

RadioPro! Solo

Software Installation and Configuration Guide



Document # S2-61568-612
For Version 6-8 Software

Contact Us

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Warnings

Software menus, menu options, folders, pages, and parameters

Software parameter values

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SYSTEM OVERVIEW

RadioPro provides remote access to 2-way radios via IP Networks. This Dispatch over IP (DoIP) solution consists of PC-based software allowing voice and data communications between PC users and 2-way radio subscribers. Communications with radio subscribers is also possible for remote mobile users using Android or iOS devices. A RadioPro system consists of at least one RadioPro IP Gateway (server) and at least one client (Dispatch, Solo, Talk, or Talk for Mobile) with an IP network connecting the RadioPro components.

SYSTEM COMPONENTS

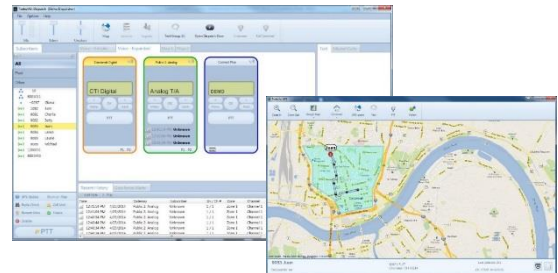
CTI's Dispatch over IP system is based on Server-Client architecture. System components are described below:

- **RadioPro IP Gateway Kit** (CTI Part # S2-61815) is the hardware interface that connects a mobile radio (control station) to an IP network. The IP Gateway is the **Server** for the control station radio connected to it. Each control station radio used for voice requires one IP Gateway. System components, such as IP Gateways and clients (Dispatch, Solo, Talk, or Talk Mobile), may be located together or separated geographically and connected via a Wide Area Network (WAN) or Virtual Private Network (VPN). An optional license can be purchased for the IP Gateway to allow users of Solo, Talk, and/or Talk for Mobile client applications to connect to the two-way radio system. Each IP Gateway requires a static IP address. For more information, see the following documents:



[RadioPro IP Gateway - Installation Guide, Document # S2-61781](#)
[RadioPro IP Gateway Data Sheet](#)
[RadioPro System Brochure](#)

- **RadioPro Dispatch Client** (CTI Part #s S1-61770 Core, S1-61771 Voice Module, S1-61772 GPS Module, S1-61773 Telemetry Module, S1-61774 Text Messaging Module) is a dispatch console for PCs that provides voice dispatching to multiple simultaneous radio channels or talk groups, as well as GPS/AVL, Telemetry, Text Messaging, and Voice Logging. Windows 10 Pro, 8 Pro or Windows 7 Pro operating system is required. This application can be used with either Motorola MOTOTRBO or Kenwood NEXEDGE systems. System components, such as Dispatch clients and IP Gateways, may be located together or separated geographically and connected via a Wide Area Network (WAN) or Virtual Private Network (VPN).



For more information, see the following information:

[RadioPro Dispatch Client Installation and Configuration Guide, Document # S2-61785](#)
[RadioPro Dispatch Client User Guide, Document # S2-61786](#)
[RadioPro Dispatch Client Data Sheet](#)
[RadioPro System Accessories Catalog](#)
[RadioPro System Brochure](#)

- Solo Client** is a software application for PCs and notebooks that provides voice dispatching to a single radio channel or talk group. The virtual radio head duplicates the full functionality of a XPR4550/5550 control station, including channel steering. Other features include Voice Logging for 24 hours, Text Messaging, and channel steering. It requires Windows 10, 8, 7, or XP operating system. This application can be used with only Motorola MOTOTRBO systems. The use of this application requires a license installed on the IP Gateway. The license will permit some number of simultaneous Solo, Talk, and Talk Mobile application users to connect to the radio system. System components, such as clients and IP Gateways, may be located together or separated geographically and connected via a Wide Area Network (WAN) or Virtual Private Network (VPN).



For more information, see the following documents:

[RadioPro Solo Installation Guide, Document # S2-61568](#)

[RadioPro Solo User Guide, Document # S2-61432](#)

[RadioPro Solo Data Sheet](#)

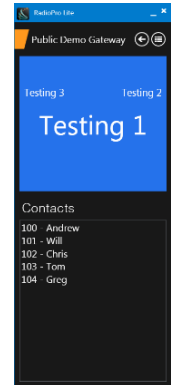
[RadioPro System Brochure](#)

- Talk for Windows PC** is a software application for PCs and notebooks that provides voice dispatching to a single radio channel or talk group. Other features include Voice Logging for 24 hours, Text Messaging, and channel steering. It requires Windows 10, 8 or 7 operating system. This application can be used with either Motorola MOTOTRBO or Kenwood NEXEDGE systems. The use of this application requires a license installed on the IP Gateway. The license will permit some number of simultaneous Solo, Talk, and Talk Mobile application users to connect to the radio system. System components, such as clients and IP Gateways, may be located together or separated geographically and connected via a Wide Area Network (WAN) or Virtual Private Network (VPN).

For more information, see the following documents:

[RadioPro Talk for PC Data Sheet](#)

[RadioPro System Brochure](#)



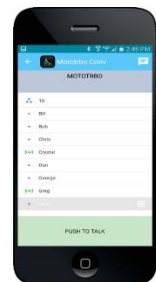
- Talk for Mobile devices** is a mobile app for Android and iPhone/iPad that provides remote access to a 2-way radio system for voice communications, text messaging, and locating another user. This application can be used with either Motorola MOTOTRBO or Kenwood NEXEDGE systems. The Mobile app is useful over cellular or Wi-Fi networks when you are on-the-go and outside the coverage of your radio system, yet still need radio communications. The use of this application requires a license installed on the IP Gateway. The license will permit some number of simultaneous Solo, Talk, and Talk Mobile application users to connect to the radio system.

For more information, see the following documents:

[RadioPro Talk for Mobile Devices How-to-Guide](#)

[RadioPro Talk for Mobile Devices Data Sheet](#)

[RadioPro System Brochure](#)



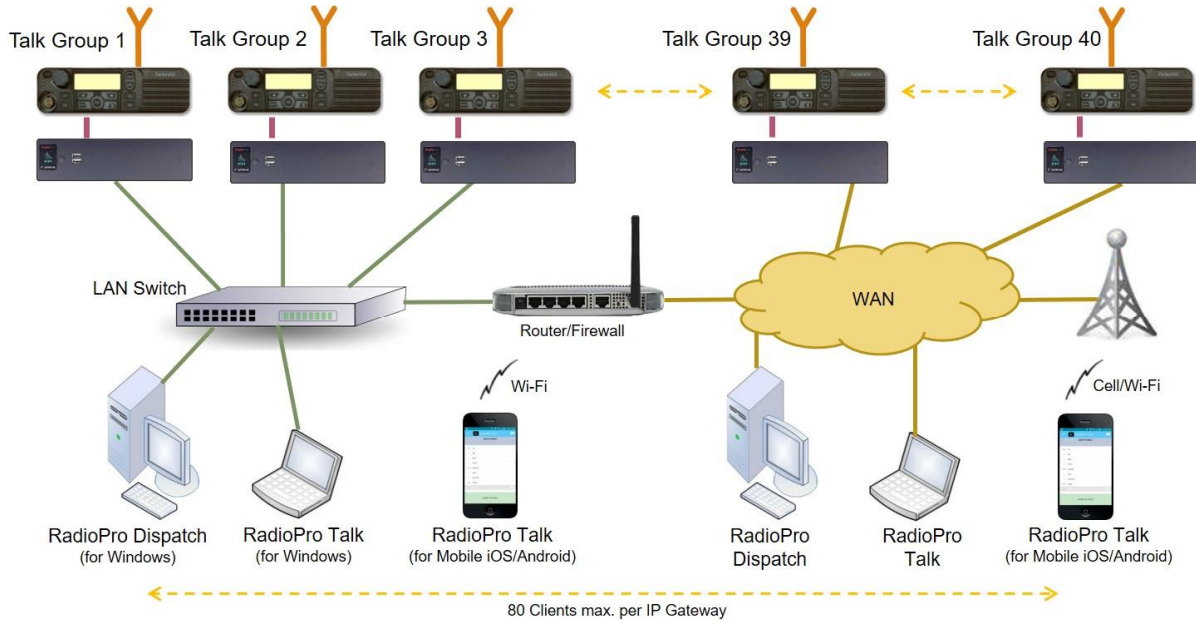
- **Control Station Radio** - A control station radio must be used as the interface to the radio system, and connects to a RadioPro IP Gateway using the rear accessory/communications port. Each control station radio used for voice requires one IP Gateway. Radio models that can be used for a Control Station radio and provide full radio functionality from a RadioPro client include:
 - Kenwood NEXEDGE: NX-700/800
NX-720/820 (NX-700/800 is preferred)
 - Motorola MOTOTRBO: XPR5550/5580 (North America)
DGM5500/8500 (Latin America)
DM4600/4601 (Europe)
XiR M8260/M8268/M8660/M8668 (Asia Pacific)
- **Personal Computer or Workstation** is required to host the RadioPro Dispatch, Solo, or Talk for PC clients. Console accessories may include microphone and speakers (or headset), Push-to-Talk footswitch, and touch screen monitor.

ARCHITECTURE

The IP Gateways interface the radio system to an IP network. One IP Gateway is required for each control station radio used for voice. The IP Gateways and control station radios can be centrally located or scattered among different locations using a Virtual Private Network (VPN) or Wide Area Network (WAN) such as the Internet.

Each IP Gateway in a RadioPro system acts as the server for the Control Station Radio connected to it, and ensures easy wide-area deployment. Since there is not a server PC, the architecture reduces “single point-of-failure” concerns.

A system may have a mixture of RadioPro Dispatch, Solo, and Talk clients for PCs, as well as RadioPro Talk for Mobile apps running on mobile devices. These Clients may be centrally located or scattered among different locations using a Virtual Private Network (VPN) or Wide Area Network (WAN) such as the Internet.



System Maximum Build-out

A RadioPro system may have maximum components listed below.

System Component	Maximum
Dispatch Clients	20
Simultaneous Solo, Talk, and Talk for Mobile client connections per IP Gateway	80
IP Gateways	50

System Planner Document and Template

The System Planner (Document # S2-61645) includes examples for various radio network topologies, and should be consulted if the RadioPro Dispatch client is being deployed.

Use the System Planner Template (located at the end of this document) in the planning phase of a project to record IP addresses, usernames, passwords, serial numbers, and device names.

INTRODUCTION

The RadioPro Solo client presents a virtual radio on a PC's desktop. With a PC or Laptop, and a network connection, group or private calls are as easy as making a selection from the subscriber list, then clicking the Push-to-Talk button. The RadioPro Solo client can be used for simultaneous radio sharing instead of tone remotes; this simpler solution allows users of the shared radio to have push-to-talk and listen capabilities, as well as access to all other radio functions. RadioPro Solo can also be used for situations when someone is outside of radio coverage, yet still needs to communicate on the radio system, such as:

- Supervisory remote monitoring of radio channels
- Underground or building facilities that prevent radio communications
- A home office that is beyond the coverage area of a radio system

INSTALLATION OF RADIOPRO SOLO CLIENT MAY NOT BE REQUIRED

A RadioPro system requires at least one RadioPro IP Gateway and installation of at least one client, such as RadioPro Solo, Dispatch, Talk (for PCs and notebooks), or Talk Mobile (app for smart mobile devices). All client types may be installed in the same RadioPro System. Installation of the Solo client may not be necessary if only other clients are installed.

WHAT YOU WILL NEED

PCs that will be used to run the RadioPro Solo client must have the following:

- Windows XP, 7, 8, or 10 Operating System
- IP Network Interface, 10Mbps or faster
- Speaker (internal to PC or powered external) or Headphones
- Microphone, see *Connect a Microphone* on Page 9 for recommended microphones

COMPATIBILITY

The RadioPro Solo client is compatible with IP Gateways having version 5 through 8 software.

RADIOPRO SOLO CLIENT SOFTWARE INSTALLATION

The RadioPro Solo Client is available from the following sources:

- Distribution CD - RadioPro IP Gateway, Part Number S2-61565.
- Distribution CD - RadioPro Dispatch, Part Number S2-61506.
- Download Site - www.ctiproducts.com/RadioProUpgradeDownloads.html

The RadioPro Solo Client may be installed on as many PCs as needed. RadioPro Solo client licenses are factory-installed in the RadioPro IP Gateway. Any client connections exceeding the installed license quantity will have a limited connection time of 5 minutes. Additional client licenses may be purchased at any time. Client license upgrade instructions can be displayed by clicking **Upgrade License** under the **Settings** menu.

INSTALLING SOLO CLIENT FROM THE DOWNLOAD SITE

Perform the following steps to download the RadioPro Solo Client software from our web site:

1. Open a web browser (such as Firefox or Internet Explorer) on your PC.
2. In the URL window, type: www.ctiproducts.com/RadioProUpgradeDownloads.html and then press **Enter** on the keyboard.
3. When the **Downloads** page opens, click on **Download** for the appropriate RadioPro Solo client version. For new installations, download the latest version.
4. When the **File Download** window opens, click on **Open** to download and install the zipped installation files. An unzip utility may execute to view the downloaded files. If this happens, double-click the `setup.exe` file in order to complete the installation. During installation, the **RadioPro Client** icon will be placed on your desktop.

CONNECT A MICROPHONE


A microphone will be needed to transmit audio from a RadioPro Client. A Client can use any of the following microphone options:

- USB external mic (recommended), such as:
 - InSync Technologies, Buddy DesktopMic 7G PTT (Motorola)
- Analog external mic

A built-in internal mic is NOT recommended.

RUN THE RADIOPRO SOLO CLIENT

Did you connect a microphone yet? If not, go to the previous section *Connect a Microphone*.

1. Double-click the RadioPro Client icon  on the desktop.
2. The **Connect** window will be displayed as shown to the right.
 - a. Use the **RadioPro Gateway** field to enter the IP Address of the RadioPro IP Gateway. If RadioPro Solo Clients will be placed outside your organization's Local Area Network, the IT Administrator must configure port forwarding within the firewall or router connecting the RadioPro IP Gateway module to the ISP (Internet Service Provider). Since the connection must pass through a firewall with a port forwarding rule, the IP address parameter must be entered using the following format:

aaa . bbb . ccc . ddd : ppppp

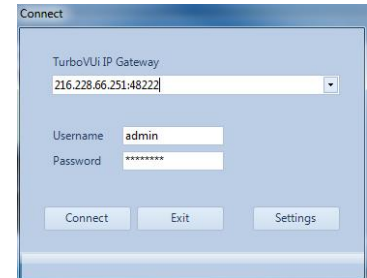
where aaa, bbb, ccc, and ddd are the four octets of the firewall IP address, and ppppp is the port number. The following example would be used to connect to the demo RadioPro IP Gateway at CTI:

216 . 228 . 66 . 251 : 48222

Since 48222 is the default port number used by RadioPro IP Gateways and RadioPro clients, the port number is not necessary in the example above.

An alias name can be created for the IP address and port number specified above by clicking the **Settings** button on the above window, and then choosing the **Network Aliases** tab.

- b. For **Username**, use `admin`.
 - c. For **Password**, use `admin`. (This password can be changed: from the **Settings** menu; click **Gateway**, then the **Accounts** tab, then select the **Admin** account.)
3. Click the **Connect** button. The Status Bar at the bottom of the RadioPro Solo client will indicate the User ID, as well as the connection status of the Gateway and the Radio **as indicated below**.

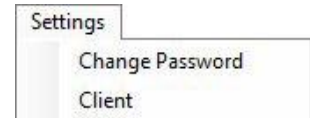


RADIOPRO SOLO CLIENT CONFIGURATION

SETTINGS MENU

Change Password

This menu item allows the current user to change his password.

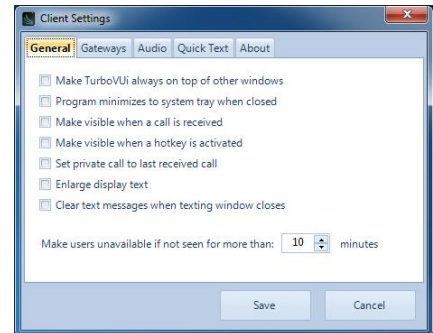


Client

General tab

The **General** tab of this menu item displays options for customizing the operation of the RadioPro Solo Client program.

- **Make RadioPro always on top of other windows**
This option will keep RadioPro above all other windows that are open on the client PC.
- **Program minimizes to system tray when closed**
When the user clicks on another window outside of RadioPro, RadioPro will minimize.
- **Make visible when a call is received**
When RadioPro is minimized or behind another window when a call is received, then it will appear in front of the other windows.
- **Make visible when a hotkey is activated**
If RadioPro is minimized or behind another window when a hotkey is pressed, then it will appear in front of the other windows.
- **Set private call to last received call**
This option will automatically set the Recipient list to the last received transmission channel.
- **Enlarge display text**
This option enlarges the display text on the Virtual Radio when a message is transmitted.
- **Clear text messages when texting window closes**
This option will clear out the text messages displayed when the *text messaging* window is closed.

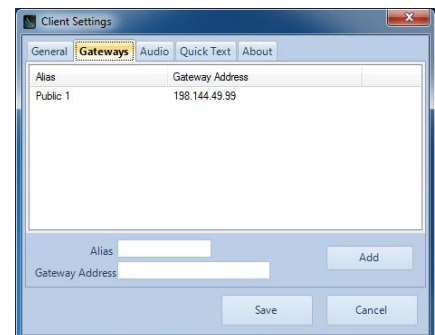


Gateways tab

The Gateways tab of this menu item allows alias names to be defined for use during log-in (instead of entering numerical IP addresses).

To set up an alias:

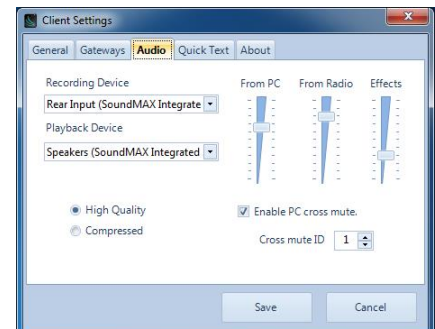
1. Enter the desired *Alias* name
2. Enter the *Gateway Address*
3. Click the **Add** Button



Audio tab

The Audio tab of this menu item allows the user to specify which Recording Device and Playback Device, as well as the quality of the audio. Along with these settings, the user also has the option to determine how much of each signal (From PC, From Radio, and Effects) is played by adjusting the moving sliders up or down.

When selecting audio, the user can select the Microsoft Sound Mapper which will automatically use the device the PC has set as default.



It is recommended that the microphone being used is selected in the *Recording Devices* drop-down box.

For **Audio Quality**, select **High Quality** or **Compressed**. See the following table for a comparison of these two modes of audio transfer.

	High Quality	Compressed
Bandwidth per voice stream (one talk group)	22kBytes/sec	2.2kBytes/sec
Bandwidth for 10 voice streams (10 talk groups)	220kBytes/sec	22kBytes/sec
Best use	Highest quality audio between radios and RadioPro Clients	Most efficient use of IP network bandwidth

Enable PC Cross Mute is useful if there are multiple computers in the same room and the user does not wish to hear audio being played back on all of the computers. Adjacent PCs should have the same Cross Mute ID selected.

Quick Text tab

The **Quick Text** tab of this menu item will allow the user to define quick text messages that can be used in the Text Messaging feature. For more info on Text Messaging, see *Text Messaging* in the *View Menu* section above. To remove *Quick Text* items right click on the item and select remove.

About tab

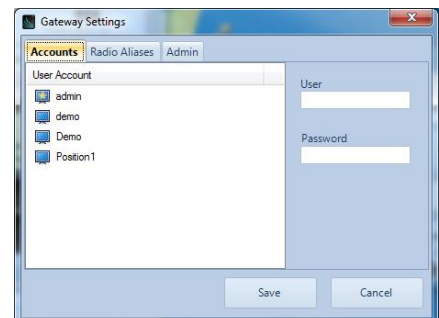
The **About** tab of this menu item shows the **Part Number** and **Version** of the client software.

GATEWAY

NOTE: This menu is available only for a user logged in as õadminö

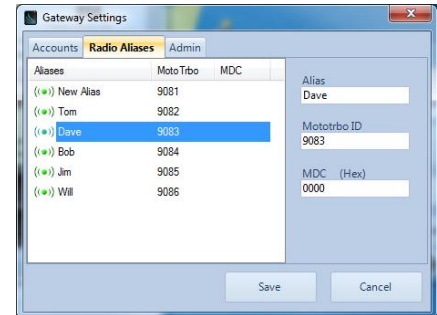
Accounts

The **Accounts** tab of this menu item allows a client logged in as õadminö to edit current users as well as add new users to the Gateway. Click on **Write Settings to Gateway** when finished.



Radio Aliases

The **Radio Aliases** tab of this menu item allows a Client logged in as `admin` to add or edit an alias name for a user.



Admin

The **Admin** tab of this menu item allows a client logged in as `admin` to see information about the Gateway as well as the ability to Reboot the Gateway or use Remote Assistance.

Update License

NOTE: This menu is available only for a user logged in as `admin`

The **Update License** menu item allows the user to request the current license to be stored on their PC, or the ability to set the license from a file currently available on the PC. See Appendix for more details.

HELP MENU

About

The **About** menu item shows the *Part Number* and *Version* of the client software.

Remote Support

The **Remote Support** menu item displays contact information for technical support.

This window also provides a **Launch Remote Support** button that will download and install a temporary version of *Teamviewer*. *Teamviewer* is used to allow a CTI Products support Engineer to remotely log into your PC for support issues. Please call CTI Products before *Teamviewer* is launched.

ADDING A DESKTOP SHORTCUT

A Desktop shortcut can be implemented that includes the RadioPro IP Gateway address, Username, and Password. This can be useful if the user wishes to bypass the RadioPro Solo Login window. Use the following command line form in the Properties window of the RadioPro desktop icon (Properties > Shortcut tab > Target):

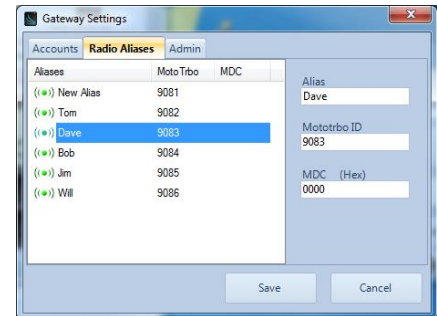
```
RadioPro.exe -a ipaddress -u username -p password
```

ALIAS NAMES

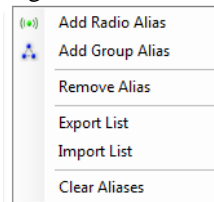
ADDING INDIVIDUAL ALIAS NAMES

To build an Alias Table, one entry at a time, use the following steps:

1. From the **Settings** menu, choose **Gateway**, and then choose the **Radio Aliases** tab to show the following window:



2. Right-click on the table to show the following menu options.

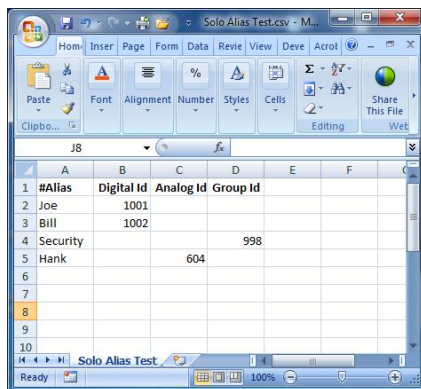


3. For each **Alias Name** to be entered, choose either **Add Radio Alias** or **Add Group Alias**.

ADDING ALIAS NAMES USING A CSV FILE

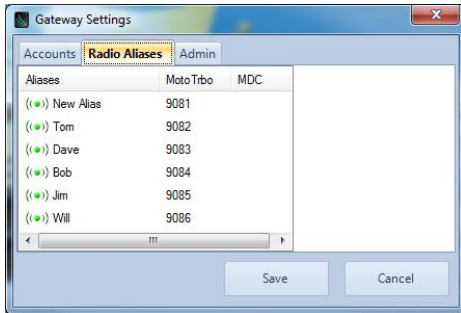
To build the Alias table from a CSV (Comma Separated Values) file, use the following steps:

1. Create a CSV file with four headings in Row 1, exactly as indicated below.

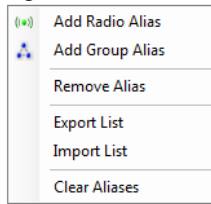


2. In subsequent rows, add an **Alias** name in Column A, and an **ID** in either Columns B, C, or D.
3. Save the CSV file and close it.

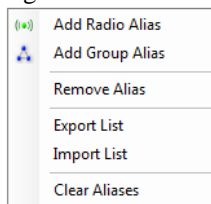
- From the **Settings** menu, choose **Gateway**, and then choose the **Radio Aliases** tab to show the following window.



- Right-click on the table to show the following menu options.



- Click on **Clear Aliases** to clear all of the existing *Alias Names*.
- Right-click on the table to show the following menu options.



- Choose **Import List**, and then select the file created in Steps 1-3 above.

FEATURE AVAILABILITY

Depending on MOTOTRBO System Type or RadioPro Solo edition, some features may not be available. Use the following tables to determine if a feature discussed in this document is not available.

FEATURES BASED ON MOTOTRBO SYSTEM TYPE

Use the following table to determine if a Solo feature is not available for a MOTOTRBO System Type.

<i>System Type</i> Feature	<i>Analog</i>	<i>Conv. Digital</i>	<i>Cap +</i>	<i>IP Site Connect</i>	<i>Linked Cap +</i>	<i>Connect Plus</i>
Group Call Tx and Rx	✓	✓	✓	✓	✓	✓
Private Call Tx and Rx	✗	✓	✓	✓	✓	✓
Voice Recording (Previous 24 hours)	✓	✓	✓	✓	✓	✓
Text Messaging	✗	✓	✓	✓	✓	✗
ARS (Radio Availability)	✗	✓	✓	✓	✓	✗
Full radio control	✓	✓	✓	✓	✓	✓

SYSTEM PLANNER TEMPLATE **PAGE 1 OF 2**

RadioPro IP Gateways

Parameters Common to all IP Gateways

ICU.exe Admin Password <small>for ICU.exe, default is %admin+</small>	Dispatch Client Password <small>for Dispatch client connections default is %user+</small>	NTP Server IP Address <small>Network Time Protocol</small>

Parameters Unique to each IP Gateway

GPS = GPS Data Revert.
Each IP Gateway supports 1 Voice & 1 GPS Data Radio.

	Name <small>IP Gateway name has max 2 lines, 24 chars per line</small>	Serial #	IP Address	Subnet Mask	Default Gateway
IP Gateway A	Example Gateway Name	1234	192.168.56.22	255.255.255.0	192.168.56.1
Voice Radio A0	Example Radio VR A0		192.168.10.1	255.255.255.0	
GPS Radio A1	Example Radio GPS A1		192.168.11.1	255.255.255.0	
IP Gateway B					
Voice Radio B0					
GPS Radio B1					
IP Gateway C					
Voice Radio C0					
GPS Radio C1					
IP Gateway D					
Voice Radio D0					
GPS Radio D1					
IP Gateway E					
Voice Radio D0					
GPS Radio D1					
IP Gateway F					
Voice Radio D0					
GPS Radio D1					
IP Gateway G					
Voice Radio D0					
GPS Radio D1					
IP Gateway H					
Voice Radio D0					
GPS Radio D1					
IP Gateway J					
Voice Radio E0					
GPS Radio E1					

If additional IP Gateways are needed, copy this page.

See next page for System Planner Template Page 2 of 2

SYSTEM PLANNER TEMPLATE **PAGE 2 OF 2**

RadioPro Dispatch Clients

See RadioPro Dispatch Installation and Configuration Guide, document # S2-61785 for more information.

Parameters Common to all Dispatch clients

<i>Administrator Password for Edit Mode</i>

Parameters Unique to each Dispatch client

<i>PC Name</i>	<i>IP Address</i>	<i>License #</i>	<i>Licensed IP Gateway Connections</i>

RadioPro Solo, Talk, and Mobile Clients

See [RadioPro Solo Installation Guide, Document # S2-61568](#), for more information.

Parameters Common to all Talk Clients

<i>Administrator Login Name</i> <small>Not Editable</small>	<i>Administrator Password</i> <small>default is %admin+</small>
admin	

<i>User Login Name</i> <small>default is %user+</small>	<i>User Password</i> <small>default is %user+</small>

If additional Solo, Talk, or Mobile client logins are needed, copy this page.