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# **1** Introduction

# 1.1 About This Guide

This document is intended for administrators setting up evaluation and proofof-concept deployments of MOTOTRBO Dispatch over IP solutions. The document describes the minimum steps to configure the Phone Connect feature in TRBOnet.

# 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.

For more information about TRBOnet products, refer to our <u>website</u>.

# 1.3 Contacts

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# 2 **Overview**

The Phone Connect feature is designed to extend the TRBOnet voice functions to SIP and PSTN endpoints. From the dispatcher's perspective, the multi-line phone connection becomes part of the voice dispatch workspace along with the radio PTT boxes.

When the feature is activated, the phone subscribers registered on the built-in or external SIP servers as well as PSTN users become first-class peers in TRBOnet: the phone calls can be joined to a conference with the radio subscribers, the phone endpoints can directly dial into and be reachable for the radios and the dispatcher, the audio messages can be sent to phones (played back when the number answers), etc.

TRBOnet includes an internal SIP PBX server. You can also create SIP trunk connections with external PBX servers or route calls to an external PBX server as if it is just another SIP endpoint.



# 3 Configuration

You will need to use the following three software tools to edit the configuration settings for the Phone Connect feature:

- TRBOnet Server
- TRBOnet Dispatch Console
- Motorola CPS to edit the codeplugs for the repeater and the radio stations

Follow the guidance below to configure the necessary Phone Connect-related settings.

## 3.1 TRBOnet Server

 Navigate to Radio Systems > Repeater > Advanced settings and from the Phone System list, select either 'Motorola Phone System' or 'TRBOnet Phone System (TX Interrupt)'.

Configuration		Advanced Settings		
🛱 Redundancy	^			
Database		Voice Call Hang Time (	ms):	
😪 Reports		Group Call:	3000 ‡	
Service Management		Private Call:	4000	]
🔀 Advanced Settings				
Geocoding Servers		Emergency Call:	4000 ‡	
🔚 Radio Systems		TX Preamble:	100 *	1
🔅 Services		TA Preditible;	120 ‡	
PSC 1		TX Timeout:	60 🇘	seconds
X Advanced Settings		$\frown$		
Privacy		Phone System:	Motorola Phone System	*
Slot #1		TX Interrupt Mode:	MSI Proprietary	*
<b>III</b> Slot #2				
Local Slots		Allow CSBK Data		
🛒 PTT over Cellular				
TRBOnet.Mobile gateway				
🔂 Remote Agents				
Friendly Servers				
🔞 Telephony	5			
( ) ( )				
Set Defaults			Apply	OK Cancel

- In the Configuration pane, select Phone Connect
- In the **Phone Connect** pane, select **Use Phone Connect**.



Configuration		Phone Connect
	^	✓ Use Phone Connect  SIP Server  I ✓ Internal PBX Server
< >		Add Delete Test 🔺 🔻
Set Defaults		Apply OK Cancel

## 3.1.1 Phone Connect Advanced Settings

• In the **Configuration** pane, under **Phone Connect**, select **Advanced Settings**.

• In the **Advanced Settings** pane, specify the following parameters:

#### Max Ring Time

Specify the maximum ringing time, in seconds.

Max Call Time

Specify the maximum call time, in minutes.

Public Address

This is the public IP address of your PC. Enter the Public Address if your TRBOnet Server is behind a router and an <u>External PBX Server</u> will be used. To detect the public address, click the ellipsis (...) button.

# **TRBOnet Phone Connect – User Guide**



Public IP Address		×
Detect p	oublic IP Address over STUN server	
STUN Server:	stun.ekiga.net	r
Port:	3478 🏮	
IP Address detected	80.246.253.115	
Detect	OK Cancel	

#### • STUN Server

From the drop-down list, select the STUN Server.

• Detect

Click this button to detect your public IP address.

#### Phone owner address

From the drop-down list, select 'Take from database'. This will enable determining the street address of a caller.

Click the **Configure** link.

Address format	×
Address format:	
, %HOUSE_NUMBER%, %STREET_NAME%	-
Availablefields: %HOUSE NUMBER% %FLAT NUMBER% %STREET NAME% %COMMUNITY NAME% %STATE NAME% %POSTCODE% %COUNTRY NAME% %EXTRA INFO%	
OK	:el

• Add the required fields to the address information.

#### 3.1.2 Internal PBX Server

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

Configuration		Internal PBX Server
Configuration Advanced Settings Privacy DDMS service MIIS data service Advanced Settings Advanced Settings TRBOnet.Mobile gateway Remote Agents Friendly Servers Privendly Servers Privendly Servers Advanced Settings TRBOnet Connect Advanced Settings Connect Advanced Settings TRBONE Server Advanced Settings Thermal PBX Server Advanced Settings Thermal PBX Server Advanced Settings	;	Internal PBX Server Use Internal PBX Server Local IP: 10.100.99 • ¢ Port: 5060 ‡ Dispatch Center User Extension: 1234 User Name: 1234
SMS Notifications		
Push Notifications		
📮 License	~	
<	>	
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**

User Extension

Enter the user extension number that will be used by the Dispatch Center.

User Name

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

#### 3.1.2.1 Advanced Settings

• In the **Configuration** pane, under **Internal PBX Server**, select **Advanced Settings**.

Configuration	Advanced Settings
Advanced Settings Privacy DDMS service MINIS data service Advanced Settings Advanced Settings Advanced Settings TREOnet. Mobile gateway #1 Remote Agents Friendly Servers Phone Connect Advanced Settings Phone Connect Advanced Settings Thermal PBX Server Advanced Settings Thermal PBX Server Advanced Settings Data Sources Semal SMS Notifications Push Notifications	Advanced Settings         Packet time (ms):       60       ‡         Codecs:       G711µ,G711a,OPU5,OPU5,G729       *         Registration Interval (sec):       3600       ‡         DTMF Send Mode:       RFC 2833       *         First VoIP port:       Default       ‡         Use VoIP ports:       All       *
SMS Notifications	
Set Defaults	Apply OK Cancel

- In the **Advanced Settings** pane, specify the following Internal PBX Serverrelated advanced settings:
  - Packet time

Enter the packet length, in milliseconds.

Codecs

In the drop-down list, select/unselect the codecs to be used for audio compression.

Registration Interval (sec)

Enter the time interval, in seconds, to check the SIP registration status of subscribers.

DTMF Send Mode

Enter mode for sending DTMF tones. The available modes are RFC 2833, SIP INFO (DTMF relay), and SIP INFO (DTMF).



#### First VoIP port

Enter the number of the first VoIP port for audio communications

#### Use VoIP ports

From the drop-down list, select which VoIP ports will be used (all, even, or odd).

#### 3.1.3 External PBX Server

You can enable multiple external PBX servers to use the SIP Interconnect feature. This feature enables calls from the radio to the phone and vice versa. The dispatcher can make a call from the Dispatch Console to a phone as well as redirect a phone call to a subscriber radio.

• In the **Phone Connect** pane, click **Add**.

Or, in the **Configuration** pane, right-click **Phone Connect** and choose **Add PBX Server**.

Configuration	Ext	ternal PBX Server			
PISC 1 CP1	^				
Privacy     DDMS service     Advanced Settings     MNIS data service		Provider optio Address: Port:	yourprovider.com		UDP 👻 Test
Advanced Settings		Local IP:	10.10.100.99	- 🕫 Port:	5061 🗘
🖵 PTT over Cellular		Dispatch Cent	er		
📕 TRBOnet.Mobile gateway #1		User Extension:	57068		
Remote Agents		User Name:	Dispatcher 1		
Renally Servers		User Password:	***		
Advanced Settings 2 Internal PBX Server Advanced Settings				Τe	est Call
Advanced Sectings      External PBX Server      Advanced Settings      Advanced Settings      Bedundancy					
Alexandre in the second s	~				
< >					_
Set Defaults			Apply	ОК	Cancel

• In the External PBX Server pane, specify the following parameters:

#### Use External PBX Server

Select this option to enable an external PBX server.

#### **Provider options**

Address

Enter your SIP provider address, and select the protocol from the dropdown list on the right of the address (for more details, contact your SIP provider).

Port

Enter the port number of the SIP provider (5060, by default).

- Click **Test** to check the connection to the provider.
- Local IP

Enter the IP address of the PC with TRBOnet Server.



Port

Enter the local port number to make connections from.

#### **Dispatcher Center**

Note: This information is provided by the SIP provider.

User Extension

Enter the extension number that will be associated with TRBOnet Server to make and receive calls.

User Name

Enter the user name for the login.

- User Password
   Enter the user password for the login.
- Test Call

Click this button to make a test call.

Note: To make a test call, make sure that the TRBOnet Server service is not running.

#### 3.1.3.1 Advanced Settings

• In the **Configuration** pane, under the corresponding **External PBX Server**, select **Advanced Settings**.

Configuration	Advanced Settings			
Configuration IPSC 1 Advanced Settings Privacy DMMS service Advanced Setting Advanced Setting PTT over Cellular PTT over Cellular PTT over Cellular Remote Agents Friendly Servers Phone Connect Advanced Settings Internal PBX Server Advanced Settings External PBX Server Advanced Settings External PBX Server Advanced Settings External PBX Server Advanced Settings	Advanced Settings         Packet time (ms):         Codecs:         Registration Interval (sec):         DTMF Send Mode:         Do not register users on a PI         Do not register internal u         Configure user's authorizatio         First VoIP port:         Use VoIP ports:         ✓ Allow outgoing SIP calls         Available SIP numbers:	sers on a PBX serv	÷ •	
External PBX Server	~			
Set Defaults		Apply	ОК	Cancel

- In the **Advanced Settings** pane, specify the following External PBX Server-related advanced settings:
  - Packet time

Enter the same value as specified in the phone system;

Codecs

In the drop-down list, select/unselect the codecs specified in the phone system.



#### Registration Interval (sec)

Enter the time interval, in seconds, to check the SIP registration status of subscribers.

#### Do not register users on a PBX server (SIP trunk)

Select this option so that radios will use the SIP trunk system to get extensions.

#### Configure user's authorization

Click this link to set up user authorization for the systems with enhanced authorization parameters. It is recommended to be used when Radio ID is equal to SIP ID. In case when Voice is transmitted via Radio Channel, Radio ID is used. When voice is transmitted via GSM channel, SIP ID is used.

SIF	Authorization user	'S	×
	User Extension	Authorization User Name	
Þ	010101	User 1	

• Click Add to add a new user authorization.

#### • User Extension

Enter the extension number for the new user.

• Authorization User Name

Enter the name that will be used as the authorization user name.

• Click **OK** to save the new user authorization.

#### First VoIP port

Enter the number of the first VoIP port for audio communications. The default value is specified in Network Parameters.

Use VoIP ports

From the drop-down list, select which VoIP ports will be used (all, even, or odd).

#### Available SIP numbers

Enter the range of SIP phone numbers that will be available for outgoing calls.

#### 3.1.3.2 Redundancy

A Redundant PBX Server be used when a connection to the main PBX Server fails.



• In the **Configuration** pane, under the corresponding **External PBX Server**, select **Redundancy**.

Configuration	Redundancy	
Advanced Setting A	Redundant PBX Servers:	
Advanced Setting	PBX Server Address PBX Server Por	rt TRBOnet Local Port
Audio Paths	1 🔽 123.21.102.201 5060	5061
🛒 PTT over Cellular		
🛄 📃 TRBOnet.Mobile gateway		
📷 Remote Agents		
📷 Friendly Servers		
The Connect		
-X Advanced Settings		
- 🏧 Internal PBX Server		
Advanced Settings		
External PBX Server		
Advanced Settings		
韓 Redundancy		
🜵 Data Sources		
🔀 Email		
SMS Notifications		
📴 Push Notifications	Reregister users when changing PBX server	
📮 License		
< >	Add Delete	Test 🔺 🔻
Set Defaults	Apply	OK Cancel

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

#### PBX Server Address

Enter the IP address of the redundant server.

- Check the corresponding port numbers (PBX Server Port and TRBOnet Local Port).
- Select the check box beside the server address.
- Register users when changing PBX server
   Select this check box so that phone users will be registered when the PBX server is switched to the redundant server.



# 3.2 TRBOnet Dispatch Console

- Go to Administration (1), Phone Calls (2).
- In the **Phone Calls** pane, click the **Configuration** tab (3).

File View Map Tools Help			
Administration	Phone Calls		🔮 🐠 🔽
Server ^	Configuration Extensions Call Redirection Phone Con	tacts Dial Plans	
			^
📋 Database	Radio Call Configuration		
	Access code:	0	
- Kg System Bridge	Deaccess code:	-	
	Callback Request Options		
- 😵 Tasks 1889 Custom Fields	Allow radios to make outgoing calls:	Yes	
- 38 Modbus TCP Connections	Send a DTMF command to request a caliback:	Yes	
Virtual Modbus Devices 2	Send a text message to request a caliback:	Yes, Prefix: 'sip:'	
TP Cameras	Start transmission:	Wait for answer	
- 4 Public Announcements	Calls to Radios and PoC Devices	which not defaulted	
- Alarm Management	Start transmission:	Immediately	
Telemetry	Max ring time:	Unimited	
🖶 👍 Text Messages	Check if the radio is available before making a call:	No	
- 🕼 Request To Talk	Call notifications:	Yes	
🕀 🏭 Radio Statuses	Play a tone when PTT is pressed or released:	res Yes	
🗄 🍓 Location Profile	Play a tone when PTT is pressed or released:	16	
- 4 Mobile Client Profile (TRBOnet Mobile)	Configure 4		
Mobile Client Profile (TRBO.SUS)			
Teltonika Profile	Inbound Call Configuration		
B X Tools	Inbound Call Control		
- Schedulers	Call to Dispatch Center:	Redirect to online dispatchers	
🔒 Disabled Radios	Call to unregistered number:	Reject	
🌉 Dispatcher Groups	Do not establish call until called party responds:	No	
- 🛃 Dispatchers	Interactive Voice Response (IVR) Options		
	Do not wait for Accept code:	Yes	
	Maximum number of digits:	Unlimited	
Voice Dispatch	Accept code:	÷	
	Number	Destination	
Location Tracking	0	Call dispatcher (any available)	
	<number></number>	Call radio with Radio ID = <number></number>	
🚟 Job Ticketing	Configure		
	5		
🕖 Route Management	Conference Configuration		
	Max Call Duration:	60 minutes	
C Text Messages	Automatic Voice Detection:	No	
0	Automatic Gain Control:	No	
👻 Voice Recording	Automatic Noise Reduction:	No	
Reports	Configure 6		
	- 0		
Event Viewer	Voice Message Loop Settings		
	Play intro message:	No	
1 Radio Allocation	Play voice message this many times:	2	
	1 Set delay between voice messages:	Yes	
Administration	Configure 7		~
🐻 Connected 🍇 🕵 🥵 🕵 🥵 🕱 Adminis	trator 📑 Licensed to: demo (Walt) (Demo License)		🕑 Active 🕶

## 3.2.1 Radio Call Configuration

• Click the **Configure** button (4) to set radio call configuration parameters:



 Access Code Set the value to that configured for the radios as Access Code in MOTOTRBO CPS.



#### Deaccess Code

Set the value to that configured for the radios as **Deaccess Code** in MOTOTRBO CPS.

#### **Callback Request Options**

- Allow radio users to make outgoing calls Select this option to enable outgoing phone calls from the radios.
- Send a DTMF command to request a callback Select this option to allow radio users to dial the phone number as a sequence of DTMF tones sent over the radio channel.
- Send a text message to request a callback Select this option to allow radio users to initiate phone calls via sending TMS messages with a specified prefix to the dispatcher.
  - Use this prefix in text messages Enter the specific prefix for a text message.
- Start transmission

Select the mode for starting transmission on the radio that initiates a call.

Wait for answer

Transmission will be started as soon as the called party answers the call.

Immediately

Transmission will be started immediately that is without waiting for the called party to answer the call.

#### **Calls to Radios and PoC Devices**

• Start transmission

Select the option how to start transmission on the radio receiving a phone call.

- **Immediately** Select to start the call immediately.
- Wait for PTT

Select to play a ringtone until the radio user presses the PTT.

• Max ring time

Specify a timeout that defines how long to attempt to connect to the radio.

• Check if the radio is available before making a call

Select this option to execute a Check Radio command before placing a call.

• Call notifications

Select this option to send a text message to the radio when the channel is busy and a phone call cannot be established.



#### • Play a tone when PTT is pressed or released

Select this option so that a tone will be played during the established phone call when PTT is pressed or released on the remote radio that doesn't support a Full-Duplex mode.

## 3.2.2 Inbound Call Configuration

• Click the **Configure** button (5) to set incoming call configuration parameters:

Inbound Call C	ontrol	
Call to Dispatch (	Center:	Forward to IVR
Call to unregiste	red number:	Reject
🗌 Do not establi	sh call until ca	alled party responds
Interactive ¥o	ice Respon	se (IVR) Options
🔽 Do not wait fo	r Accept cod	e if one of the fixed numbers below is dialed
Maximum numbe	r of digits:	3
Accept code:		#
Number	Destina	tion
0	Call disp	atcher (any available)
1 <number></number>	Call radi	io with Radio ID = <number></number>
235	Call radi	io 'Unknown'
56	Call disp	atcher (any available)
	<u>lit</u> 🛃 <u>Dele</u> l	

#### **Inbound Call Control**

• Call to Dispatch Center

Select the mode for handling incoming calls made to the dispatcher.

Reject

All incoming phone calls will be declined.

Forward to IVR

When an incoming call arrives, the phone user will hear Voice Menu commands.

Redirect to online dispatchers

All incoming voice calls will be redirected to all dispatchers of the Dispatch center and any free dispatcher will answer the phone call.

Use as a regular phone number

A call to the Dispatch Center's number will be processed as a call to a regular phone number, and will depend on the selection made in the parameter below.

#### • Call to unregistered number

Select the mode for handling incoming calls made from unregistered subscribers.



#### Reject

Select this option to decline all phone calls from unregistered subscribers.

#### Use this number as Radio ID

Select this option so that the system will use unregistered numbers as a Radio ID and start a Private Call.

Use this number as Internal Phone Number
 Select this option to allow the system to read unregistered numbers according to Voice Menu rules.

#### Forward call to PABX

Select this option to forward all calls from unregistered numbers to the External PBX.

#### **Interactive Voice Response (IVR) Options**

• Do not wait for Accept code if one of the fixed numbers below is dialed

Select this option to search for fixed the number in the Extensions table automatically.

When this option is disabled, the subscriber must dial the number according to the following example: **(phone number)#**. The character **#** (or **\***, if selected as the Accept code) is used to search for the phone number in the table.

#### • Maximum number of digits

Specify the maximum number of characters allowed in a phone number.

• Accept Code

Specify the character that will be used to finish dialing the extension number.

All available numbers are listed in the table below.

• Click the **Add** link to add a number to the table.

#### To add a static (fixed) number

• Choose **Static number**.

Extension numb	er		×
Static numb C Dynamic nu			
< bynamie ne			
Number:	123456		
Call Type:	Call Group		•
Channel:	Control Station #1		•
Group:	All Call		•
		ОК	Cancel

#### Number

Enter a phone number to add to the table (contact list).

# **TRBOnet Phone Connect – User Guide**



#### Call Type

Select the call type from the drop-down list.

#### • Call Dispatcher

Select this type to make a phone call to the dispatcher.

#### • Call Radio

Select this type to make a phone call to the selected radio.

#### • Call Group

Select this type to make a phone call to the selected group.

Channel

Select the channel to make a group phone call through (available for Group Calls only).

#### Dispatcher/Radio/Group

Select the dispatcher, radio, or group depending on what you have selected in the **Call Type** box.

#### To add a dynamic number

• Choose **Dynamic number**.

xtension number		×
C Static number		
Prefix:	123	
Call Type:	Call Radio	•
Channel:	Auto Detect	<b>v</b>
Radio:	Detected by Radio ID	-
		OK Cancel

#### Prefix

Specify a prefix to type in on the keyboard.

#### Call Type

Select the call type from the drop-down list.

• Call Radio

Select this type to make a phone call to a radio.

#### • Call Group

Select this type to make a phone call to a group.

Call Phone

Select this type to make a phone call to a phone number.

Channel

Select the channel to make a group phone call through (available for Group Calls only).



# 3.2.3 Conference Configuration

• Click the **Configure** button (6) to set conference parameters:



#### Max Call Duration

Enter the maximum time allowed for the conference, in minutes.

#### Automatic Voice Detection

Select this option to enable automatic voice detection during a conference call.

#### Automatic Gain Control

Select this option to enable automatic gain control during a conference call. In the list on the right, select the desired gain level, in dB.

#### Automatic Noise Reduction

Select this option to enable automatic noise reduction during a conference call.

#### 3.2.4 Voice Message Loop Settings

• Click the **Configure** button (7) to configure Voice Message Loop Settings:

Note: These settings apply if the Voice Message task is enabled or the Voice Message or Text to Speech actions are selected in an Alarm Management rule.

Voice Message Loop Settings	×
<ul> <li>✓ Play intro message</li> <li>Play voice message this many times:</li></ul>	
ОК	Cancel



- Play intro message
   Select this option to play an introduction message before playing the voice message itself.
- Play voice message this many times
   Specify how many times to play the voice message.
- Set delay between voice messages
   Select this option to set a delay between repeated voice messages.

## 3.2.5 Phone Calls Options

- On the main menu, click **Tools > Options**.
- In the **Options** dialog box, click the **Phone Calls** tab.

	ncoming teleph ber of Recent			10	<u>+</u>
Ringtone co	nfiguration			1	<u>.</u>
Incoming Call	Call Waiting	Held Call			
Call Prior	ity	Ringtone	Ac	tion	
Normal:		<u>Default</u>	►	Play	
Emergeno	:y:	Default	►	<u>Play</u>	
High:		<u>Default</u>	►	<u>Play</u>	
Low:		<u>Default</u>	•	<u>Play</u>	

#### Queue all incoming phone calls

Select this option so that when the phone line is busy, incoming calls will be queued rather than rejected.

#### Show this number of Recent Phone Calls

Enter the number of items to display in the list of recent calls. The list of recent phone calls appears when you click the arrow on the right of the dial string in the Contact Dialer box.

#### **Ringtone configuration**

On the Incoming Call (Call Waiting) tab:

- Click a corresponding link in the **Ringtone** column, and from the pull-down menu, select either **Set Default**, **Set Custom**, or **Disable**. If you select **Custom**, in the dialog box that opens, browse for the audio file on the local PC and click **Open**.
- Click a **Play** link in the **Action** column to play back the corresponding ring tone.



On the **Held Call** tab:

• Remind after

Enter the timeout, in seconds, that will be used for playing the reminder tone when a call is on Hold.

• Ringtone

Specify the reminder tone to be played when a call is on Hold.

#### 3.2.6 Adding Extensions

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

dministration	Phone Calls					6
Server A		Configuration Extensions Call Redirection Phone Contacts Dial Plans				
🔣 License	🔁 Add 📑 Edit 🛛 🗙					fault Settings
📴 Database	Туре	User Extension	User Name	First Name	Last Name	Display Name Logical Groups
Systems 4	Dispatch Cente	1234	1234			Internal PBX
Age System Bridge 4 *	🗙 🔊 SIP Phone	2408	John	John	Bingham	John B.
- Finite cals	🗙 🔊 SIP Phone	2409	2409			Walt
320 Custom Fields	🗙 🔊 SIP Phone	Phone User			×	Eugene
- 👋 Modbus TCP Connections 📃 2	🗙 🔊 SIP Phone	Phone user			^	Prune
- 🗱 Virtual Modbus Devices		General Logic	al Groups Custe	om Fields		
- F IP Cameras	3					
- 40 Public Announcements	Ŭ Ŭ	User Extensio	n: 2408			
- Telemetry		User Name:	John			
a						
		User Passwor	d: ••••••			
Voice Dispatch		Password (rep	eat): •••••			
a voice Disputch		First Name:	John			
Location Tracking						
B COCONON PROCEEDIng		Last Name:	Bingham			
🔓 Job Ticketing		Display Name	John B.			
Route Management						
Text Messages				OK	Cancel	
Voice Recording						
Voice Recording						
Voice Recording	1					

In the **Phone User** dialog box, specify the following parameters:

User Extension

Enter the extension number that will be used by the phone user.

User Name

Enter the user name that will be used by the phone user.

User Password

Enter the password for the phone user to be authenticated by the phone system.

Password (repeat)

Enter the password again.

- Fist Name/Last Name/Display Name
   Enter the first, last and display names of the phone user.
- In addition, on the **Logical Groups** tab, specify logical groups for the phone user.
- On the **Custom Fields** tab, specify the desired values for the custom fields.



## 3.2.7 Call Redirection

If a dispatcher doesn't take a phone call within the set period or they have changed their status to unavailable, the call is automatically forwarded to a specified dispatcher, radio, radio group, or phone account. This can be useful during night shifts when no dispatcher is available.

• Click Administration (1), Phone Calls (2), Call Redirection (3), Add (4)

File View Map Tools Help	
Administration	Phone Calls
	Confurnations Extensions Call Redirection Phone Contacts Dial Plans     Confurnations Extensions Call Redirection Phone Contacts Dial Plans     Confurnation Extensions Call Redirect to     Redirect Call     Redirect Call     Redirect Call     Redirect to:     Type:     Radio Group     System:     Co1     Destination:     Redirect     Normal     Supple
Voice Recording	
Reports	
Event Viewer	OK Cancel
9 Radio Allocation	Imit with at Record 0 of 0 p in imit at intervention       initiative       initiative       If Licensed too demo (Walt) (Demo License)

In the Redirect Calls dialog box, specify the following parameters:

#### Call to

Destination

From the drop-down list, select the dispatcher or dispatcher group.

Timeout

Specify the time period, in seconds, defining how long to wait until the dispatcher answers a call.

#### **Redirect to**

• Туре

From the drop-down list, select one of the following:

• Decline

The calls will be declined.

• Dispatcher

The calls will be redirected to a specified dispatcher or dispatcher group.

• Radio unit

The calls will be redirected to a specified radio.

#### • Radio Group

The calls will be redirected to a specified radio group.



#### • Phone account

The calls will be redirected to a phone account from the phone book.

#### Radio System

If a radio group is selected as the redirection destination, select the radio system over which to make a call to the specified radio group.

#### Destination

From the drop-down list, select a particular dispatcher/dispatcher group, radio, radio group, or phone account, depending on what you have selected in the **Type** field.

#### Priority

If a radio or radio group is selected as the redirection destination, select the priority with which the call will be made over the radio system.

#### 3.2.8 Phone Contacts

In addition to SIP extensions, the phone contacts can also be used in your Phone Connect system.

- Go to Administration (1), Phone Calls (2).
- In the **Phone Calls** pane, click the **Phone Contacts** tab (3), and then **Add** (4).

File View Map Tools Help						
Administration	Phone Calls					👲 🕪 🕒
Server	Jack Add Jack Edit	Extensions Call Redir Delete E Group User Name	ection Phone Conta ping Y Auto Filter First Name		Display Name	Logical Groups
→ Systems → System Bridge → Phone Calls ← 2 ↓ Tasks >	v 4	Phone Contact General Logical G	roups Custom Fields	×	Walt Eugene 3	
Voice Dispatch		User Extension: User Name:	5548 Pip			
Location Tracking		First Name: Last Name: Display Name:	Philip Wilson P. Wilson			
Route Management			L			
Voice Recording						
Reports			0	K Cancel		
Fig Radio Allocation	1					
Administration	Hi Hi A Record 1 of					F
🐻 Connected 🛞 📫 🕵 🅵 🕱 Admin	istrator 🛛 📑 Licensed to: d	demo (Walt) (Demo Li	cense)			🕑 Active 🕶

In the **Phone Contact** dialog box, specify the following parameters:

User Extension

Enter the extension number for the phone contact.

User Name

Enter the user name for the phone contact.

• **Fist Name/Last Name/Display Name** Enter the first, last and display names of the phone contact.



- In addition, on the Logical Groups tab, specify logical groups for the phone contact.
- On the **Custom Fields** tab, specify the desired values for the custom fields.

## 3.2.9 Dial Plans

In order to restrict incoming and outgoing calls as well as set priority for calls, dial plans can be used in your Phone Connect system.

- Go to Administration (1), Phone Calls (2).
- In the **Phone Calls** pane, click the **Dial Plans** tab (3), and then **Add** (4).

File View Map Tools Help	
Administration	Phone Calls 🔮 🏟 🕒
Systems	Configuration Extensions Cal Redirection Phone Contacts Dial Plans Cadd D Edit X Delete To Grouping X Auto Filter Delault Settings Name Fadora Dial Plan X
Age System Bridge Phone Calls Tasks Call Calls	Mais 4 General Patterns Inheritance Name: Droite
Voice Dispatch	Description: Restrict dialing for Bob's group
🔡 Job Ticketing	
Route Management	
Text Messages     Voice Recording	I Apply to Outgoing calls (Destination number)
Reports	
Event Viewer	
Radio Allocation       Administration	1
🗇 Connected 🔊 🖻 💁 💁 🦉 Administra	Licensed to: demo (Walt) (Demo License)

In the **Dial Plan** dialog box, specify the following parameters:

Name

Enter a name for the dial plan.

Description

Enter a description for the dial plan.

- Apply to Incoming Calls (Caller number)
   Select this check box to apply the dial plan to incoming calls from the numbers specified in the patterns.
- Apply to Incoming Calls (Destination number)
   Select this check box to apply the dial plan to incoming calls to the numbers specified in the patterns.
- Apply to Outgoing Calls (Destination number)
   Select this check box to apply the dial plan to outgoing calls to the numbers specified in the patterns.



• Click the **Patterns** tab.

Dial Plan		×
General Patte	rns Inheritance	
* - any number o ? - one character		
*411???		×
Call Priority:	Normal	•
		OK Cancel

- Specify the pattern that will be used to match the numbers in the dial string or the incoming call numbers.
- Call Priority

From the drop-down list, specify the priority for the calls corresponding to the specified patterns.

• Click the **Inheritance** tab.

Dial Plan	×
General Patterns Inheritance	
Call Priority Profile Name	
Emergency Fedora	
Inherit Mals	
Emergency High	
Normal	
Low	
ОК	Cancel
OK	Cancer

On this tab, you can select the profiles to include in the dial plan you are adding/editing.

Call Priority

From the drop-down list, select the priority for the inherited dial plan.



# 3.3 MOTOTRBO CPS

This section describes how to configure MOTOTRBO repeaters and radios using MOTOTRBO CPS.

### 3.3.1 Repeater

Note: The Motorola's Digital Phone Patch license is not required for repeaters.

If the NAI protocol is used in your radio system, then:

- In the Set Categories pane, select Zone/Channel Assignment> Zone>Zone Items>Channel.
- In the right pane, select the **Network Application Interface Phone** check box.



## 3.3.2 Subscriber Radio

#### 3.3.2.1 Motorola Phone System

- In the Set Categories pane, select Systems > Phone Systems.
- In the right pane, click the plus sign button and add the corresponding phone system.
- In the left pane, select the phone system you have added.



File     Device     Licenses     Tools     Help       Image: Comparison of the second se	Image: Image	
DP4801e  Phone Systems  Phone_100* Set Categories	General DTMF	×
Dob Tickets     Dob Tickets     Dob Tickets     Dob Tickets Options	⊙ General	
<ul> <li>Job Tickets Templates</li> <li>Systems</li> <li>Signaling Systems</li> <li>User Defined 5 Tone</li> <li>5 Tone Systems</li> </ul>	System Name Phone_100 Gateway ID 100  Access Code	
<ul> <li>MDC Systems</li> <li>Quik-Call II Systems</li> <li>Digital Emergency Systems</li> <li>Capacity Plus Emergency Syste</li> <li>Phone Systems</li> <li>Phone_100 </li> <li>Encoder</li> <li>Decoder</li> </ul>	OTMF     Pretime (ms) 500     TX Tone Duration (ms) 120     TX Tone Interval (ms) 80     Pause Duration (ms) 4000	
Validation Results(1*) Warning Messages Search Results	Help Serial Number: 871TRVP	2888

• 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	÷
TRBOnet Local Port:	50000	<b>‡</b>
Master Repeater Co	nnection Info:	

#### Access Code and Deaccess Code

These codes must be the same on all the radios and reflect the corresponding values set in the Dispatch Console.

#### • 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**.

• In the Set Categories pane, select Zone/Channel Assignment> Zone>Zone Items>Channel.



File Device Licenses Tools Help	립립 극표팀 수립 ☆ ★립 Clone Elpress Update Register Activate	
DP4801e  Zone  Zone  Zone1  Zone Items  Channel Set Categories	ell* General RX/TX	×
✓	(∞) General	î
General     Job Tickets     Systems	Channel Type Digital Channel Name Channel1	
Encoder     Decoder	Voice Announcement File None Dual Capacity Direct Mode	
Contacts     D Contacts     D RX Group Lists     Tone/Channel Assignment	Timing Leader Preference Bigible Scan/Roam List None	
Zone     Zone     Zone     Zone     Zone     Zone	Auto Scan No Color Code 1	
Channel Pool     Coan Lists	Repeater/Time Slot 1 V	
Capacity Plus Lists	ARS Disabled	
• • • • •	Window Size 8	-
Validation Results(1*) Warning Messages Search Results	Help Serial Number:	871TRV/D888

- In the right pane:
  - Phone System

Select the phone system you have previously specified.

#### 3.3.2.2 TRBOnet Phone System

If your radio system uses TRBOnet Phone System, make sure that the following parameters are appropriately configured in the radios that are used as control stations and subscriber radios.

• In the Set Categories pane, select General > GeneralSettings

Open Save Read	) 월 <b>답답 ──대 대 · · · · · · · · · · · · · · · · ·</b>	
DP4801e   General Settings*		×
Set Categories	General CWID Audio Profile Microphone Backlight Battery Saver Alerts Persistent LRRP Requ	ests
▼	Lone Worker Power Up Password and Lock Front Programming Password Delete All 5 Tone ID	
Device Information		
▼ 🗍 General	(A) General	â
🗋 Welcome Bitmap	Radio Alias Motorola	- 1
Language Packs		
General Settings	Radio ID 1	
Accessories	GNSS	
Control Buttons	GNSS GPS/GLONASS/QZSS	
Text Messages	Private Calls 🗸	
Telemetry	Site Search Timer (sec) 15	
C Menu	ARS Initialization Delay (min) 0	
Security	TX Preamble Duration (ms) 960	
Network	TX Inhibit Quick Key Override	
	Monitor Type Open Squeich	-

- In the right pane, make sure the **Private Calls** check box is selected.
- In the Set Categories pane, select Zone/Channel Assignment> Zone>Zone Items>Channel.



File Device Licenses Tools Help	→ 目     → 目     → 日     → 日       Write     Clone     Express     Update     Register	
DP4801e  Zone Zone1  Zone Items	Channel1*	×
Set Categories 📮	General RX/TX	
<ul> <li>Configuration*</li> <li>Device Information</li> <li>General</li> </ul>	© RX/TX RX TX	^
Dob Tickets     Systems     Decoder     Decoder     Contacts	Frequency (MHz)         300.025000         Offset (MHz)         Frequency (MHz)         300.025           0.000000         Copy         Cop	3000
Cone     Cone	Group List DigitalRXGroupList/List  Contact Name Call Emergency Alarm Indication Emergency Alarm Ack No VOX No Emergency Call Indication	
Channel Pool     Scan Lists     Capacity Plus Lists	Energency Call Decode No TOT (see) 60  Allow Interruption 9  XInterruption 9  XIII  XIIII  XIIIII  XIIIIIIIIIIIIII	
·	Admit Critering [Color C In Call Critering TX Inte	
Validation Results(1*) Warning Messages Sea	arch Results  Help	Serial Number: 871TRVP888

- In the right pane, navigate go to **RX/RTX** section.
- Select both the **Allow Interruption** and **TX Interruptible Frequencies** check boxes.
- From the Admit Criteria drop-down list, select 'Color Code Free'.
- From the **In Call Criteria** drop-down list, select 'TX Interrupt'. If the radio will be used as a control station, select 'Follow Admit Criteria'.

#### Making calls from radios

When TRBOnet Phone System is used, making phone calls from a radio can be done in two ways:

- 1. While pressing and holding the PTT key, dial a number ending with a **#**. Then release the PTT key. For example, **700#**.
- 2. Send a private message to the dispatcher in the format *sip:phone\_number*, for example, **sip:700**.
- To terminate the phone call, press and hold the PTT key, press the **#** key, and then release the PTT key.