSC system.

# 2.5 Local Channels

A local channel (**LC**, also known as Local Slot) is a repeater's channel that is used only on the local site, that is, voice and data are transmitted only at the local site and not to any other site in the IPSC system. Note that if a slot on one repeater is used as a local slot, this slot will also be used as a local slot on the other repeaters within an IPSC system.



# 3 System Topology

An IPSC system is a digital conventional two-way MOTOTRBO system that provides two wide-area channels per repeater to increase your communications RF coverage area. It is possible to connect up to 15 repeaters (each geographical location of a repeater is called a "site") into one system using an IP connection, which allows increasing the coverage area for voice and data transmissions. The main objective of an IPSC system is to provide a much more reliable connection between radio units and control centers regardless of the geographical distance between them.

You can configure the IPSC system in a number of different topologies depending on your needs and requirements.

# 3.1 Wireless Connection

This configuration is recommended when there is no IP connection between the TRBOnet Server and the repeater. Two control stations will be required to transmit and receive voice and data, that is, one control station per time slot. Depending on whether you are using local slots on your repeaters, the configurations can be as follows.

# 3.1.1 Wireless Connection (WAC)

Below is an example of the IPSC system configuration with multiple repeaters and no local slots (wide-area only).



Figure 1: Wireless Connection (WAC)



Below is a table with the features supported in this configuration.

Feature	Availability
Voice Dispatch	Yes
Voice Recording	Yes
Data	Yes

Table 1: Supported features for Wireless Connection (WAC)

# 3.1.2 Wireless Connection (Local Slots)

Below is an example of the IPSC system configuration with multiple repeaters, where Slot 1 is a WAC and Slot 2 is a local slot to all repeater sites.



Figure 2: Wireless Connection (Local Slots)

Below is a table with the features supported in this configuration.

Table 2: Supported features for Wireless Connection (Local Slots)

Feature	Availability
Voice Dispatch	Yes
Voice Recording	Yes
Data	Yes



# **3.2 IP Connection**

In these configurations, TRBOnet Server has an IP connection to a master repeater. Depending on whether you are using local slots on your repeaters, the configurations can be as follows.

# 3.2.1 IP Connection (WAC)

Below is an example of the IPSC system configuration with two repeaters and no local slots (wide-area only).



Figure 3: IP Connection (WAC)

# Below is a table with the features supported in this configuration.

Feature	Availability
Voice Dispatch	Yes
Voice Recording	Yes
Data	Yes



# 3.2.2 IP Connection (Local Slots)

Below is an example of the IPSC system configuration with two repeaters and local slots (in this example, Slot 2 is used as a local slot on both repeaters).



Figure 4: IP Connection (Local Slots)

Below is a table with the features supported in this configuration.

Feature	Availability
Voice Dispatch	WAC only *
Voice Recording	Yes
Data	WAC - yes; LC - RX only

\* To use the Voice Dispatch feature on **local slots**, TRBOnet PLUS must be used with the Network Application Interface Voice protocol enabled on the repeaters (see Figure 7).



# **3.2.3 IP Connection with Control Stations (Local Slots)**

In this configuration, two Control Stations are used to transmit/receive voice and data to/from the local slots.



Figure 5: IP Connection with Control Stations (Local Slots)

Below is a table with the features supported in this configuration.

Table 5: Supported features for IP Connection with Control Stations (Loca	l Slots)
---	----------

Feature	Availability
Voice Dispatch	Yes
Voice Recording	Yes
Data	Yes



# 3.3 NAI IP Connection

You can use NAI Voice and NAI Data protocols to avoid using control stations to transmit/receive voice and data to/from the local slots. Note that TRBOnet PLUS is required to provide the Voice Dispatch feature in the systems with local slots.



# 3.3.1 NAI IP Connection (WAC)

Figure 6: NAI IP Connection (WAC)

#### Below is a table with the features supported in this configuration.

#### Table 6: Supported features for NAI IP Connection (WAC)

Feature	Availability
Voice Dispatch	Yes
Voice Recording	Yes
Data	Yes



# 3.3.2 NAI IP Connection (Local Slots)



Figure 7: NAI IP Connection (Local Slots)

# Below is a table with the features supported in this configuration.

#### Table 7: Supported features for NAI IP Connection (Local Slots)

Feature	Availability
Voice Dispatch	For LCs, requires using TRBOnet PLUS
Voice Recording	Yes
Data	Yes



# 4 **Configuring MOTOTRBO Equipment**

This section describes how to configure MOTOTRBO equipment, such as repeaters, control stations and subscriber radios, using MOTOTRBO Customer Programming Software (CPS).

- Launch MOTOTRBO CPS.
- On the menu bar, select View > Expert.

# 4.1 **Configuring a Repeater**

This section describes how to configure a repeater to be used in an IPSC system.

- Connect your repeater to the PC via a programming cable (USB).
   Or, if an IP connection is available and the network parameters are known (Remote > IP System Settings), establish a connection to your remote repeater (Remote > Connect).
- Click the **Read** button on the toolbar.



#### 4.1.1 General Settings

• In the left pane, select General Settings.

DR 3000     General Settings	General Settings
	Top CWID Voting Microphone
Network	Radio Name IPSC Master
Link Establishment	Radio ID 1002
🖓 Talkgroups	SIT (ms) 6000 ÷
🖻 😋 Channels Ė 😋 Zone1	Group Call Hang Time (ms) 3000
n.e. IPSC	Private Call Hang Time (ms) 4000 ÷
	Emergency Call Hang Time (ms)
	Call Hang Time (sec) 3 +
	Repeat Gain (dB) 0.0 📩
	Antenna Relay Delay Timer (ms)
	TX Low Power (W) 3.0 🛨
	TX High Power (W) 3.0 💼
	DC TX Power (W)
	Disable All LEDs

• In the **General Settings** pane, specify the **Radio ID** of the repeater. This must be a unique Peer ID among the repeaters in a radio system and also not in conflict with any other third party application Peer ID. The recommended range is from 1 to 255.



# 4.1.2 Network

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

DR 3000	Network
	Top Radio Network Network Setting IP Repeater Programming
Link Establishment	Radio IP 192 . 168 . 40 . 1 Accessory IP 192.168.40.2
<b>Ç</b> ≱ð Talkgroups ⊕ <mark>(</mark> Channels	Netmask 255 255 255 0 Radio Network
	CAI Network 12 - CAI Group Network 225 -
	Network Setting
	DHCP  Ethernet IP 10 . 10 . 102 . 131 Gateway IP 10 . 10 . 0 . 1
	Gateway Netmask       255       255       0       0         IP Repeater Programming

- In the **Network** pane, specify the following parameters:
  - Radio IP

This is the IP address used by the repeater to communicate with the PC (using the USB connection) and has to be unique. To avoid conflicts in case there are several stations connected with USB, you can change the third octet of the address.

#### **Network Setting**

If your radio system is on a private network, specify the following network parameters:

Ethernet IP

This is the LAN address of the repeater that can be obtained from your network details; the last octet of the IP address must be unique for the system's local network.

Gateway IP

This is the address of an upstream system (router). If a router exists, specify its LAN address here.

#### Gateway Netmask

Set the Subnet Mask, for example, **255.255.255.0** or **255.255.0.0** depending on the subnet.

#### **IP Repeater Programming**

Enable

Select this checkbox to provide the ability to remotely program the repeater.



# 4.1.3 Link Establishment

• In the left pane, select Link Establishment.

DR 3000	Link Establishment		
Accessories	Top IP Site Connect Capacity Plus		
Network	Link Type Master	^	•
Sites	Authentication Key		
⊕ i Channels	Master IP 10 . 10 . 102 . 131		
	Master UDP Port 50011		ł
	UDP Port 50011 ÷		
	Peer Firewall Open Timer (sec) 6	- 1	
	IP Site Connect		
		~	,

- In the Link Establishment pane, specify the following parameters:
  - Link Type

From the drop-down list, select **Master** if you are configuring a master repeater, or **Peer** if you are configuring a peer repeater.

Authentication Key

Specify the authentication key that can optionally be used to access the repeater.

Master IP

Enter the Ethernet IP address of the master repeater.

Master UDP Port

Enter the UDP port number of the master repeater.

UDP Port

Enter the UDP port number of this repeater. If you are configuring a master repeater, set this value the same as that for **Master UDP Port**.



# 4.1.4 Channel

• In the left pane, under **Channels**, right-click **Zone** and from the drop-down menu, select **Add** > **Digital Channel**.

DR 3000	gs	Zone1											
			Drag channels to desired position										
Security     Security     Network     Link Establishn     Orego Sites	Link Establishment		nent		Position	Channel Name	Channel Bandwidth (kHz)	Squelch	Squelch Level	Wireline Mute GPIO Pin	Voice Emphasis	Color Code	
Sites		▶ <mark>n</mark> ø	1	IPSC	N/A	N/A	6 📩	N/A	N/A	1	÷		
E Channels													
	Add	•	Analog	g Channel		Shift+F5							
	Cut Ctr	+X	Digital	Channel		Shift+F6							
	Copy Ctr	+C	Dynar	nic Mixed Mode Ch	annel	Shift+F11	L						
	Paste Ctr	+V	Capad	city Plus Voice Cha	nnel	Shift+F8	L						
	Delete	Del	Capad	city Plus Data Chan	inel	Shift+F9	L						
		F2	Capad	city Plus Voice Cha	nnel (Linked) C	trl+Shift+F8							
			Capac	city Plus Data Chan	nel (Linked) C	trl+Shift+F9							
	Sort	+					-				F		

• In the left pane, right-click the channel you have just added and from the drop-down menu select **Rename**, or select the channel and just press **F2** on the keyboard. Enter a new name for the channel, for example, "IPSC".

DR 3000     General Settings     General Settings     Accessories	IPSC
Security     Security     Security     Sites	Color Code 1 🔄
Channels	System Controller Mode
	RSSI Threshold (dBm) -100 -

- In the **IPSC** pane, specify the following channel-related parameters.
  - Color Code

Specify the color code for the repeater. Note that the color codes on the radios must match the color code of the repeater.

Network Application Interface Phone

If this option is selected, in TRBOnet Server, navigate to the repeaters options (default **Radio Networks > Digital Systems > Repeater #1**) and select the **Use NAI Voice** checkbox. See section <u>5.1.1, Connecting a Master</u> <u>Repeater</u>. This feature is used in the schemes depicted in Figures 6-7.

#### IP Site Connect

From the drop-down-list, select **Slot 1 & Slot 2** if there are no local channels on the repeater (see figures 1, 3, 6 in section <u>3</u>, <u>System Topology</u>). If you are going to use a local channel on the repeater, select **Slot 1** or **Slot 2** that will be used as a wide area channel, whereas the remaining slot will be used as a local channel (see figures 2, 4, 5, 7 in section <u>3</u>, <u>System Topology</u>).



DR 3000     General Settings		IPSC
	Τορ	Enhanced CPS RX IX
Link Establishment	RX	ТХ
Sites	Frequency (MHz)     146.420000	Offset (MHz) 0.00000 Copy Ref Frequency (MHz) 167.420000
CaPlus_V	Ref Frequency Default	Power Level High TOT (sec) 80 -

- In the **RX Frequency** box, enter the radio frequency the repeater will receive on.
- In the **TX Frequency** box, enter the radio frequency the repeater will transmit on.

Note: Make sure that the channel you have added is the first in the list of channels as the repeater will work on the channel which is on top of the list.

								Zoi	ne1							
General Settings								20								
🞈 Accessories	Drag channels to desired position															
Security     Security     Network     Link Establishment     Sites		Position	Channel Name	Channel Bandwidth (kHz)	Squeich	Squ Lev		Wireline Mute GPIO Pin	Voice Emphasis	Colo Code		Network Application Interface Phone	System Controller Mode	IP Site Connect	Messaging Delay	RSSI Three (dBm
	▶ <b>n.e</b>	$\bigcirc$	IPSC	N/A	N/A	6	÷	N/A	N/A	1	*			Slot 1 & Slot 2	Normal	-100
E Channels	<b>C</b> 22	2	CaPlus_V	N/A	N/A	6	÷	N/A	N/A	1	+		Γ	N/A	N/A	-60
È- <mark>E Zone1</mark> - n.⊛ IPSC - ⊕ ☆ CaPlus_V																
	•															

• Once you have finished configuring the desired repeater parameters, click the **Write** button on the toolbar.





# 4.2 Configuring a Control Station

This section describes how to configure the radio to be used as a control station in an IPSC system. Control stations are used in the schemes depicted in Figures 1, 2, 5.

- Connect your radio to the PC via a programming cable.
- Turn on the radio.
- Click the **Read** button on the toolbar.

🖃 🖷 🥫 DP480	01 ^	General Settings	
	General Settings	General Settings	
	Accessories	Top CWID Audio Profile Microphone Backlight Battery Saver Alerts Over-the	-Air Proc
🖬 🗖 🗖	Buttons	Permistent L PPP Degueste L and Worker - Downs Lin - Degeword and Lack - Front Programm	ing Dee
🖂 1	Text Messages	Persistent LRRP Requests Lone Worker Power Up Password and Lock Front Programm	ing Pas
101 1	Telemetry	Delete All 5 Tone Radio ID	
····· 🛅 🛚	Menu		^
<b>0</b> 9	Security	Radio Name Control Station	
	Network	Select	
	Announcement	Select	
🛓 👘 💼 🤳	Job Tickets	Welcome Image	
. 📩 🗠 💼 s	Signaling Systems	Remove	
🛓 🗄 🖬 💼 E	Encoder		
Ė 🚞 🛙	Decoder		
Ė 🚞 🤇	Contacts	Radio ID 64250	
🛓 🕂 💼 F	RX Group Lists		× *
Ė 👝 d	Channele V	5	>

# 4.2.1 General Settings

- In the left pane, select General Settings.
- In the General Settings pane, specify the following:
  - Radio ID

Enter the Radio ID of the control station. The default value is **64250**.

Note: This value will then be used as the control station's **Radio ID** when connecting a control station to the TRBOnet Server. See section <u>5.1.2, Connecting a Control</u> <u>Station</u>.

Control Station #1							
Name:	Control Station #1						
Radio ID:	64250						
IP Address:	192.168.98.2 🔻 🕫						
Mode:	IP Site Connect						
System Identifier:	Department 1						



# 4.2.2 Network

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

DP4801	Network	
Accessories	Top Radio Network Services Control Station IP Site Connect Bluetooth Bluetooth Serial Port Profile Dat USB HID Data Routing	ta i
····· 🔯 Text Messages ····· 💷 Telemetry ····· 💼 Menu	Radio IP 192 . 168 . 98 . 1	^
Security     Network     Notwork     Notwork     Nonuncement	Accessory IP 192.168.98.2 Netmask 255.255.256.0	
	Bluetooth IP 192.168.99.1 Bluetooth Accessory IP 192.168.99.2 USB DNS-SD Interval 90 sec V	
È È Decoder È È Contacts È È RX Group Lists	Radio Network	
⊕ 📄 Channels ⊕ 📄 Scan ⊕ 📄 Roam	CAI Network 12 ÷	
Em Capacity Plus	CAI Group Network 225 ÷ Max TX PDU Size (bytes) 750 ▼	
	Telemetry UDP Port 4008 🗄	~

• In the **Network** pane, specify the following parameters:

#### Radio IP

This is the IP address used by the radio to communicate with the PC (using the USB connection) and has to be unique. To avoid conflicts in case there are several stations connected with USB, you can change the third octet of the address.

#### Accessory IP

This is the IP address that is given to the PC by the radio that is connected to it.

Note: This value will then be used as the control station's **IP Address** when connecting a control station to the TRBOnet Server. See section <u>5.1.2, Connecting a Control</u> <u>Station</u>.

Control Station #1	
Name:	Control Station #1
Radio ID:	64250
IP Address:	192.168.98.2 🔻 🕫
Mode:	IP Site Connect
System Identifier:	Department 1

#### Forward to PC

From the drop-down list, select Via USB.



# 4.2.3 Contacts

• In the left pane, select **Contacts** > **Digital** and right-click it. Click **Add** > and from the drop-down menu select the type of a call you want to add a contact for.

⊟ [		801 General Setting	^ ps							Di	gital			
	Q	Accessories Buttons Text Messages			Contact I	Name		Call ID	>	Connection Type	Route Type	Call Receive Tone	Ring Style	Text Message Alert Tone
	(101)	-		▶n.şð	Police			10	÷	USB	Regular		No Style	Repetitive
					Firemen			20		USB	Regular		No Style	Repetitive
		Security									-			
	-	Network												
		Announcement												
¢.	] 🚞	Job Tickets												
Ē	] 🚞	Signaling Syste	ems											
Ē	] 🚞	Encoder												
Ē	] 🚞	Decoder												
Ė	] 💼	Contacts												
	÷	💼 5 Tone												
	÷	- 🚞 MDC												
	÷	- 🚞 Quik-Call												
	<u> </u>		Add	I	•	Group Call	Ctrl+F7							
						Private Call	Ctrl+F8							
				Ctrl+X										
	÷	- 🚞 Ca	Сору	Ctrl+C		All Call	Ctrl+F9							
	÷	_	Paste	Ctrl+V		Dispatch Call	Ctrl+F10							
Ē	] 🚞	RX Grou	Sort		•	PC Call	Ctrl+F11							
Ę	] 🚞	Channel.			_									•

• Enter the **Contact Name** and **Call ID** for the contacts you have added.

#### 4.2.4 RX Group Lists

 In the left pane, select RX Group Lists > Digital. Right-click it, and choose Add > RX Group List.

		_	
	Text Messages	^	List1
	101) Telemetry		
	Menu		
	Security		Available Members
	Network		Police Firemen
	Announcement		
÷	Job Tickets		
÷	🚞 Signaling Systems		Add >>
÷	Encoder		
÷	Decoder		<< Remove
÷	Contacts		
ģ (	RX Group Lists		
	🕂 🖳 Digital		
	🔤 👌		
	🕂 📄 Capacity Plus		
	🕂 🖳 Flexible RX List		
÷	Channels		
÷	🚞 Scan		
ė (	Roam	¥	

- In the left pane, select the group you have added.
- In the right pane, in the **Available** list select a group, or multiple groups using the SHIFT key, and click the **Add** button.

As a result, the group(s) will appear in the **Members** list.



# 4.2.5 Channel

• In the left pane, select **Channels**. Right-click it, and choose **Add** > **Zone**.

		Telemetry Menu	^					Channels	
	- <b>-</b>	Security Network						Drag zones to desired position Set Voice Files Clear Voice Files	
E		Job Tickets			Pos	sition	Zone Name	Voice Announcement File	٦
E	9 💼	Signaling Syst	tems				Zone1	None	
E	Ð 🚞	Encoder		٢	2		Channel Pool	None	
E	] 💼 ] 💼	Decoder Contacts RX Group List	_						
		a Zon	Add			Zon	e Ctrl+F2		
		<b></b>	Cut	Ctrl+X	ſ				~
		n.e	Сору	Ctrl+C				, ,	
	÷.	- 🕥 Cha	Paste	Ctrl+V					
E	9 💼	Scan Roam Capacity Plus	Sort 🗸		•			·	~

In the left pane, select the zone you have added. Right-click it, and choose
 Add > Digital Channel.

	4801 General Settings						Z	one1						
	Correspondence     Correspo			Drag channels to desired position           Set Voice Files         Clear Voice Files										
TE				Position	Channel Name	Voice Annour	ncement File		Channel Bandwidth (KHz)	Dual Capacity Direct Mode	Timing Leader Preference	Scan L		
	Announcement		ne ne	1	IPSC1 IPSC2	None			N/A N/A		Eligible	N/A N/A		
	Signaling Systems Encoder Decoder Contacts RX Group Lists Channels											Þ		
÷	i = 1	Copy Ct	trl+X trl+C		nalog Channel ligital Channel Capacity Plus Person: Capacity Plus Person:		Shift+F5 Shift+F6 Shift+F7 Ctrl+Shift+F7					^		
	Roam Capacity Plu		Del F2	•	Tone Channel		Shift+F4					~		

• In the left pane, select the channel (for example, named IPSC1) that has previously been added.



	D	P4801	17004
		General Settings	IPSC1
		Accessories	Top RX IX
		Buttons	
		Text Messages	Voice Announcement File None
		Telemetry Menu	Dual Capacity Direct Mode
		Security	Timing Leader Preference Eligible v
		Network	
		Announcement	Scan/Roam List Roam List1
E	Ð 🕻		Auto Scan
E	Ð 🖸	Signaling Systems Encoder	Color Code 1 ÷
	b C	Decoder	
E	÷	Contacts	Repeater/Time Stot) 1 🛫
E	Ð 🖸	RX Group Lists	Phone System Phone_100
E		Channels	
	E	Zone1	ARIS On System Change 💌
		IPSC1	Enhanced GPS
	9 	- 🕤 Channel Pool Channel Pool	Window Size
	÷	_	
		Capacity Plus	Privacy)
			Privacy Alas Privacy Key1
			AES Alias None 🗸
			RAS Aliss None -
			Option Board)
			Option Board Trunking
			Lone Worker
			Allow Talkaround
			(IP Ste Connect)
			P Ste Connect M

• In the right pane, specify the following parameters:

#### Color Code

Enter the color code for the radio. Note that the color codes on the radios must match the color code of the repeater.

#### Repeater/Time Slot

Select the time slot of the repeater the radio operates on.

#### Privacy

Select this option to allow privacy on the channel.

Note: The **Privacy** option is available if the Basic or Enhanced Privacy Type has been selected in the Security section.

#### Privacy Alias

From the drop-down list, select the Key Alias.

Note: The **Privacy Alias** option is available if the Enhanced Privacy Type has been selected in the Security section. The same Key Alias must be used on all system nodes (repeaters and radios).

#### Option Board

Select this option to enable the option board capability on the channel. The option board must be installed and enabled in the radio otherwise this feature will not function.

#### IP Site Connect

Select this option to configure the channel as an IP Site Connect channel.



⊟ 🏮	DP4801	1 ieneral Settings		IPSC1			
		ccessories		TOD RX TX			
	- 🔳 🖪	uttons					
	🖂 Te	ext Messages	RX			ТХ	^
		elemetry					
	— 🛅 м	lenu		Offset (MHz)			
	🗊 🕶 Se		Frequency (MHz) 167.420000	0.000000	Frequency	(MHz) 146.420000	
	No No		167.420000		(Trequency	146.420000	
		nnouncement		Сору			
Þ	_	ob Tickets	Ref Frequency Default		Ref Frequency	Default 💌	
Ē	_	ignaling Systems	Group List List1		Contact Name	Police	
±	_	ncoder					
Ē		ecoder	Emergency Alarm Indication		Emergency System	None	
Ē		ontacts	Emergency Alarm Ack		VOX	E	
Ē	_	X Group Lists	_				
P	_	hannels	Emergency Call Indication		Power Level	Low	
	- <b>-</b>	Zone1			TOT (sec)	60 ÷	
		IPSC1			101 (300)	60 -	
		Channel Pool			TOT Rekey Delay (sec)	0 🔅	
L L		can			Allow Interruption	<b>F</b>	
Ē	_	oam			Allow Interruption	·	
Ē	_	apacity Plus			TX Interruptible Frequencies	V	
		apacity rido			Admit Criteria	Color Code Free	
			<				>

- In the **RX Frequency** box, specify the radio frequency the radio will receive on.
- In the **TX Frequency** box, specify the radio frequency the radio will transmit on.
  - Note: The RX and TX frequencies of the radio must be the opposite to the RX and TX frequencies of the repeater the radio operates on. In other words, the RX frequency of the repeater must be the same as the TX frequency of the radio; the TX frequency of the repeater must be the same as the RX frequency of the radio.

#### RX Group List

Select the Group list you have specified in section <u>4.2.4, RX Group Lists</u>.

TX Contact Name

Select the contact to which a call will be initiated on the channel when pressing the PTT button. The contact is selected from the Contact list you have created in section <u>4.2.3, Contacts</u>.

• Once you have finished configuring the desired radio parameters, click the **Write** button on the toolbar.



# 4.3 Configuring a Subscriber Radio

This section describes how to configure a subscriber radio to be used in an IPSC system.

- Connect your radio to the PC via a programming cable.
- Turn on the radio.
- Click the **Read** button on the toolbar.

<b></b>	DP4801	General Settings	
	Accessories	Top CWID Audio Profile Microphone Backlight Battery Saver Alerts Over-the-Air Programming Persistent LRRP	' Reque
	🖂 Text Messages	Lone Worker Power Up Password and Lock Front Programming Password Delete All 5 Tone Radio ID	
	💷 Telemetry 🛅 Menu	Radio Name Radio 235	^
	Security	Select	
	Announcement	Welcome Image Remove	
	Job Tickets     Job Tickets     Signaling Systems		
	Encoder	Radio ID 235	
	Decoder     Contacts	GPS V	
	RX Group Lists     Channels	GNSS GPSIQZSS	
<	Scan V	Private Calls	~

# 4.3.1 General Settings

- In the left pane, select General Settings.
- In the General Settings pane, specify the following:
  - Radio ID

Enter the Radio ID of the radio. This ID is used by other radios to contact this radio, for instance, communicating via a private call or text message.

GPS

Select this checkbox to track the location of the radio if the radio is equipped with a GPS module.

Private calls

Select this checkbox to enable the initiation of a Private Call on a digital channel. When disabled, a prohibit tone will sound when the user tries to initiate a Private Call.



# 4.3.2 Network

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

DP48	01 General Settings				Ne	etwork			
	Accessories Buttons	<u>Top</u> USB	Radio Network HID Data Routing	Services	Control Station	IP Site Connect	<u>Bluetooth</u>	Bluetooth Serial Port Profile Data	<u>ı</u> F
	Text Messages Telemetry Menu Security				Radio II Accessory II	9 192 . 168 P 192.168.10.2	. 10 . 1	1	^
<b>⊘</b> ≫	Network Announcement Job Tickets				Bluetooth IF	k 255.255.255.0 P 192.168.11.1			
	Signaling Systems Encoder Decoder Contacts			I	Bluetooth Accessory II Radio	P 192.168.11.2		•	
	RX Group Lists Channels Scan				CAI Networ	12 •			
	Roam Capacity Plus			Ма	x TX PDU Size (bytes Telemetry UDP Por				
					Forward to PC	Disabled	•		
					ARS Radio II	64250 +		_	
					ARS UDP Por	t 4005 ᅷ			~
		1							۳.

- In the **Network** pane, specify the following parameters.
  - Radio IP

This is the IP address used by the radio to communicate with the PC (using the USB connection) and has to be unique. To avoid conflicts in case there are several stations connected with USB, you can change the third octet of the address.

Forward to PC

From the drop-down list, select **Disabled**.

ARS Radio ID

Enter the Radio ID of the ARS server.

TMS Radio ID

Enter the Radio ID of the TMS server.

Note: The ARS Radio ID and TMS Radio ID must be the same as either TRBOnet Radio ID in the Repeater settings if the master repeater is connected to TRBOnet Server via a wireline connection (see section 5.1.1, Adding a Master Repeater), or Radio ID in the Control Station settings if the control station is connected to TRBOnet Server via USB (see section 5.1.2, Adding a Control Station), or
MNIS Application ID, if MNIS is enabled (see section 4.5, Configuring MOTOTRBO MNIS). The recommended value is 64250 for both parameters.



# 4.3.3 Contacts

• In the left pane, select **Contacts** > **Digital** and right-click it. Click **Add** > and from the drop-down menu select the type of a call you want to add a contact for.

1	DP4	General Settir	ngs							D	oigital			
		Accessories Buttons Text Message	-		Contac	t Name		Call	$\supset$	Connection Type	Route Type	Call Receive Tone	Ring Style	Text Message Alert Tone
	(101)	Telemetry		►n30					•					
	- 1	Menu		лаð	Firemen			20	÷	USB	Regular		No Style	Repetitive
-	<b></b>	Security												
		Network												
	<b>0</b> ))	Announcemer	nt											
ŧ	- 🚞	Job Tickets												
Đ	- 💼	Signaling Syst	tems											
Đ	🚞	Encoder												
Ð	🚞	Decoder												
÷	- 😑	Contacts												
	÷.	📄 5 Tone												
	÷	mdc 📄												
	÷	Quik-Ca	a 11											
	B		Add		•	Group Call	Ctrl+F7							
			Cut	Ctrl+X		Private Call	Ctrl+F8							
	÷.			Ctrl+C		All Call	Ctrl+F9							
	÷.	Ph	Paste			Dispatch Call	Ctrl+F10							
Ē.	- 💼	RX Grou			-	PC Call	Ctrl+F11							
			Sort					_						

• Enter the **Contact Name** and **Call ID** for the contacts you have added.

# 4.3.4 RX Group Lists

 In the left pane, select RX Group Lists > Digital. Right-click it, and choose Add > RX Group List.

	Text Messages	^	List1
	Telemetry		
1	Menu		
	Security	- 1	Available Members
	Network		Police Firemen
@))	Announcement		
÷… 🚞	Job Tickets		
÷ 🚞	Signaling Systems		Add >>
😐 💼	Encoder		
÷ 🚞	Decoder		<< Remove
÷ 🚞	Contacts		
- 🔁 🔁	RX Group Lists		
þ			
	😽 👸 🗎 List1		
Ē	Capacity Plus		
÷	··· 📄 Flexible RX List		
÷ 🚞	Channels		
÷ 🚞	Scan		
📥 📥 🤤	Roam	v	

- In the left pane, select the group you have added.
- In the right pane, in the **Available** list select a group, or multiple groups using the SHIFT key, and click the **Add** button.

As a result, the group(s) will appear in the **Members** list.



# 4.3.5 Channels

• In the left pane, select **Channels**. Right-click it, and choose **Add** > **Zone**.

	Telemetry Menu	^				Channels
	Security					Drag zones to desired position
	<ul> <li>Network</li> <li>Announceme</li> </ul>	nt				Set Voice Files Clear Voice Files
± 🚞				Position	Zone Name	Voice Announcement File
÷ 🚞	Signaling Sys	stems	•		Zone1	None
÷ 🚞	Encoder		٢	2	Channel Pool	None
<u>+</u>	Decoder					
÷ 🗎	Contacts RX Group Lis	ata				
	Channels	515				a
T A	- 🔁 Zon	Add		Zoi	ne Ctrl+F2	
		Cut	Ctrl+X			
	n.e	Сору	Ctrl+C			
Ē.	- 👘 Cha	Paste	Ctrl+V			
Ē- 🗎		Sort		-		
÷	Roam	s v		_		~

In the left pane, select the zone you have added. Right-click it, and choose
 Add > Digital Channel.



DP4801				Zor	ne1							
Accessories		Drag channels to desired position           Set Voice Files         Clear Voice Files										
Telemetry     Telemetry     Telemetry     Telemetry     Security     Network		Position	Channel Name	Voice Announcement File	Channel Bandwidth (kHz)	Dual Capacity Direct Mode	Timing Leader Preference	Sca				
	▶nĕ	1	IPSC1	None	N/A		Eligible	N/A				
🕂 – 🚞 Job Tickets	ne	2	IPSC2	None	N/A		Eligible	N/A				
Contacts Co	4											
⊟ <mark>⊇ Zone1</mark>	Add	•	Analog Channel	Shift+F5								
	Cut Ctrl+	< l	Digital Channel	Shift+F6								
🕀 🕥 Chann	Copy Ctrl+	:	Capacity Plus Persor	ality Shift+F7								
	Paste Ctrl+	/	Capacity Plus Persor	ality (Linked) Ctrl+Shift+F7								
E Scan			5 Tone Channel	Shift+F4								
	Delete De Rename F											

• In the left pane, select the first channel (for example, named IPSC1) that has previously been added.



🖃 👘 DP480		IPSC1
	General Settings	
	Accessories	Top RX IX
	Fext Messages	Voice Announcement File None v
	Felemetry	
🔁 M	Menu	Dual Capacity Direct Mode
	Security	Timing Leader Preference Eligible v
	Vetwork	Scan/Roam List1
	Announcement	Scan/Roam List Roam List
	Job Tickets Signaling Systems	Auto Scan
	Encoder	Color Code 1 ÷
	Decoder	
🗄 🧰 c	Contacts	Repeater/Time Slot 1
	RX Group Lists	Phone System Phone_100
	Channels	ARS On System Change
	Zone1	
	no IPSC1	Enhanced GPS
Ē	Channel Pool	Window Size 8 v
🕀 💼 s	Scan	
🗄 🗠 🧰 R	Roam	
🗄 🚞 C	Capacity Plus	Privacy Key1 -
		AES Alias None
		Option Board
		Option Board Trunking
		Lone Worker
		Allow Talkaround
		IP Site Connect)

• In the right pane, specify the following parameters:

#### Scan/Roam List

Select the Roam list you have specified in section 4.3.6, Roam Lists.

Color Code

Enter the color code for the radio. Note that the color codes on the radios must match the color code of the repeater.

#### Repeater/Time Slot

Select one of the repeater time slots.

#### Phone System

Select the phone system you have specified in section 4.3.7, Phone System.

ARS

Select **On System Change** to provide the automated registration for the radio.

#### Privacy

Select this option to allow privacy on the channel.

Note: The **Privacy** option is available if the Basic or Enhanced Privacy Type has been selected in the Security section.

#### Privacy Alias

From the drop-down list, select the Key Alias.

Note: The **Privacy Alias** option is available if the Enhanced Privacy Type has been selected in the Security section. The same Key Alias must be used on all system nodes (repeaters and radios).



#### Option Board

Select this option to enable the option board capability on the channel. The option board must be installed and enabled in the radio otherwise this feature will not function.

#### IP Site Connect

Select this option to configure the channel as an IP Site Connect channel. If this option is selected, you can add the channel to a Roam List (see section 4.3.6, Roam Lists).

8 (	014001		IPSC1			
	General Settings		TOD RX IX			
	Buttons					^
	Text Messages	RX			ТХ	~
	101 Telemetry		Offset (MHz)			
	🛅 Menu		Offset (Miliz)			
	Security	Frequency (MHz) 167.420000	0.00000	Frequency	(MHz) 146.420000	
	Network		Сору			
	Job Tickets	Ref Frequency Default -		Ref Frequency	Default 💌	
E						1
E		Group List List1		Contact Name	Police -	1
E	E Decoder	Emergency Alarm Indication		Emergency System	None	1
E	E Contacts	Emergency Alarm Ack			·	·
E				VOX		- 11
E	Channels	Emergency Call Indication		Power Level	Low	
	Zone1			TOT (sec)	60 ÷	
	ne IPSC1			101 (300)	60 -	
	Channel Pool			TOT Rekey Delay (sec)	0 🗧	
F				Allow Interruption	2	
E	+ 💼 Roam					
E	E Capacity Plus			TX Interruptible Frequencies	V	
				Admit Criteria	Color Code Free	~
		<				>

- In the **RX Frequency** box, specify the radio frequency the radio will receive on.
- In the **TX Frequency** box, specify the radio frequency the radio will transmit on.
  - Note: The RX and TX frequencies of the radio must be the opposite to the RX and TX frequencies of the repeater. In other words, the RX frequency of the repeater must be the same as the TX frequency of the radio; the TX frequency of the repeater must be the same as the RX frequency of the radio.

#### RX Group List

Select the Group list you have specified in section 4.3.4, RX Group Lists.

#### TX Contact Name

Select the contact to which a call will be initiated on the channel when pressing the PTT button. The contact is selected from the Contact list you have created in section <u>4.3.3, Contacts</u>.



# 4.3.6 Roam Lists

Roaming will allow using the radio on different sites of an IPSC system.

• In the left pane, select **Roam**. Right-click it, and choose **Add > List**.

_	Buttons			List1		
(10)	Telemetry					
7	Menu		Available		Members	
	Security		IPSC2		Selected	
	Network				IPSC1	
·····@1	Announcement					
÷ 🗎	Job Tickets			Add >>		
÷ 🗎	Signaling Systems					
÷ 🗎	Encoder			<< Remove		
÷ 🗎	Decoder					
÷ 🗎	Contacts					
÷… 😑	RX Group Lists					
÷ 自	Channels					
÷ 自	Scan					
	Roam					
	List1		RSSI Thresh	old (dBm) -108 +	7	
Ė 🗎	Capacity Plus	۷	]		4	

- In the left pane, select the roam list you have added.
- In the right pane, in the **Available** list select a channel, or multiple channels using the SHIFT key, and click the **Add** button.

As a result, the channel(s) will appear in the **Members** list.

#### • RSSI Threshold (dBm)

If the RSSI measurement of the site is above the specified RSSI Threshold, then the radio will remain on that site and not roam.



# 4.3.7 Phone System

- In the left pane, select Signaling Systems > Phone. Right-click it, and choose Add > System.
- In the left pane, under **Phone**, select the phone system that has been just added.

General Settings	Phone_100
Buttons Mark Messages 	Top DTMF Gateway ID 100 + Access Code 0
·····································	Deaccess Code #
Gignaling Systems     Gignaling Systems	Pretime (ms) 500 TX Tone Duration (ms) 120 TX Tone Interval (ms) 80 Pause Duration (ms) 4000
< >	

• In the right pane, specify the following parameters:

#### Gateway ID

Enter the same ID as **TRBOnet Peer ID** in the Repeater settings of TRBOnet Server.

Repeater #1						
System Name:	Repeater #1					
TRBOnet Peer ID:	100	÷				
TRBOnet Radio ID:	64250	<b>*</b>				
TRBOnet Local Port:	50000	* *				
Master Repeater Connection Info:						

#### • TX Tone Duration (ms)

Enter the duration of the DTMF tone digits, in milliseconds, for the phone system. It is recommended to set this value to **120**.

#### TX Tone Interval (ms)

Enter the duration of the intervals between the DTMF tone digits in a transmission sequence, in milliseconds, for the phone system. It is recommended to set this value to **80**.

• Once you have finished configuring the desired radio parameters, click the **Write** button on the toolbar.



#### **Configuring MOTOTRBO DDMS** 4.4

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. The schemes using DDMS are depicted in Figures 6-7. This section describes how to configure and run MOTOTRBO DDMS service using MOTOTRBO DDMS Administrative Client.

- Launch MOTOTRBO DDMS Administrative Client.
- In the left pane, select Watcher Settings.

🐍 мот	TOTRBO DDMS			—	$\times$
File	Action Help				
00	0 🖗 🎕 🔚 🔜 🐚				
	ervice	Watcher Settings			
📄 🐺 In	terfaces	PortWatcher	3000		
t	ARS Settings	WatcherTO	14400		
	Watcher Settings	NotifyGroup	0		
	Authentication Server Settings	NotifyRate	5		
i <b>"</b>	ogging	PortWatcher	ihansiha sasuunta		 
		Port listening for Watcher Si Range: 1000 - 65535	ubscribe requests.		
Settings f	for Watcher interface				

lungs for watcher int

#### PortWatcher

This is the port number for listening TRBOnet Server requests.

Note: This value will be used when configuring DDMS parameters in section 5.1.1.3, DDMS Service, Service port.

DDMS service			
Use DDMS service			
Local port:	0	÷	
Service IP Address:	127.0.0.1	•	
Service port:	3000	÷	
Authentication Port:	5055	÷	



• In the left pane, select Authentication Server Settings.



AuthenticationServerIP

This is the authentication server IP address.

AuthenticationServerPort

This is the authentication server port number.

Note: These values will be used when configuring DDMS parameters in section <u>5.1.1.3</u>, DDMS Service,

Service IP Address and Authentication Port, respectively.

DDMS service			
🗹 Use DDMS service			
Local port:	0	÷	
Service IP Address:	127.0.0.1	•	
Service port:	3000	÷	
Authentication Port:	5055	÷	

• Once you have finished configuring the desired DDMS parameters, click the **Start** button on the toolbar.

File Action Help	👶 MOTOTRBO DDMS								
Service Start Interfaces Version ServiceName DisplayName Description	File Action Help								
Start sterfaces Version Cogging ServiceName DisplayName Description	Q 0 0 🖗 🎕 🔜 🗟 🖠								
Cogging ServiceName DisplayName Description	Service	Service							
DisplayName Description	G Start nterfaces	Version							
Description	🥤 Logging	ServiceName							
		DisplayName							
ServiceMode		Description							
		ServiceMode							



# 4.5 Configuring MOTOTRBO MNIS

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. The topologies using MNIS are depicted in <u>Figure 6</u> and <u>Figure 7</u>. This section describes how to configure and run MOTOTRBO MNIS service using MNIS Configuration Utility.

- Launch MNIS Configuration Utility.
- In the left pane, select General.

♠ MOTOTRBO Network Interface Service Configuration Utility							
Configuration View Edit	Service Help						
P ● IPSC	General						
	System Operation Mode Conventional  V MNIS Application ID 64250						
Geo Capacity Plus	Tunnel Network						
i 🔂 🔁 Advanced	MNIS IP Address 172.168.10.1 Tunnel IP Address 172.168.10.2						
	Subnet Mask 255.255.255.0						

#### System Operation Mode

From the drop-down list, select **Conventional**.

#### MNIS Application ID

This is an individual ID that uniquely identifies the MNIS application in the radio system. The recommended value is **64250**.

Note: This is the ID that TRBOnet Server uses as its **Radio ID** when connecting a master repeater.

#### MNIS IP Address

It is recommended that the value of **172.168.10.1** is used unless there are conflicts with other network interfaces on the PC.

#### Tunnel IP Address

This is the IP Address used by the MNIS to communicate with TRBOnet Enterprise (see <u>5.1.1.4</u>, <u>MNIS Data Service</u>, **IP Address**).

MNIS data service							
☑ Use Data Gateway ☑ Service is on a loca	al host						
IP Address:	172.168.10.2	* ¢					
Control port:	5000	<b>‡</b>					





• In the left pane, select **Conventional > Domain 1**.

Master IP Address

Enter the Ethernet IP address of the master repeater.

- Master UDP Port Enter the UDP port number of the master repeater.
- **Authentication Key** Enter the master repeater's authentication key (if any).
- Repeater Slot 1 Enable/Repeater Slot 2 Enable
   Select these options so that MNIS will be able to send or receive data over these slots.



• In the left pane, select **Advanced**.

🚺 MOTOTRBO Network Interface Service Configuration Utility * - D X					
Configuration View Edit Service	Help				
🖃 🛑 IPSC	Advanced				
General Group List Conventional Capacity Plus Capacity Plus Capacity Plus Capacity Plus Capacity Plus Capacity Plus	Data Call Confirmed Compressed UDP Data Header None Battery Saver Preamble Individual Data to Registered Site				
···· 🚰 Network ···· 🕞 Forwarding Rules	Selective Forwarding				
Application Override Rules	TX Preamble Duration (ms) 120				
	Conventional Channel Access Normal V				
	MNIS LE ID Use MNIS ID Manually Assigned	200	•		

#### Compressed UDP Data Header

From the drop-down list, select the type of compression protocol used for the UDP Data Header (None, MSI, DMR). It is recommended selecting **MSI**. Note that the same type must be set on all subscriber radio channels (*CPS*>*Channels*>*Compressed UDP Data Header*).

#### MNIS LE ID > Manually Assigned

Enter a unique Peer ID among the repeaters in a radio system.


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

MOTOTRBO Network Interface Service Configur	ation Utility *		-	×
Configuration View Edit Service Help				
1	2			
Untitled     General				
- Q Security	CAI Network	12 🜲		
🖨 💼 Group List	CAI Group Network	225		
Conventional	s	ervices		
Generaty Plus	ARS UDP Port	4005		
<ul> <li>Inked Capacity Plus</li> <li>Advanced</li> </ul>	TMS UDP Port	4007		
- ₩ Network - ₩ Forwarding Rules	Telemetry UDP Port	4008		
Application Oven	Location Server UDP Port	4001		
	Battery Management UDP Port	4012 🔺		
	User Defined UDP Port 1	Disabled 🛓		
	User Defined UDP Port 2	Disabled 💂		
	User Defined UDP Port 3	Disabled 🛓		
	XCMP Enable			
	XCMP Server UDP Port	4004 🗘		
	ARS Monitor			
	ARS Monitor ID	None 🔺		
	Device Discover	y and Mobility Service		
	Server Address	127.0.0.1		
	Watcher Port	3000 🜩		
	MNIS Co	ntrol Interface		
	MNIS Control Interface TCP Port	5000		
>				

#### **Device Discovery and Mobile Service**

#### Server Address

This is the IP address of the MOTOTRBO Device Discovery and Mobility Service (DDMS). The recommended value is **127.0.0.1** if both DDMS and MNIS reside on the same PC.

Watcher Port

This is the port number on the MOTOTRBO Device Discovery and Mobility Service (DDMS) server to which the Watcher requests should be sent.

## **MNIS Control Interface**

#### MNIS Control Interface TCP Port

This is the Transmission Control Protocol (TCP) port for the MNIS Control Interface server. This value is used when connecting TRBOnet Server to MNIS Service (see <u>5.1.1.4</u>, <u>MNIS Data Service</u>, **Control port**).

MNIS data service					
🗹 Use Data Gateway					
Service is on a local host					
IP Address:	172.168.10.2	<b>-</b> ¢			
Control port:	5000	<b>‡</b>			



Once you have finished configuring the desired MNIS parameters, do the following:

• Click the **Save** button on the toolbar.



• On the **Configuration** menu, click **Set as Active Configuration**.

NOTOTRBO Network Interface Service	e Configuration Utility *	-	Х
Configuration View Edit Service	e Help		
New Open	0		
Delete	General		
Set as Active Configuration Select Active Configuration	System Operation Mode Conventional ~		
Save Save as	MNIS Application ID 64250		
Close	Tunnel Network		
Exit	MNIS IP Address 172.168.10.1		
	Tunnel IP Address 172.168.10.2		
	Subnet Mask 255.255.255.0		
			.::

• Click the **Start** button on the toolbar.





# 5 **Configuring TRBOnet Enterprise**

This section describes how to configure TRBOnet Enterprise software. By properly configuring TRBOnet Server and TRBOnet Dispatch Console, you will be able to utilize the full capabilities of your IP Site Connect system.

## 5.1 Configuring TRBOnet Server

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

For instructions on how to configure TRBOnet Server's Database, Service, Network parameters, etc., refer to *TRBOnet Enterprise Quick Start Guide*.

## 5.1.1 Adding a Master Repeater

This section describes how to configure TRBOnet Server for communication with the master repeater of an IPSC system.

Note: Only the Master repeater needs to be added to TRBOnet Server.

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

Configuration		Digital Systems			Version: 5.3.0.1703
<ul> <li>Service</li> <li>Network</li> <li>Redundancy</li> </ul>	^	🗹 Enable Digital	Systems		
Database		CAI Network:		12	<b>‡</b>
Reports		CAI Group Netw	ork:	225	<b></b>
Service Management		CAT Group Weth	UTR.		•
X Advanced settings		Registered Dig	ital Systems		
Geocoding Server	s	Name		IP Address	Radio ID
Radio Networks					
TRBOnet Cloud					
Digital Syste	Add MOTOTR	RBO System			
Analog Cont 🖶	Add Capacity	MAX			
Remote Agents 斗	Add DIMETRA	Express			
Friendly Servers	Add Control S	itation			
Telephony					
🖞 Data Sources 🗬	Add TRBOnet				
Email	Add Friendly I	FS-1000 Station	Delete		Test
Incoming Ma	Add XRC-900	0 Controller			
Set Defau 🖕	Add XRT-9000	) Controller		Apply	OK Cancel
	Add SELEX Re	peater			
-	Add KAIROS R	Repeater			
+	Add WAVE Co	ontroller			
×	Remove All				

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 to determine the values. Contact your radio network administrator, if you do not have this information.



-	_							
Configuration		Repeater #1						
💣 Service	$\sim$							
S Network		System Name:	Repea	ter #1				
韓 Redundancy		TRBOnet Peer ID:	100		\$			
Database		TRBOnet Radio ID:	6 4050		*			
Reports		TROUTEL RAUIO ID;	64250		•			
Service Management		TRBOnet Local Port:	50000		÷			
X Advanced settings		Master Repeater Conn	ection	Info:				
Geocoding Servers		Master IP Address:	10.10.	102.131	-			
Radio Networks			[			(		
Digital Systems		Master UDP Port:	50011		Ŧ	Test		
Services		Authentication Key:	99999					
Repeater #1		System Type:	IP Site	Connect				-
X Advanced settings			-					-
Privacy		System Identifier:	Depart	ment1				
<b>III</b> Slot #1		Use NAI Voice						
<b>III</b> Slot #2		Use NAI Data (MNIS an	d DDMS	)				
Local Slots		Use RCM for control rad						
			lio acuv	ity				
Analog Control Stations								
🔂 Remote Agents								
Friendly Servers	~							
Set Defaults				Apply		ОК	Cance	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 Server. The Peer ID must be unique among the repeaters in the radio system.

#### • TRBOnet Radio ID

Enter the Radio ID of the gateway for voice and data in the radio system. This Radio ID is used as **ARS Radio ID** and **TMS Radio ID** in the Network settings of subscriber radios (see sections <u>4.3</u>, <u>Configuring a Subscriber Radio</u>, <u>4.3.2</u>, <u>Network</u>). The default value is **64250**.

## • TRBOnet Local Port

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

## • Master 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*. See section <u>4.1.3</u>.

#### Master 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*. See section <u>4.1.3</u>.



## • 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*. See section 4.1.3.

## • System Type

From the drop-down list, select IP Site Connect.

• Test

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

## • System Identifier

Enter the system identifier. Note that the system identifier should be the same for all control stations and repeaters used in the same radio system.

## • Use NAI Voice, Use NAI Data (MNIS and DDMS)

Select these options if the Network Application Interface Voice and Network Application Interface Data features are enabled on the repeaters (see section <u>3.3, NAI IP Connection</u>).

Click **Apply** after entering all the required values. A confirmation dialog will appear, prompting you to save the configuration and restart the TRBOnet Server service. You can also restart the service manually.

## 5.1.1.1 Advanced Settings

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

Note: These settings are applicable only when **Use NAI Voice** and **Use NAI Data (MNIS and DDMS)** are deselected in the Repeater pane.



Configuration		Advanced settings				
🗬 Service	^					
S Network		Voice Call Hang Time (	ms):			
🕸 Redundancy		Group Call:	3000	÷		
Database		Private Call:	4000			
Reports				•		
Service Management		Emergency Call:	4000	÷		
X Advanced settings		TX Preamble:	100	•		
Geocoding Servers		TXTTCumble:	120	•		
Radio Networks		TX Timeout:	60	÷	seconds	
Digital Systems				1		
		Phone System:	Motor	ola Phone System		•
Repeater #1		Allow CSBK Data				
Advanced settings						
Privacy						
Slot #1						
Slot #2						
Local Slots						
Control Station #1						
Analog Control Stations						
Remote Agents						
Friendly Servers	¥					
Set Defaults				Apply	OK	Cancel

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

Voice Call Hang Time (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.

## 5.1.1.2 Privacy

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

Configuration	Privacy		Version: 5.3.5.1872
	Privacy Type: Basic Privacy Key ID: Enhanced Privacy Keys:	Enhanced	
Service Management	Alghoritm ID ARC4 (40 bit) <b>v</b> 1	Name	Value
Geocoding Servers Radio Networks TRBOnet Cloud Digital Systems Services Repeater #1 Advanced Settings Privacy Slot #1 Slot #2 Local Slots	ARC4 (40 bit) AES (256 bit) AES (256 bit) Legacy		
Analog Control Stations	Add Remo	ve	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 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.

## 5.1.1.3 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**.

Configuration	D	DDMS service Version: 5.3.5.187
TRBOnet Cloud     Jojital Systems     Services     Conscienting Management		Use DDMS service
Capacity Max Capacity Plus #1		Service IP Address: 127.0.0.1 Test
Privacy DDMS service		Authentication Port: 5055
Advanced Settings		Service IP Address Service port Local port
Advanced Settings		1 🗹 10.10.101.207 3000 0 🗘
TRBOnet Swift A200		
Remote Agents		
Friendly Servers	•	Add Delete 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.

#### 5.1.1.4 MNIS Data Service

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 MNIS.

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

Configuration	M	NIS data service				
💣 Service	^					
🕤 Network		🛿 Use Data Gateway				
🛱 Redundancy		Service is on a local	host			
Database				<b>(2.2</b> )		
😪 Reports		IP Address:	172.168.	10.2 <b>*</b> 호		
Service Management		🗹 Control port:	5000	÷	Test	
💥 Advanced settings		MNIS Service:	MOTOTR	BO Network Inter	face Service	- \$ ?
Geocoding Servers		Redundant services:				. [-
📃 Radio Networks		IP Address		Control port	Local port	
		I Address		control por c	cocurpore	
Services						
Repeater #1						
🔒 Privacy						
DDMS service						
💭 MNIS data serv						
Advanced :						
Audio Paths	~	Add D	elete		Test	
< >		Auu	elete		rest	
Set Defaults				Apply	ок	Cancel

- In the MNIS data service pane, specify the following MNIS data servicerelated 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.

## 5.1.1.5 Slots

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

Configuration	Slot #1
Service     Network	Slot #1 Name: TPSC1
<ul> <li>In the second se</li></ul>	Name:     IPSC1       Messaging Delay:     Normal       Use the slot for RX Data only (GPS Revert or Data Revert)
Service Management     Advanced settings     Geocoding Servers	Use Privacy Privacy Key:
Radio Networks Digital Systems Services Repeater #1 Advanced setti Privacy Slot #1 Slot #2 Local Slots	<ul> <li>Allow TX interrupt</li> <li>Always transmit when the PTT is pressed ("Impolite" channel access)</li> <li>Data Call Confirmed</li> <li>Private Call Confirmed</li> <li>Emergency Alarm Ack</li> <li>Emergency Call/Alarm Indication</li> </ul>
Control Station #1	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.

#### 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 the 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.

 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).

#### 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. 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.



## 5.1.1.6 Local Slots

On a local slot in IPSC systems, voice or data is not transmitted between sites due to MOTOTRBO limitations; TRBOnet Server can only receive on those local slots, but cannot transmit via an IP connection.

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

Configuration	Local Slots	
Service 🔨	Load Peers Map	
S Network		
🛱 Redundancy	Name	Peer ID Peer Slot
Database	🗹 Local Brine's	1002 Slot #1
Reports		
🔅 Service Management		
🔀 Advanced settings		
Geocoding Servers		
Radio Networks		
💭 Services		
Repeater #1		
🔒 Privacy		
DDMS service		
MNIS data service		
Advanced settings		
III Slot #1		
Slot #2		
Local Slots	Add Remove	Configure
Control Station #1 🗸	Add Keniove	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*. See section <u>4.1.1</u>

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



TX Configuration					$\times$
					_
Name:	Local Brine's				
Messaging Delay:	Normal	•			
Use the slot for RX Date	ta only(GPS Revert	or Data	Revert)		
Use Privacy					
Privacy Key:		~			
Allow TX interrupt					
Always transmit when	the PTT is pressed	("Impolit	te" chann	el access)	
Data Call Confirmed					
Private Call Confirmed					
🗹 Emergency Alarm Ack					
🗹 Emergency Call/Alarm	Indication				
			ж	Cancel	
			~	Cancer	

 Specify the desired local slot settings similar to those for a wide-area repeater slot (see section <u>5.1.1.5</u>, <u>Slots</u>).

## 5.1.2 Adding a Control Station

This section describes how to configure TRBOnet Server for communication with a control station in an IPSC system.

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

Configuration	Control Station #1			
💣 Service 🔺				
S Network	Name:	Control Station #1		
🛱 Redundancy	Radio ID:	64250		
Database				
Reports	IP Address:	192.168.98.2 🔻 🕫	Test	
Service Management	Mode:	IP Site Connect		-
X Advanced settings	System Identifier:	Department 1		_
Geocoding Servers	bystem ruentmen.	Department 1		
Radio Networks	Use the radio for RX D	ata only (GPS Revert or Dat	a Revert)	
Digital Systems	Playback device:	Speakers (Logitech USB He	adset) 🔻	ø
Services	· · · ·			-
Control Station #1	Recorder device:	Line In (2- High Definition A	Audio Device) 🔻	¢
Advanced setti				
Analog Control Station				
Remote Agents				
Friendly Servers				
Telephony Telephony				
↓ Data Sources				
< >				
Set Defaults		Apply	OK Can	cel

- 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.



## Radio ID

This is the Radio ID of the radio unit connected as a control station.

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 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 **IP Site Connect**.

## System Identifier

Enter the system identifier. Note that the system identifier should be the same for all control stations and repeaters used in the same 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.

## Playback device

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

#### Recorder device

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

• Click **Apply** after entering all the required values. A confirmation dialog will appear, prompting you to save the configuration and restart the TRBOnet Server service. You can also restart the service manually.

## 5.1.2.1 Advanced Settings

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



Configuration		Advanced settings			
<ul> <li>Service</li> <li>Network</li> <li>Redundancy</li> <li>Database</li> <li>Reports</li> <li>Service Management</li> <li>Advanced settings</li> <li>Advanced settings</li> <li>Digital Systems</li> <li>Services</li> <li>Control Station #1</li> <li>Analog Control Stations</li> <li>Remote Agents</li> <li>Friendly Servers</li> <li>Friendly Servers</li> <li>Telephony</li> <li>Database</li> </ul>	^	Advanced settings Advanced settings Automatically reset ala Automatically handle of Emergency Call/Alarm Use front microphone Always transmit when Use serial port for PTT Serial port: TX Timeout: Signaling System: Allow CSBK Data	all alert indication the PTT i	1	seconds
Rodbus TCP	~				
Set Defaults				Apply	OK Cancel

• In the **Advanced Settings** pane, specify the following control station-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.

 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 (for PTT key up)
   Select this option to use the speaker microphone on the front of 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 key up 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.

#### 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).
- Allow CSBK Data
  - Select this option so that GPS data is sent in a single CSBK.

## 5.1.3 Enabling Telephony

TRBOnet Server has its own built-in SIP server to support VoIP communications between the radios as well as other SIP-compliant clients.

- In the Configuration pane, select Telephony
- In the **Telephony** pane, select **Use Telephony**.

Configuration		Telephony
Configuration Slot #1 Slot #2 Slot #2 Control Station #1 TBOnet Swift Agent#1 TBOnet Swift Agent#1 Controller #1 Selex #1 Analog Control Stations Remote Agents Friendly Servers Telephony Advanced settings		Telephony          Image: SIP Server         Internal PBX Server
Thternal PBX Server		
<pre></pre>		
🌞 Modbus TCP		
Email		
SMS		Add Delete Test
📮 License	×	
Set Defaults		Apply OK Cancel



## 5.1.3.1 Internal PBX Server

- Make sure the Internal PBX Server option is selected in the Telephony pane.
- In the **Configuration** pane, select **Internal PBX Server**.

Configuration		Internal PBX Server
Slot #1	^	✓ Use Internal PBX Server         Local IP:       10.10.100.99         ✓ Ø         Port:       5060
TRBOnet Swift Agent#1		Dispatch Center
		SIP ID: 1234
Selex #1		SIP User: 1234
🔂 Remote Agents		
Friendly Servers		
Telephony		
Advanced settings		
Internal PBX Server		
Advanced settings		
🜵 Data Sources		
🍀 Modbus TCP		
🔀 Email		
SMS		
📮 License	۷.	
Set Defaults		Apply OK Cancel

- In the Internal PBX Server pane, specify the following parameters:
  - Local IP

Enter the IP address of the PC with TRBOnet Server.

Port

Enter the local UDP port number for the SIP service (5060, by default).

## **Dispatch Center**

SIP ID

Enter the SIP ID that will be used by the Dispatch Center.

SIP user

Enter the SIP user name that will be used by the Dispatch Center.



## 5.2 Configuring TRBOnet Dispatch Console

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

The dialog box will appear prompting you to enter the TRBOnet Server IP address, User Name, and Password. The default Administrator credentials are *admin* for the login and *admin* for the password.

For a more detailed information on how to use TRBOnet Dispatch Console, refer to *TRBOnet Enterprise User Manual*.

## 5.2.1 Registering Radio Groups

Go to **Administration** (1), **Radio Group** (2) to add/edit/delete Radio Groups in the system.

File View Map Tools Help			
Administration	Radio Groups		9 😔 🔁
Disabled Radios     Dispatcher Groups     Dispatchers     Dispatchers     Email Groups     SMS Groups     Users	✓ Intercom     ✓      ✓	③ 1: Line free 4: ② ✓ Group 20 ④ 4: ②	All Call •) •() Group 30 •) •()
Logical Groups	Add         Edit         Quete         ∰ Gro           Name         △         Radio ID         Cleaners         30           Firemen         20         20         20	puping 🍸 Auto Filter 🎲 Default Settin MDC / Sel-5 (Hex) 5 0	Descriprion Cleaning group
Voice Dispatch	Police 10	0	
Location Tracking  Location Tracking  Job Ticketing  Route Management  RFID Tracker  Text Messages	3		
Voice Recording			
Event Viewer			
Radio Allocation	1		
Administration	H4 44 4 Record 1 of 3 + ++ ++ 4		Þ
🐻 127.0.0.1 🛞 🅵 🧟 Administrator 📑 Li	icensed to: demo Demo License		🗸 Active -

- Click Add (3) to add a radio group to the system:
- In the dialog box that appears, specify the **Name** and **Group ID** (Radio ID) of the group you are adding.
- Note: Make sure that the radio group(s) created in the Dispatch Console are present in the radio's RX Group List (see section <u>4.3.4, RX</u> <u>Group Lists</u>).



## 5.2.2 Registering Radios

Go to Administration (1), Radios (2) to add/edit/delete Radios in the system.

File View Map Tools Help									
Administration	Radios							👲 📣 🕻	•
Dispatcher Groups     Dispatchers     Dispatchers     Groups     SMS Groups     SMS Groups     Users     Logical Groups	1: Line free Private Call Group 20 Registered	•)) •(;	0	✓ Intercom Group 10	)) (( )) (( )) ((	0			
Radio Groups 2	🖶 Add Group	Add Digital Ra	adio	🗕 🛃 Add WA	AVE Radio 🔜	Add TRBOne	t Mobile 🔜	Add Range	»
Radios V	Radio Name∆	Type	Radio I	D MDC ID	SIP ID	Radio Gro	Logical Gr	Description	Ť
	125	MOTOTRBO Radio	25	0	125	11; Firemen	Cleaning,		
Voice Dispatch	13	MOTOTRBO Radio	13	0		All			
	3235	MOTOTRBO Radio	235	0	235	Firemen; P	Cleaning		
Location Tracking	3333	TRBOnet Mobile	3333	0	3333	11; 22			
	\$ 555	MOTOTRBO Radio	555	0		All			
😸 Job Ticketing	Radio 300	MOTOTRBO Radio	300	<u>v</u>		All			
Route Management				3					
Text Messages									
👻 Voice Recording									
Event Viewer									
Radio Allocation	_1								
Administration	HI II Record	1of6 🕨 🍽 🙌	1						Þ
🔂 127.0.0.1 🛞 🕵 🛛 🕱 Administrator 🖾	Licensed to: dem	0						🕑 Activ	•

- Click Add MOTOTRBO Radio (3) to add a new radio.
- In the dialog box that appears, specify the **Callsign**, **Radio ID**, **Radio Groups**, and **Home Group** to which the radio belongs.



## 5.2.3 Registering SIP extensions

This section describes how to add SIP extensions to TRBOnet Dispatch Console.

- Go to Administration (1), Telephony (2).
- In the Telephone pane, click the Extensions tab (3), and then Add > SIP Phone (4).

File View Map Tools Help	
Administration	Telephony 🔮 🚳 😉
Server	I: Line free       Intercom       Intercom         Configure Calls       Extensions       Redirect Calls       Aliases       Profiles         Add       Edit       X Delete       If Grouping       Auto Filter @ Default Settings
	SIP Phone         SIP User         Caption           TBBOnet Mobile Client         1234         Internal PBX Server
Voice Dispatch	Radio         125         125         125           Radio         235         235         235
Location Tracking	
Route Management	
Text Messages	1
[행] Radio Allocation	
Administration	HI II Record 1 of 3 + + + H I
🔂 127.0.0.1 🛞 🤶 Administrator 📑 Li	ensed to: demo Demo License 🕑 Active 🗸

• In the dialog box that appears, specify the **SIP ID** and **SIP User** of the SIP user you are adding.