VIP-102B IP Solutions Setup Tool

Version 6.3.0.0

Reference Manual

Revision 3 - 06/30/2016

For latest updates to this manual please check our website at:
http://www.valcom.com/vipsetuptool/default.htm

then click on Reference Manual

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Overview

Valcom IP Solutions can be used to create full Internet Protocol (IP) paging systems. This is truly the most flexible approach to installing a paging system. By utilizing an existing data network, paging devices can be added at any location where a network drop is available. If the requirements of the paging system change, IP units can simply be disconnected and moved to their new location on the network. Device management is accomplished over the data network via a Windows based programming tool. Network programming makes it easy to adjust individual speaker volume, change system audio groups and other device configuration changes from a centralized location.

Valcom IP Solutions provide easy integration between IP and Analog systems. The Valcom networked Audio Ports provide a line level output which is suitable for connection to an auxiliary input on any self-amplified or centrally amplified paging system. This provides the ability to integrate multiple paging systems from other vendors into a single cohesive system. Components include a variety of SIP compliant one way paging and 2-way talkback speakers which feature call button capability, line level audio outputs for one way audio expansion, SIP compliant Ethernet based audio ports for connection to traditionally wired speakers and amplifiers, SIP based paging servers which allow SIP access of groups of paging zones, FXS and FXO endpoints for non SIP system access and a control I/O endpoint for interface to other equipment.

All of these endpoints feature the convenience of Power over Ethernet (PoE) operation.

The general procedure for programming Valcom IP devices involves the following steps:

- Install the devices on the network.

- Scan the network using the VIP-102B IP Solutions Tool to create an inventory of the available devices.

- Program the devices with IP addresses and other network information appropriate to the physical network on which the devices are installed.

- Rescan the network to allow the IP Solutions Tool to retrieve complete device configuration information.

- Configure the individual device settings within the IP Solutions Tool for each device on the network with the specific settings necessary for the paging system being installed.

- Upload the new configuration to each device from the IP Solutions Tool.

- Restart the device to enable the new configuration settings.

This document explains the programming options available for the various components of the Valcom IP Solutions product line.

System Requirements for Managed VoIP Products

- Network Hardware Requirements:

  10/100 Mbps Ethernet network

- Bandwidth Requirements:

  86 kbps per active One Way Page

  172 kbps per active Two Way Call

- TCP Requirements:

  Port 21 for FTP access

  Port 23 for Telnet access

  Port 22 for SSH and SCP access (secure)

  Port 80 for Web based access

- UDP Requirements:

  5 Bi-directional Ports (Factory default 4097, 4098, 4099, 4120, 4121)

- Multicast Requirements:

  IGMPv3 enabled network

  4 Multicast addresses (Factory default 239.1.1.2, 239.1.1.3, 239.1.1.4, 239.1.1.5)

- Power requirements for IP speakers:

  802.3af Power over Ethernet (PoE) compatible network switches or power injectors

- Power requirements for other Valcom Managed VoIP products:

  802.3af PoE compatible network switches or VIP-324 VoIP Device Power Supplies

- Other Suggested settings:

  Separate VLAN for optimal performance

  Provisions for Network Time Protocol (NTP) if utilizing syslog, VoIP clock/speakers

Term Definitions

Audio Group . a group of audio I/O channels combined for the purpose of sending voice or other audio to multiple channels simultaneously. A common audio group would be %all call+.

Channel . an addressable access point on a Valcom IP paging system endpoint. Endpoints may have one or more channels. These channels may be audio I/Os, FXO ports, FXS ports, I/O endpoints or SIP Servers. Each channel must be assigned a unique dial code. For example, a VIP-801 Page Endpoint has a single audio I/O that may be accessed by an assigned dial code, and therefore is a single channel device. By contrast, a VIP-824 Trunk Endpoint features four FXO ports that may be independently accessed by assigned dial codes, therefore it is a four channel device. Individual end points have unique IP addresses, however, depending upon the endpoint, each IP address may represent one, two or four channels.

Control Group . Control Groups allow users to combine relays from I/O Units into groups so that they may be controlled simultaneously. These are only used with the VIP-848 devices.

Device/Endpoint . a component of a Valcom IP paging system that connects to the Ethernet network.

Dial Code . a numerical address used to communicate with channels.   This is sometimes referred to as a Directory Number or Phone Number. All devices in the system must have the same length of dial code (number of digits).

DTMF . Dual Tone Multi-Frequency is the combination of two different frequencies to create one tone. This is also commonly called Tone dialing.

SIP (Session Initiation Protocol) . a standard network protocol for negotiating parameters for Voice over IP communication.

DSCP (Differentiate Services Code Point) -- Differentiated Services Code Point (DSCP) is a field in an IP packet that enables different levels of service to be assigned to network traffic. This is achieved by marking each packet on the network with a DSCP code and appropriating to it the corresponding level of service.
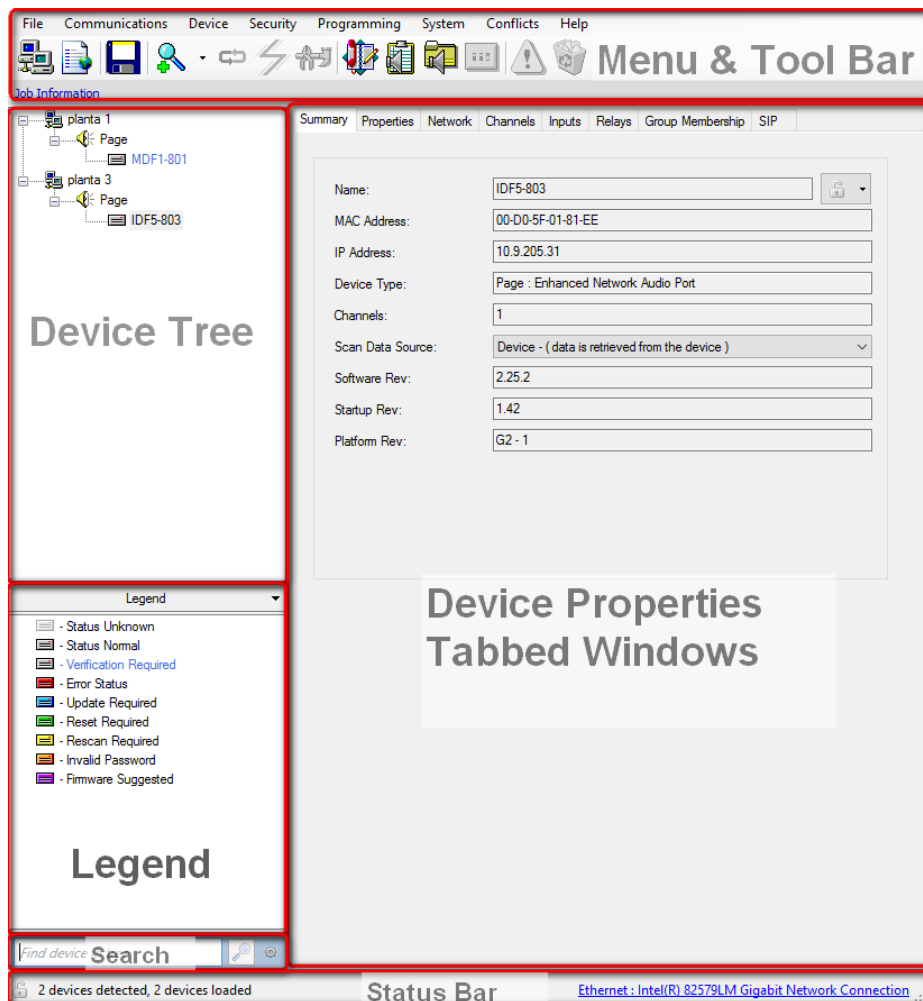
Main Application Window

The layout of the VIP-102B IP Solutions Tool main application window is shown below. The application window is divided into six sections:

- **Menu & Toolbar** . displays the pulldown menus for all of the configuration functions available within the application. The Toolbar icons provide quick access to the most commonly used functions.

- **Device Tree View** . displays a listing of the Valcom IP devices available to be configured. The devices are grouped by IP subnet first, then by the device type (speaker, page, trunk, etc).

- **Legend** . displays a description of the various colors associated with the device icons shown in the device tree view. The color of the icon indicates its status.

- **Device Properties** . displays the properties associated with a single device selected in the device tree view. The display includes tabbed windows for the configuration options applicable for the selected device. All IP devices will have a Summary, Properties and Network tab. Other tabs are displayed when appropriate for the device.

- **Search** . Allows searching for devices in Device Tree by Device Name, MAC Address, IP Address, Host Name, Dial Code, Channel Description, and SIP Phone Number/Trunk Extension. Search result window will pop up. (See below). After selecting a search result, the proper device is selected in the tree, and the proper tab and channel may be selected if necessary.
  (*Clicking the gear icon will allow setting the number of visible results per category*.)
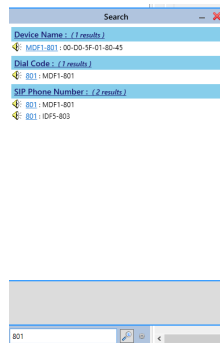
- **Status Bar** . provides status information on the devices and the network interface selected. Clicking that link allows to choose from other network interfaces you may have on your PC or laptop. Select the interface you are connected to that is on the network the device(s) are on.
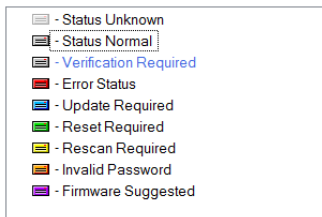
File   Communications   Device   Security   Programming   System   Conflicts   Help

Menu & Tool Bar

Job Information

Summary | Properties | Network | Channels | Inputs | Relays | Group Membership | SIP

- planta 1
  - Page
    - MDF1-801
- planta 3
  - Page
    - IDF5-803

Device Tree

Name:	IDF5-803
MAC Address:	00-D0-5F-01-81-EE
IP Address:	10.9.205.31
Device Type:	Page : Enhanced Network Audio Port
Channels:	1
Scan Data Source:	Device - (data is retrieved from the device)
Software Rev:	2.25.2
Startup Rev:	1.42
Platform Rev:	G2 - 1

**Device Properties
Tabbed Windows**

Legend

- Status Unknown
- Status Normal
- Verification Required
- Error Status
- Update Required
- Reset Required
- Rescan Required
- Invalid Password
- Firmware Suggested

Legend

Find device **Search**

2 devices detected, 2 devices loaded   **Status Bar**   Ethernet : Intel(R) 82579LM Gigabit Network Connection

Main Application Window
Legend Description

The color of the endpoint icons indicates their current status. In many cases, the VIP-102B will prompt users as to the proper steps to achieve normal status.

- **Status Unknown** . indicates that an endpoint that was previously detected in a scan can no longer communicate with the VIP-102B. This could indicate that the endpoint was in a reset state when the scan occurred. Rescanning too quickly following a reset can cause endpoints to appear in the status unknown state.

- **Status Normal** . indicates that an endpoint has been detected and scanned normally.

- **Verification Required** . is the status for all endpoints for which the VIP-102B tool does not have complete information on IP address, firmware version and last configuration date and time. All devices loaded from a Snapshot file will initially require verification.

- **Error Status** . indicates a communications error between the VIP-102B and an endpoint. Common causes of error status include having an incorrect or missing gateway address on the device or routing problems between subnets.

- **Update Required** . indicates that the endpoint requires an update. Updating a device involves sending the programming information from the VIP-102B IP Solutions tool to the Valcom IP device.

- **Reset Required** . indicates that the endpoint requires a reset. Endpoints that have experienced programming changes require an update followed by a reset. Endpoints may also be reset by removing power for 60 seconds and then reapplying power.

- **Rescan Required** . indicates that the VIP-102B tool does not have all of the required information from an endpoint.

- **Invalid Password** . indicates that the endpoints password does match any of the passwords currently known by the VIP-102B program.

- **Firmware Suggested –** for server based devices only

- Status Unknown
- Status Normal
- Verification Required
- Error Status
- Update Required
- Reset Required
- Rescan Required
- Invalid Password
- Firmware Suggested

All Valcom IP devices require an Ethernet network connection and power supply. If using Power over Ethernet (PoE), the devices will power up when connected to the network switch. If using an external power supply (VIP-324) connect the network cable to the device, and then connect the power supply. Note that Valcom IP Speakers and Clocks are PoE only, and do not have external power supply connections. If a PoE switch is not available, a midspan power injector may be used to power the devices.

Before attempting to configure the Valcom devices, please ensure the network is configured to support IP paging. The network should support broadcast and multicast traffic within local subnets and multicast traffic among all subnets where Valcom IP devices are connected. If the network cannot be configured to support these protocols, some features of the IP paging solution may not be available. Please contact Valcom Technical Support for details.

After the endpoint devices are connected to an appropriately configured network, programming is accomplished through the use of the VIP-102B IP Solutions Setup Tool. This software tool should be installed on a Microsoft Windows® based computer connected to the same network as the Valcom IP devices.

The Valcom IP devices have a factory-default IP address of 192.168.6.200 for 2nd generation devices and 192.168.6.203 for 3rd generation devices. Because the default IP address can be the same for all devices, the devices will conflict with each other when first installed. The VIP-102B IP Solutions Tool provides a mechanism to set the IP address via broadcast and/or multicast. After each device has been assigned an IP address, the IP Solutions Tool will be able to retrieve device-specific information and the remaining configuration tasks can be completed.
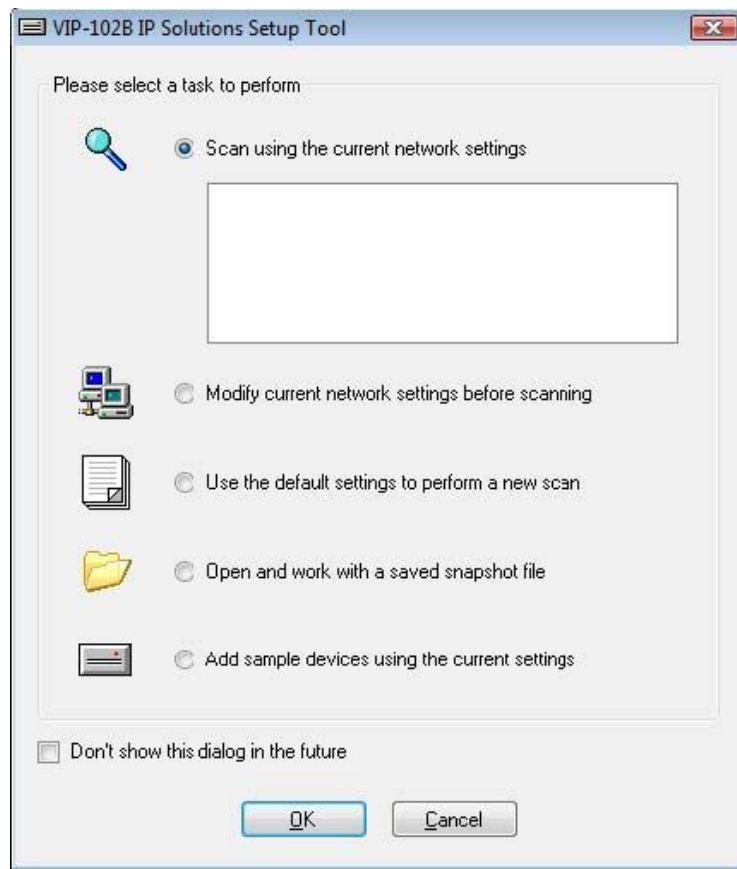
Note: Computers that are protected with a firewall, or have additional network interfaces (wireless adapters), may cause devices not to appear in the VIP-102B IP Solutions Setup Tool after a scan. Please disable these in order to successfully scan devices. Also computers that are connected to the PC port of your IP phone may cause devices not to be scanned. In this case you need to connect the computer directly to a network jack.

Scanning for Valcom Devices

Upon invoking the VIP-102B IP Solutions Tool, the screen shown below is presented.

- **Scan using current network settings** . performs a search for Valcom devices on the network. The first time the tool is run the list of networks will be empty. This will result in the tool scanning the computer's current subnet (using a broadcast) and on other network subnets that are accessible via multicast. Specific networks can be added (see the following option) to gain access to networks not reachable by broadcast or multicast.

- **Modify current network settings before scanning** . invokes the Networks dialog box to define the networks that will be scanned and will be available for assignment to the Valcom devices. IP address ranges in multiple networks may be defined.

- **Use the default settings to perform a new scan** . causes the tool to remove any defined Network configurations and Ignore List entries before scanning. Any previously defined Networks will be lost.

- **Open and work with a saved snapshot file** . "Snapshot" files contain information about Valcom devices and the configuration options used with them. Snapshots can be used for training purposes, as well as providing an easy way to document an existing configuration.

- **Add sample devices using the current settings** . invokes the Add Sample Devices dialog box to allow entering sample devices.

The checkbox in the lower left corner may be selected to prevent this dialog box from being displayed each time the VIP-102B tool is started.

VIP-102B IP Solutions Setup Tool

Please select a task to perform

- ⦿ Scan using the current network settings

- ○ Modify current network settings before scanning

- ○ Use the default settings to perform a new scan

- ○ Open and work with a saved snapshot file

- ○ Add sample devices using the current settings

☐ Don't show this dialog in the future

[OK]   [Cancel]

Defining Networks for Scanning

Selecting "Modify current network settings before scanning" and clicking "OK" results in the appearance of the following form. This dialog box is also available by choosing Networks from the File menu on the main application screen.

To define a new range of network addresses to be scanned and available for assignment, click "Add" at the bottom of the Networks form.
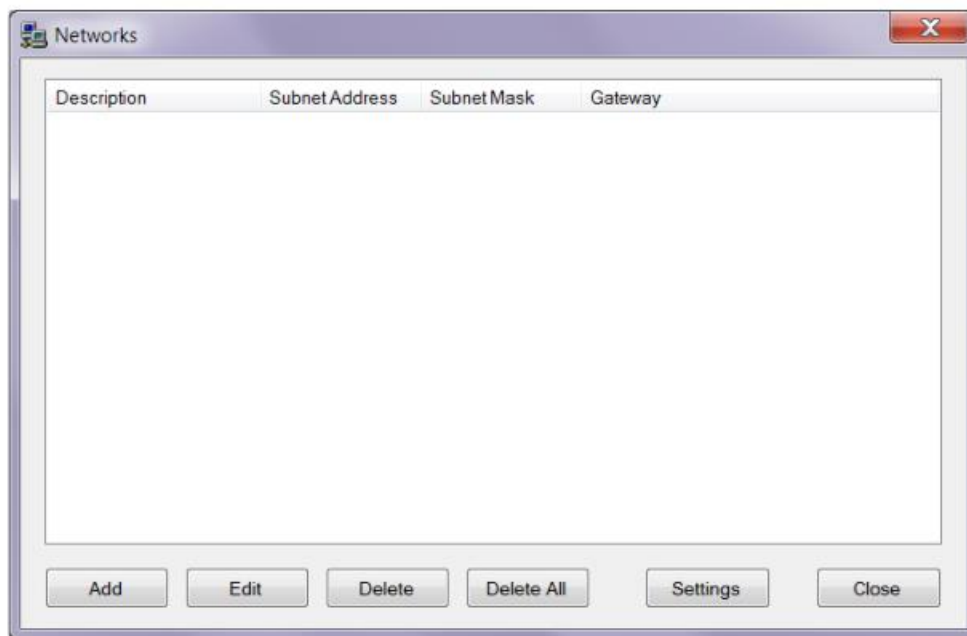
Subnet Configuration

Each network is defined in the Subnet Information section. The Description field may be any text (20 character maximum) that adequately describes this network. The Subnet Type provides a choice of Class A, B or C networks, and affects the number of fields available to define the Subnet Address and IP Addresses fields.

Select the appropriate Subnet Type, and then complete the other fields with numbers that are correct for the network being defined.

The IP Addresses section provides fields to enter the Host ID portion of the network being defined. Depending on the choice of Class A, B or C as the Subnet Type, there will be 1, 2 or 3 fields to enter for the Lower Host ID. The Upper Host ID will have one field to complete. Enter the correct numbers for the network being defined., then click the Add button.   The Host ID fields are limited to a maximum value of 254. Class A or B networks with more than 255 addresses would be entered as separate networks. For example, network 10.10.2.0 with subnet mask 255.255.254.0 would be entered in two steps. The first would be 10.10.2.0 with Upper Host IDs 1 to 254; the second entry would be 10.10.3.0 with Upper Host IDs 1 to 254.

The example below shows the form filled out for a Class C network. The range of addresses available for the IP Solutions Tool to scan and/or assign to devices will be 192.168.2.2 through 192.168.2.50, and each of these addresses is listed in the IP Address listing at the bottom of the form. Individual address can be deleted from the list by selecting the address, then clicking the **Delete** button. The entire range can be removed by clicking the **Delete All** button. Only the addresses shown in the IP Address List will be scanned.

Should future changes occur to the Subnet Mask, Gateway IP address or DNS server information for this subnet, the **OK + Modify Devices** button may be used to perform a blanket change to the definition of this subnet.

After all IP address ranges for this subnet have been added to the pool of available addresses, click **OK** to exit this form.
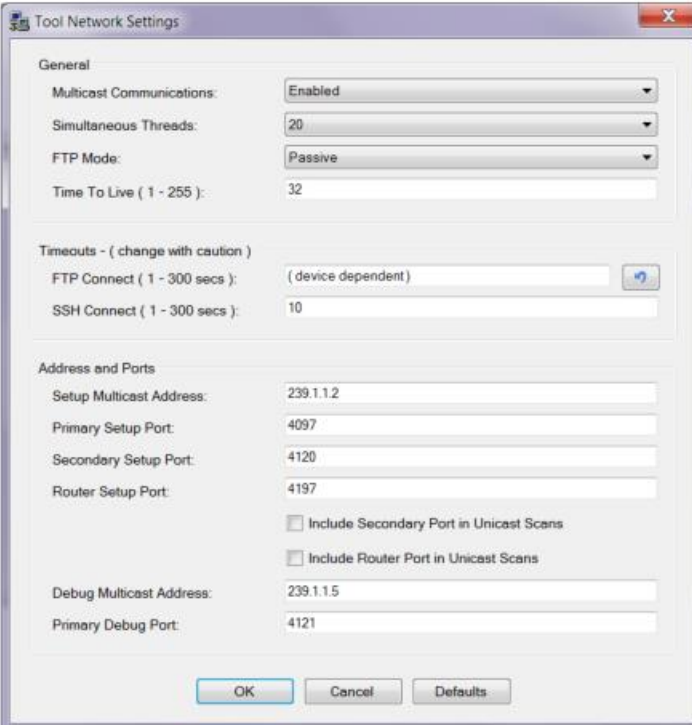
The form shown below now reflects the "Sample Network" added in the previous steps. The IP addresses defined in this network will now be available to assign to the Valcom devices and will be scanned when "Scan using current network settings" is selected.

Additional networks may be defined using the **Add** button. Networks previously defined may be edited using the **Edit** button. Select an individual network and click **Delete** to remove it, or click **Delete All** to remove all defined networks.

Tool Network Settings can be accessed by the Settings button. It is recommended that all of the options in the **Tool Network Settings** section be left at the factory default settings, unless instructed by Valcom Technical Support to make changes. The factory settings are designed to work well with Valcom equipment over most networks.

Change settings here as instructed by Valcom Technical Support and then Click OK.
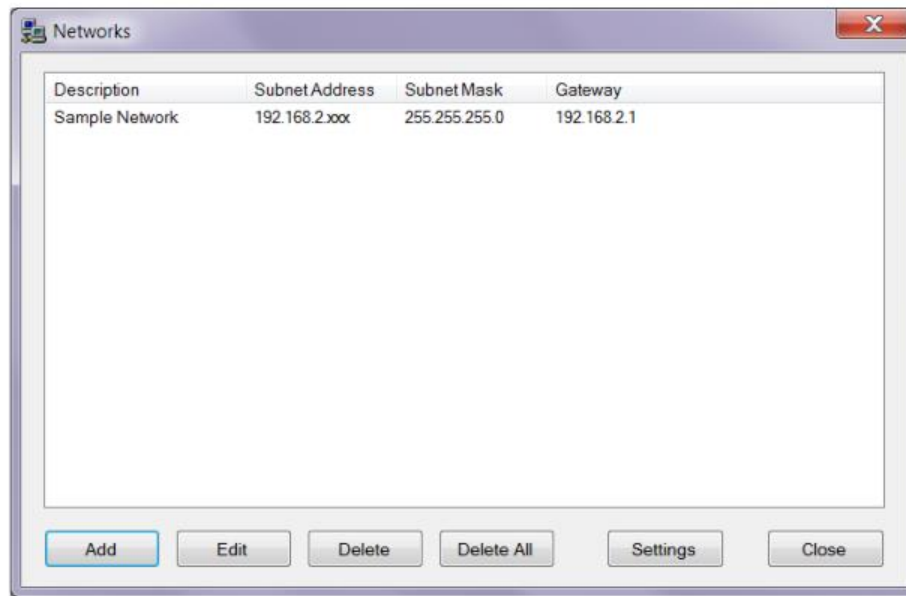
Click the **Close** button to close this dialog box. To scan the network for Valcom devices using this newly-defined network, click the Communications menu on the main application screen, then choose Scan All Devices.

File Menu

The File Menu provides options for saving and retrieving configuration information, defining options for the overall operation of the program and producing configuration reports.

Configuration Snapshots are used primarily to capture the current configuration details into a file. The Snapshot may contain actual Valcom IP devices and/or virtual devices. Snapshot files of systems can be used for documentation purposes, technical support and training. This option is especially useful to provide configuration details for technical support and to create a backup file of the system configuration. Saved configuration data may be used to program a new device by transferring programming from one device to another.

A Snapshot of the current state of the VIP-102B tool may be taken at any time. Using the **Save Snapshot As** option from the File menu will invoke the standard file dialog box to input the name and location of the saved file. The saved file will contain all of the configuration details in the VIP-102B tool at that time.

- **New**. closes the currently open Snapshot and/or removes the active scan information from the tool. A dialog box will prompt to save changes or update devices, if appropriate before continuing.

- **Open**. invokes a standard file dialog box to select an existing Snapshot file to retrieve. If devices have already been loaded into the tool, a warning dialog box will be displayed indicating an update is required or changes may be lost.

- **Close**. closes the currently open Snapshot file.

- **Save Snapshot** . saves the configuration details currently displayed to the currently open Snapshot file. This option is only available if a Snapshot file was previously opened using the **Open** or **Save Snapshot As** menu commands.

- **Save Snapshot As** . displays a dialog box to save a file containing a definition of all of the Valcom IP devices and all configuration options currently configured in the tool.

- **Export to CSV File** . allows exporting the list of devices that are in the scan window, with information similar to the Summary tab

- **Job Information**· Store job information and contact information for a job site, which includes the contractor, customer, and support companies. This information is stored along with the configuration of the tool, the snapshot of the configured devices and log files from the tool.

- **Network Definitions**. allows users to define available networks and ranges or pools of assignable IP addresses.

- **Tool Network Settings**--It is recommended that all of the options in the Tool Network Settings section be left at the factory default settings, unless instructed by Valcom Technical Support to make changes. The factory settings are designed to work well with Valcom equipment over most networks.

- **Options** . invokes a dialog box with selections that allow customization of which warnings and confirmations will be displayed by the program.

- **Clear File Cache** . deletes the VIP-102B temporary files stored on the computer s disk.

- **Print Reports** . provides options to print reports of system endpoints, their names, MAC addresses, type, number of channels, assigned IP address, firmware revision, dial code, caller ID descriptions and a list of defined audio groups.

- **Exit**. closes this application.

File Menu
 Open

The Open function invokes the dialog box shown below to select a previously-saved Snapshot file. Loading a saved Snapshot will add devices defined in the Snapshot file to the devices shown in the current display. Type the filename of the Snapshot file in the file field, or click the button on the right to open a standard file dialog box to browse and select the file to load. Snapshot files that have been recently accessed are displayed in the **Recent Files** list for easy and quick selection.

When loading a Snapshot file, some configuration items may be excluded if desired. In the Items to Load section, click the checkbox to select the items to be loaded.

- **Device Data**. includes the specific information for a device, such as the Dial Code and Group Membership.

- **Networks Definitions**. includes the network IP address ranges other than the Local Network Settings information.

- **Tool Network Settings**. is the network information for the PC this program is running on, as defined in the Networks dialog box.

- **Job and Contact Info**· Information from the **Job Information** section.

- **Ignore List**. is the list of devices that are ignored by the 102B programming tool, and therefore not displayed in the device tree view.

- **Add defaults for any missing data after load**. will cause the 102B programming tool to fill in any missing data with default information. Newer Valcom IP devices may have configuration items that were not previously available, and do not have configuration information included in Snapshot files saved by an older version of the software.

Click the **Open** button to import the selected settings from the chosen file, or click the **Cancel** button to abandon this operation.
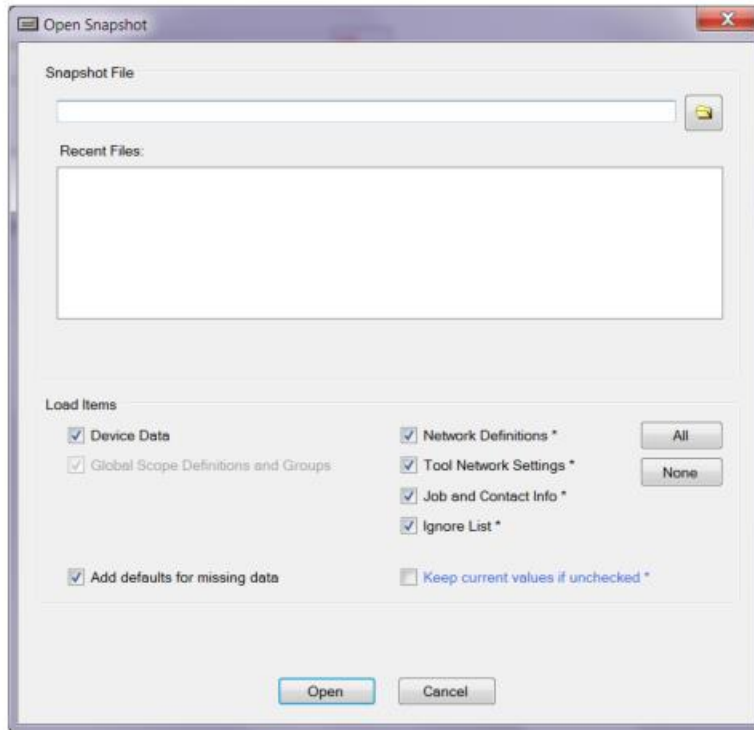
If opening a Snapshot file after devices have already been loaded into the tool, a warning dialog box will be displayed indicating an update is required or changes may be lost. This is provided as a reminder that programming changes made in the VIP-102B tool must be loaded to the actual device through the Update process.

Click the **Yes** button to perform the Update process by copying programming files to any Valcom IP devices that have been changed. The dialog box to select a Snapshot file to open will be presented after the update process has finished. Any devices shown in the Device Tree View will be removed.

Click the **No** button to continue with opening a Snapshot file. Any device programming changes that have been made in the tool but not yet copied to the device will be lost. Devices currently in the device tree view will be removed and replaced with the devices in the selected Snapshot file.

Click the **Cancel** button to abandon this operation. The existing devices listed in the tool will not be affected.
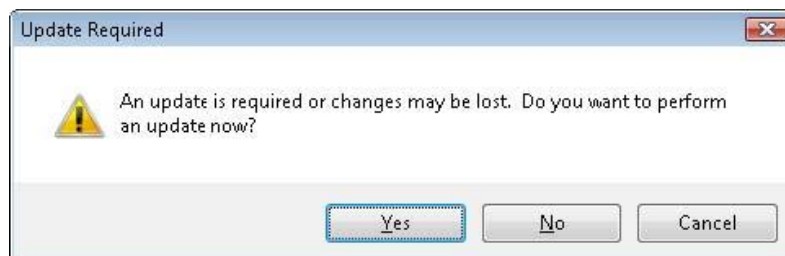
File Menu
Options

The Prompt Options dialog box provides the ability to customize the warnings and messages presented by the VIP-102B tool. They are presented under 3 tabs. Prompts, Startup, and Miscellaneous.

Prompts

- **Prompt before adding newly found devices**. will provide a dialog box listing all new devices detected during a scan, with the option to include or exclude those devices in the current device list.

- **Wait to receive beacons after devices reset**· brings up window after reset showing all devices being reset and are marked with red dot while resetting. A green check mark will be displayed next to each device once it is back up and running.

- **Show conflicts after scan is complete**. will display the warning dialog showing the type of any conflicts in system programming (dial plan, dial code, etc) that were detected during the scan.

- **Warn about conflicts before updates**. displays a warning message if a device update is attempted while conflicts exist in the programming. The warning dialog provides the option to cancel the update.

- **Ask for confirmation before scans** . displays a prompt requiring confirmation before a scan is attempted.

- **Ask for confirmation before updates** . displays a prompt requiring confirmation before an update is attempted.

- **Ask for confirmation before resets** . displays a prompt requiring confirmation before a reset is attempted.
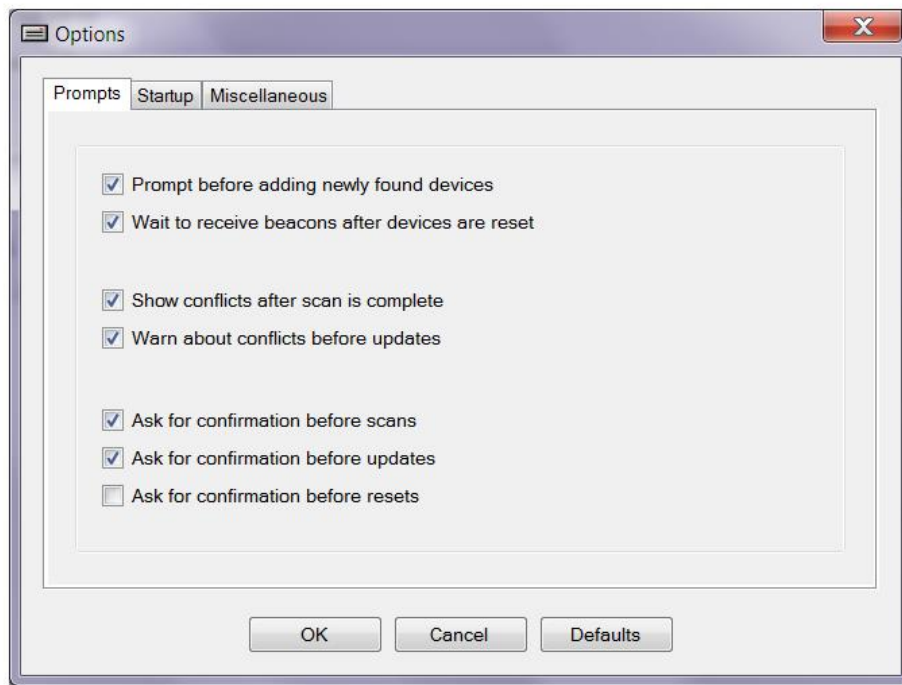
Startup

- **View Start Up Screen** --includes the option to display the Startup Screen when the VIP-102B tool starts. The Startup Screen provides options to scan the network

- **Clear on Startup or File Close** . this provides a means to clear out or reset some tool definitions like Network definitions, Tool Network Settings, Jon and Contact Information, and the Ignore List.

Miscellaneous

- **Sort devices by defined subnet –**list the devices in the tree by subnet address

- **Offer to remember Passwords by default –**keep last used password (other than default)

- **Recent Snapshot Files**. provides the ability to select the maximum number of files listed in the Open dialog box under the File menu. The **Clear List** button removes all entries from the list.

- **Settings for Using Defaults** . button will set or preserve settings when defaults are used when adding devices.

    Click the **OK** button to save all of the selected options, or click the **Cancel** button to close this dialog box without saving any changes.
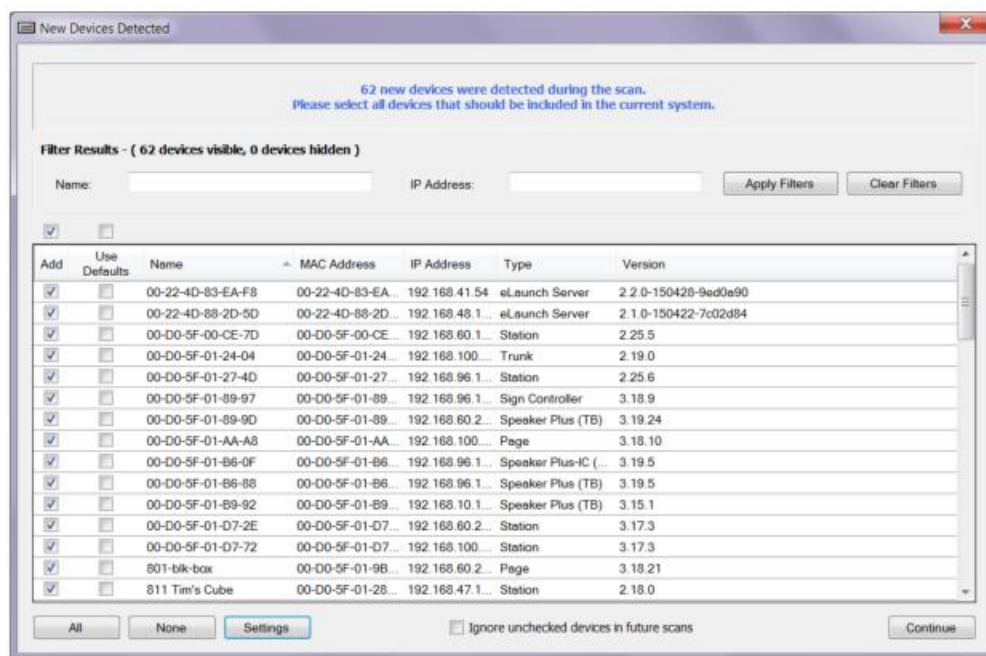
Options

Prompts | Startup | Miscellaneous

☑ Prompt before adding newly found devices
☑ Wait to receive beacons after devices are reset

☑ Show conflicts after scan is complete
☑ Warn about conflicts before updates

☑ Ask for confirmation before scans
☑ Ask for confirmation before updates
☐ Ask for confirmation before resets

[OK]   [Cancel]   [Defaults]

Options
Prompts

If the "Prompt before adding newly found devices" option is selected, the following dialog box will be displayed when new devices are discovered by a network scan. This provides a method to selectively choose which discovered devices will be added to the current list in the device tree view.

Select devices by clicking the checkbox beside the device name in the list.

- **All** or **None**. buttons may be used to select all devices, or deselect all devices, respectively. Or use the check boxes above the Add and Use defaults to select all devices or deselect all devices, respectively.
- **Ignore unchecked devices in future scans** . adds all devices left unchecked to the Ignore List. Devices in the Ignore List will not be scanned or displayed in the Device Tree View.
- **Filter results**· if you are looking for specific IP address or names in a large scan list you can enter this and click Apply Filters to filter down to just specific devices or click Clear Filters to restore full list.

Click the **Continue** button to add the selected devices to the device list in the tool.

If the **Show conflicts after scan is complete** option is selected, the following dialog box will be displayed if any programming conflicts were detected in the configuration of Valcom IP devices scanned. This dialog box will not appear if no conflicts are found.

See the section on the Conflicts Menu later in this manual for details on types of conflicts.

A prompt for Dial Code Length Conflicts will appear if there are any. It will list in a dropdown 1 through 11 for the dial code length and the number of devices scanned that have that dial code length. Select the dial code length for all devices scanned. Click OK and all devices will have their dial code length changed to the selected length.

Note: Changing the dial code length may cause current dial codes to become invalid. All invalid dial codes should be modified and adjust to the new dial code length.

The following Conflict dialog box will show.

Click the **View** button to see details of the selected conflict, or click the **Close** button to close this dialog box.
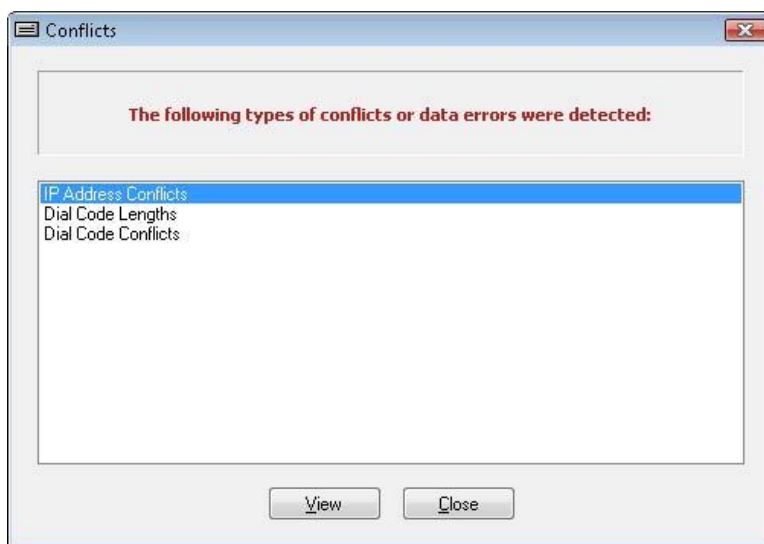
If the **Warn about conflicts before updates** option is selected, the following dialog box will be displayed if an update is attempted while programming conflicts exist in the configuration of Valcom IP devices. The dialog box provides an option to proceed or cancel the update process.

See the section on the Conflicts Menu later in this manual for details on types of conflicts.

Click the Yes button to proceed with the updates, or click the No button to cancel the update and return to the main application window without updating any devices.
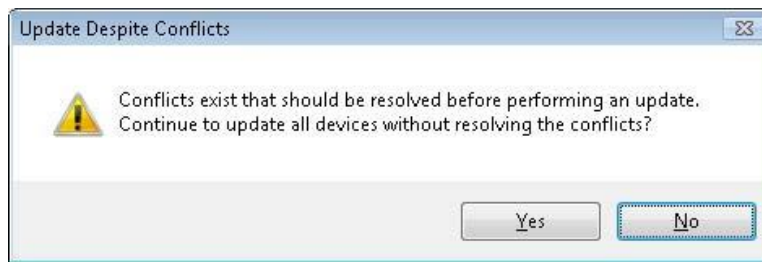
The Prompt Options dialog box provides the ability to enable or disable warnings and messages presented by the VIP-102B tool related to Scanning, Updating and Resetting Valcom IP devices.

- **Ask for confirmation before scans** . displays a prompt as shown below when a network scan is initiated. Scanning one or more devices will cause any programming changes that have not yet been updated to the device(s) to be discarded. Clicking the **Yes** button will proceed with the scan, thereby losing any pending changes. Clicking the **No** button will close this dialog box without causing any changes.
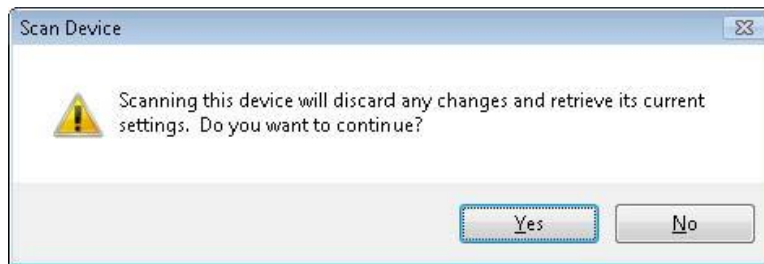
- **Ask for confirmation before updates** . displays a prompt as shown below when an Update process is chosen for one or more devices. Click the **Yes** button to proceed with the Update and copy all of the programming configuration to the selected device(s). Click the **No** button to close this dialog box without updating any devices.

- **Ask for confirmation before resets** . displays a prompt as shown below when a Reset operation is chosen for one or more devices.

Click the **Yes** button to proceed with the reset of the selected devices. Click the **No** button to close this dialog box without resetting any devices.
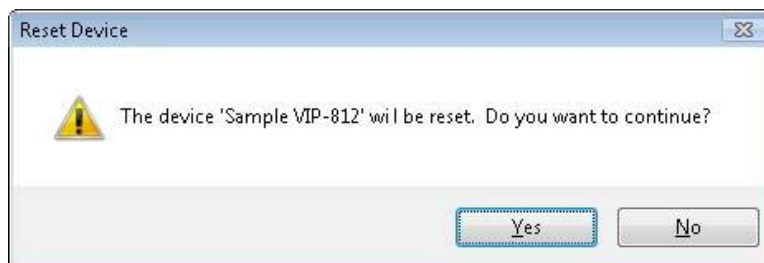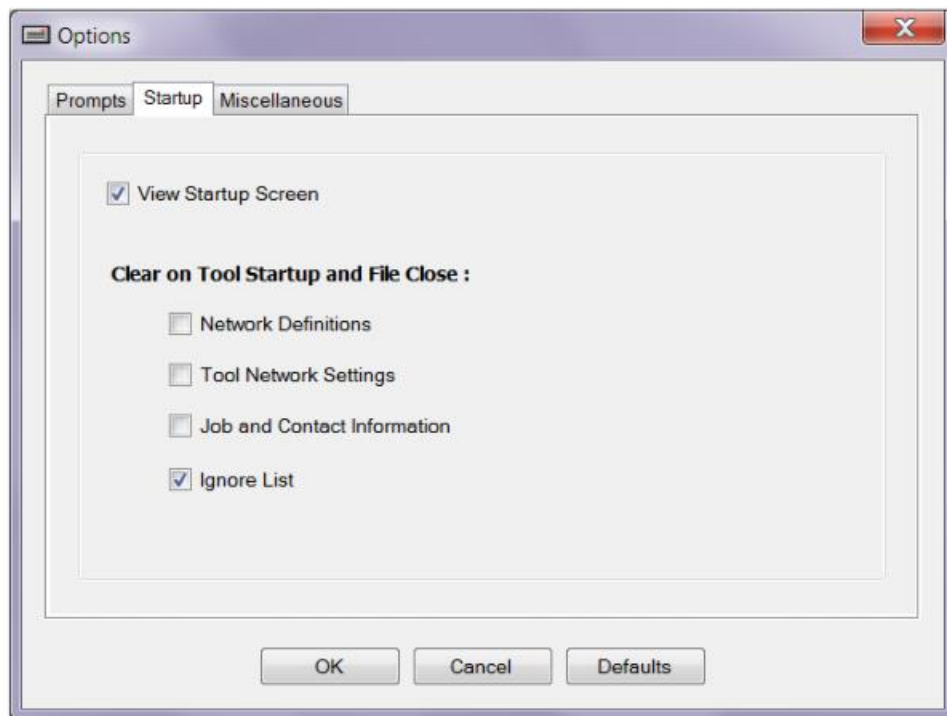
File Menu
   Options
     Startup

Several settings can be selected that can happen at the startup or launching of the tool.

View on Startup – includes the option to display the Startup Screen when the VIP-102B tool starts. The Startup Screen provides options to scan the network.

Clear on Tool Startup and File Close – this provides a means to clear out or reset some tool definitions like Network definitions, Tool Network Settings, Jon and Contact Information, and the Ignore List

File Menu
  Options
    Miscellaneous

Other settings that can be configured in the tool:

Sort devices by defined subnet –list the devices in the tree by subnet address

Offer to remember Passwords by default –keep last used password (other than default)

Recent Snapshot Files. provides the ability to select the maximum number of files listed in the Open dialog box under the File menu. The **Clear List** button removes all entries from the list.

Settings for Using Defaults . button will set or preserve settings when defaults are used when adding devices.
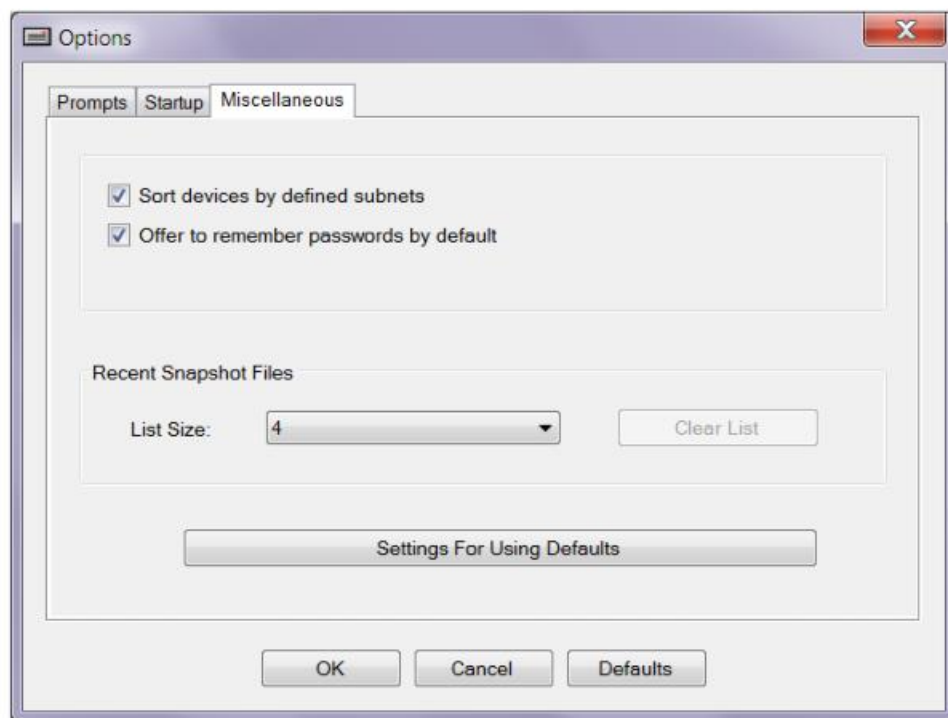
File Menu
  Clear File Cache
This allows you to clear out the local cache on the PC. This contains the configuration file that are read from and sent to devices. This is not the same as a snapshot file which is stored in a database file.

Click **Yes** to clear, or click **No** to preserve the file cache.
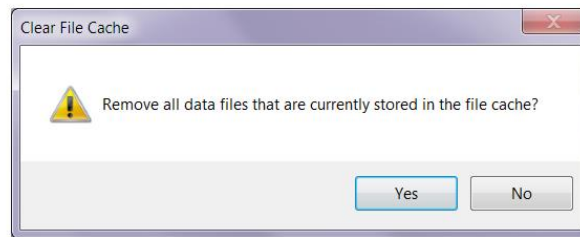
File Menu

Print Reports

The Print Reports function will create reports of the current configuration settings. The reports are printed to any print device configured on the local computer.

Three reports are available, which can be printed individually or in combination with each other.

- **Hardware**. will print a listing of the IP devices in the configuration, showing the device name, MAC number, device type, number of channels, IP address and firmware version.

- **Dialing Plan**. will print a listing of the device, its description (from the Channels tab), the dial code assigned to the channel and the caller ID for the channel. Devices that have multiple channels, with a separate dial code for each channel, will be listed once for each channel.

- **Audio Groups**. will print a listing of the dial code and group name for each audio group defined on the system, along with a listing of which devices are members of each group. Devices that have multiple channels with a separate dial code for each channel, will be listed once for each channel.
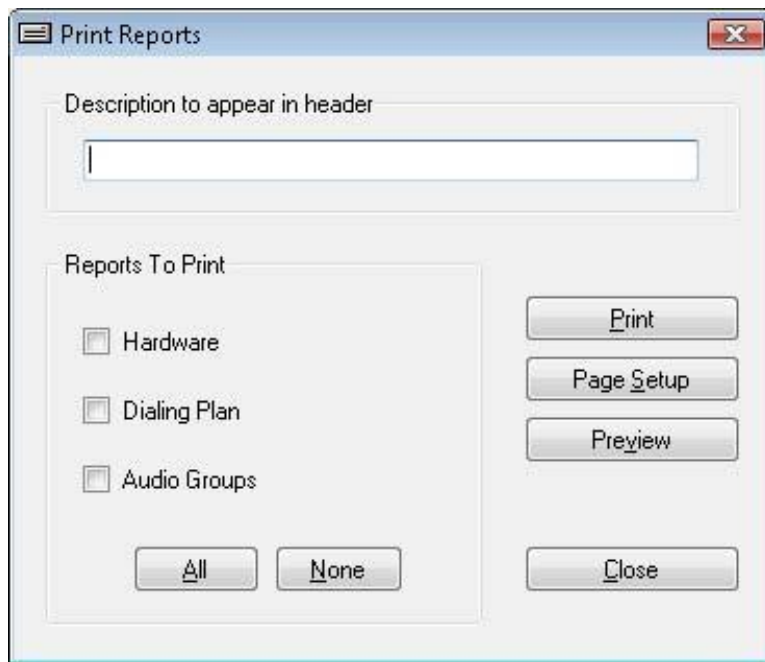
    A description (up to 50 characters) can be added to the report, and will appear in the header of the document.

    The **Print** button will invoke the standard Windows print dialog box to submit the print job to any printer defined on the computer.

    The **Page Setup** button will invoke the standard Windows page setup dialog to set options such as page orientation (landscape or portrait), margins, etc.

    The **Preview** button will generate the selected report and present it in a viewer window. When printing directly from the Preview window, the output will be directed to the computers default printer.

    The **Close** button closes the Print Reports dialog box and returns to the main application screen.

Print Reports

Description to appear in header

Reports To Print

- [ ] Hardware
- [ ] Dialing Plan
- [ ] Audio Groups

[All] [None]

[Print]
[Page Setup]
[Preview]

[Close]

Communications Menu

The Communications menu provides functions for scanning the network to detect Valcom IP devices, functions to communicate over the network to update the configuration of the devices and general troubleshooting functions.

Scan Functions:

Performing a scan for Valcom devices will initiate communications over the network to discover Valcom IP devices and retrieve the configuration details from those devices. Several options are provided to define the scope of the scan operation.

- **Scan All Devices** . initiates a network scan to discover all endpoints on the current PC subnet, defined networks and via multicast, including devices already in the device tree view.

- **Scan Single Device** . initiates a scan of an endpoint currently selected in the device tree view.

- **Scan Missing Devices** . initiates a network scan to discover all endpoints on the current PC subnet, defined networks and via multicast that have not yet been discovered. All devices currently in the device tree view with normal status will not be rescanned.

- **Scan Selected Devices** . provides a dialog box where one or more devices may be selected for scanning.

Update Functions:

Configuration changes made using the IP Solutions Tool must be uploaded to the device and the device must then be reset (restarted) for the change to be effective. <u>If the IP Solutions Tool is closed without uploading changes to the device, the changes will not be applied.</u> When exiting the program, the IP Solutions Tool will provide a warning message if changes have been made in the tool but not uploaded to the affected devices.

- **Update All Devices** . sends updated configuration information to update all devices in the device tree view.

- **Update Single Device** . sends updated configuration information to the endpoint currently selected in the device tree view.

- **Update Changed Devices** . sends updated configuration information to all endpoints that have been changed but have not yet been updated.

- **Update Selected Devices** . provides a dialog box where devices may be selected for subsequent updating.

Reset Functions:

Resetting a device sends a command to restart the unit. This is also known as a reboot, and allows changes in configuration to take effect.

- **Reset All Devices** . sends a reset command to all devices in the device tree view.

- **Reset Single Device** . sends a reset command to an endpoint selected in the device tree view.
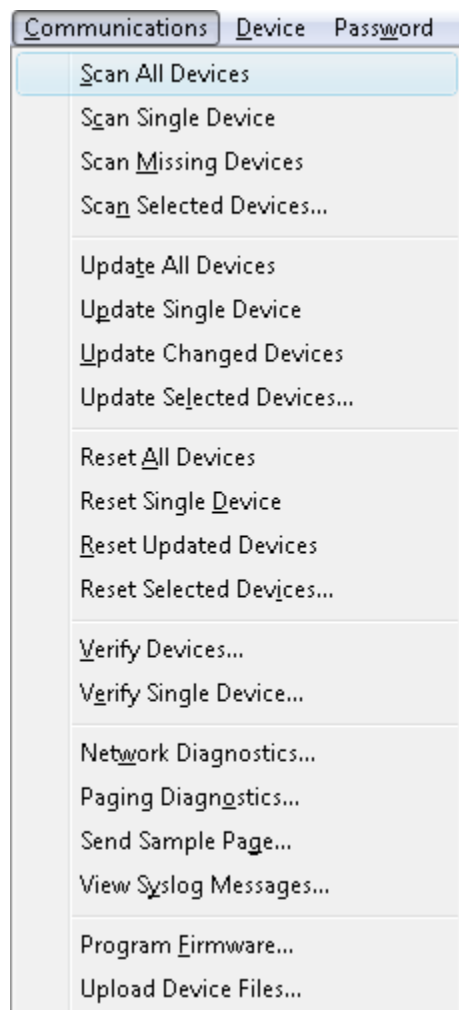
- **Reset Updated Devices** . sends a reset command to all endpoints that have been updated but have not yet been reset. Devices that have not been updated will not be reset.

- **Reset Selected Devices** . provides a dialog box where devices may be selected for subsequent resetting.

Verify Functions:

Verifying a device performs a limited scan of the device to check basic communication prior to programming.

- **Verify Devices** . displays a dialog box with choices for verifying one or more devices.

- **Verify Single Device** . performs the verification for one selected device.

- **Network Diagnostics** . is a powerful tool that displays the status of broadcast beacons from endpoints indicating their ability to communicate on the network.

- **Paging Diagnostics** . provides a window to display the current paging message activity on the network. Options for changing the multicast IP address and ports to monitor are available.

- **Send Sample Page** . provides a list of audio groups defined for this network and provides a sample tone that can be sent to any group selected. Options for changing the multicast IP address and ports are available.

- **View Syslog Messages** . provides a window where syslog messages are displayed. Endpoints must be configured to send syslog messages to the IP address of the computer running the VIP-102B IP Solutions Tool for this function to work.

- **Program Firmware** . allows users to update endpoint firmware. Firmware files are provided by Valcom.

- **Upload Device Files** . provides the ability to install custom audio files on Valcom devices for selected response messages.

Communications	Device Password
Scan All Devices	
Scan Single Device	
Scan Missing Devices	
Scan Selected Devices...	
Update All Devices	
Update Single Device	
Update Changed Devices	
Update Selected Devices...	
Reset All Devices	
Reset Single Device	
Reset Updated Devices	
Reset Selected Devices...	
Verify Devices...	
Verify Single Device...	
Network Diagnostics...	
Paging Diagnostics...	
Send Sample Page...	
View Syslog Messages...	
Program Firmware...	
Upload Device Files...	

Communications Menu
Scanning for Devices

The four scanning options provide a means to discover Valcom equipment on the network. The VIP-102B IP Solutions Setup Tool can scan the subnet defined on the computer the software is installed on, any subnets defined in the Networks function and through multicast. When a device is scanned, the specific information related to that device's programming is retrieved and loaded into the VIP-102B tool.

Choosing the **Scan All Devices** option initiates a network scan to discover all endpoints on the current PC subnet, defined networks and via multicast. This is generally done when the program is first started to build the initial device listing. The devices found are then listed in the device tree view and are available for further programming. If the option to *Prompt Before Adding Devices* is enabled, a dialog box will be presented with a list of devices found. One or more devices may be selected from the list to be added to the device tree view.

Choosing the **Scan Single Device** option initiates a scan of an endpoint selected in the device tree view. This option is typically used after a programming change has been applied to a device, and is a quicker way to update the information related to a single endpoint device. Using this option will avoid scanning all of the devices in the list, saving time and reducing network traffic. This option can also be executed by right-clicking the device name in the device tree view, then choosing Scan Device from the pop-up menu.

Choosing the **Scan Missing Devices** option initiates a network scan to discover all endpoints on the current PC subnet, defined networks and via multicast that have not yet been discovered, as well as devices in the device tree view that are not in a normal state (error state, bad password state, rescan required or unknown state). Devices already displayed in the device tree view will not be rescanned. If the option to *Prompt Before Adding Devices* is enabled, a dialog box will be presented with a list of devices found. One or more devices may be selected from the list to be added to the device tree view.

Choosing the **Scan Selected Devices** option initiates a dialog box displaying known endpoints, from which one or more devices may be selected for scanning.

Each time a scan operation is performed, the VIP-102B tool retrieves information from the Valcom devices. Previously retrieved information is overwritten. Since programming changes made in the VIP-102B tool have to be uploaded to the actual device to become effective, the VIP-102B tool will provide a warning prompt if a programming change has been made in the tool, but not yet uploaded to the affected device(s). In the warning prompt shown below, clicking **Yes** will proceed with the scan operation and any pending programming changes that have not been updated to the device will be lost. Clicking **No** will cancel the scan operation.

During a scan operation, the VIP-102B tool must logon to each Valcom device to retrieve the configuration information using non-secure communications by default (Telnet/FTP). This requires using the password set on the device. Also devices may support Secure Communications (SSH/SCP) to retrieve the configuration information. See the Security Menu section for more information.
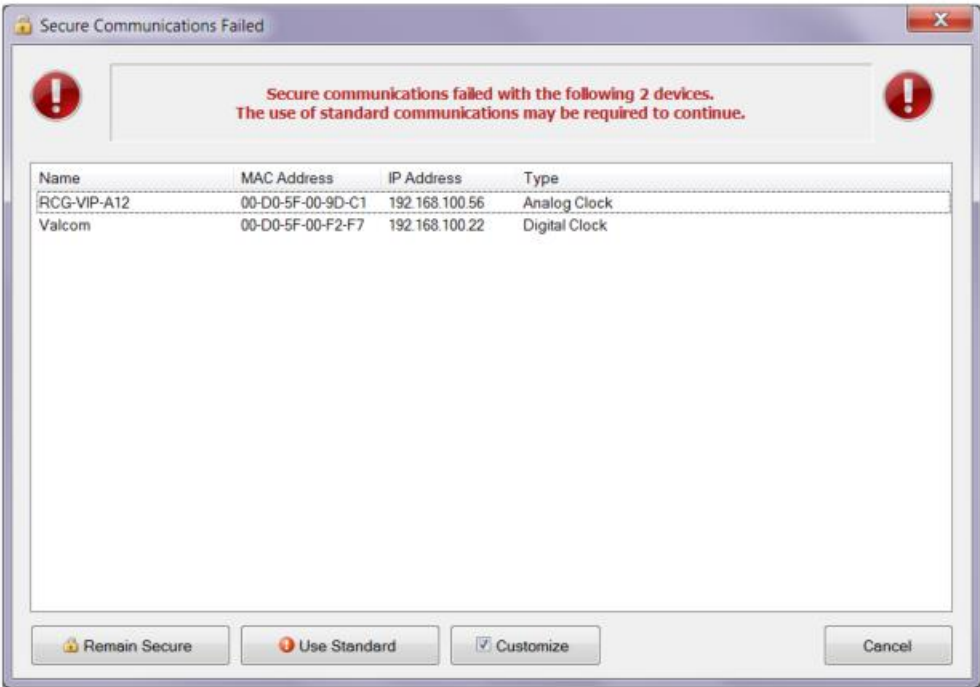
You may receive a **Secure Communications Failed** dialog box that will list devices that the tool could not scan for using secured methods. You can select to **Remain Secure** which will leave these as failed scans or **Use Standard** which will allow the tool to rescan these with non-secured methods. **Customize** will allow you to individually select which devices are to remain secure or change to non-secure. Click **Continue** to rescan.

If a scan is attempted on a device for which the VIP-102B tool does not have the correct password, the dialog box shown below will be presented. The dialog box indicates the number of devices for which the password is not known, and provides a text box to enter the correct password. If a password is entered that is correct for some (but not all) of the devices, then this prompt may appear more than once. A different password may be entered each time until all of the required passwords have been entered.

Entering the correct password, then clicking **OK**, will allow the VIP-102B to then logon to the devices to retrieve the configuration. Clicking **Cancel** will dismiss the dialog box, and the VIP-102B tool will not try to logon to the devices. Those devices will show up in the device tree view with an orange icon, indicating an invalid password.

Until the VIP-102B program is exited, the tool will remember the password entered. The password will be used for subsequent scan operations on these devices. Passwords entered through this method will be remembered by the VIP-102B tool for the duration of this programming session only.

At the conclusion of a scan operation, if there are any data items retrieved from the devices that conflict with each other, the following dialog box will be displayed listing the areas that have conflicts.

Details of the conflicts that are shown may be viewed directly by clicking the conflict type, then clicking the **View** button. The appropriate dialog box will open with specific information about the conflict. The section on Conflicts Menu (later in this manual) explains conflicts in more detail.
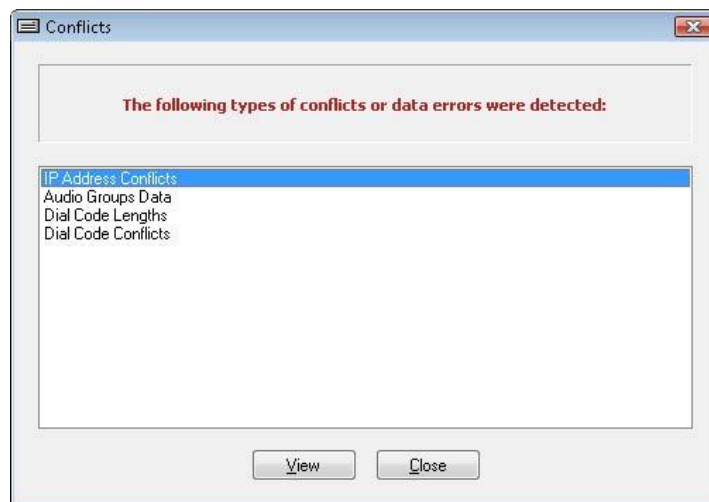
Communications Menu

Updating Devices

The Update menu commands are used to deliver programming changes to the Valcom devices. Configuration changes made using the VIP-102B tool are stored on the local computer, then copied to the Valcom IP device through the Update function. Changes are not effective until the programming has been delivered to the IP device and the device has been restarted. If the VIP-102B IP Solutions Tool is closed without uploading changes to the device, the changes will not be applied to the device.

The **Update All Devices** command sends configuration information to all Valcom IP devices, regardless of whether the configuration has been changed.

The **Update Single Device** command sends updated configuration information to the one endpoint currently selected in the device tree view.

The **Update Changed Devices** command sends updated configuration information to all endpoints that have been changed but have not yet been updated.

The **Update Selected Devices** command opens a dialog box with a list of devices. One or more devices may be selected to have their configurations updated.

If there are conflicts in the programming of the IP devices, a warning dialog box will be displayed (see below).

Clicking the **Yes** button will send the update(s) to the device(s). Clicking the **No** button will abort the process and the updated configuration files will not be delivered to the IP device(s).More information on programming conflicts may be found later in this manual in the Conflicts Menu section.

At the conclusion of an update operation, a dialog box will be displayed indicating a reset of the device(s) is required to make the programming changes effective. Click **Yes** to reset the devices immediately, or click **No** to not reset at this time. The reset commands (described next) may be used to reset the devices at a later time.

Communications Menu

Resetting Devices

The Reset options provide the ability to remotely reboot the Valcom IP devices. Resetting a device performs a warm restart of the device, by initializing all of the programming. Power to the device is not interrupted. All of the programming is reloaded from the last saved configuration. Reset options do not restore the device to factory defaults.

The **Reset All Devices** command will send the reboot command to all endpoints in the device tree view.

Reset Single Device sends the reboot command only to the one endpoint selected in the device tree view. This command may also be selected from the pop-up menu that appears when a device is right-clicked with the mouse.

Reset Updated Devices sends the reboot command to all endpoints that have been updated but have not yet been reset. Devices that have not been updated will not be reset. This command can be used in conjunction with the Update Changed Devices or Update Single Device commands on the Communications menu (described previously).

Reset Selected Devices will display a dialog box (shown below) listing the endpoints, from which one or more devices may be selected for reset. Click the check box beside the device name to select it for resetting. The **All** or **None** buttons may be used to select all, or deselect all listed devices, respectively. Click the **Continue** button after selecting the desired devices to be reset.

The **Cancel** button will close the dialog box without resetting any devices.
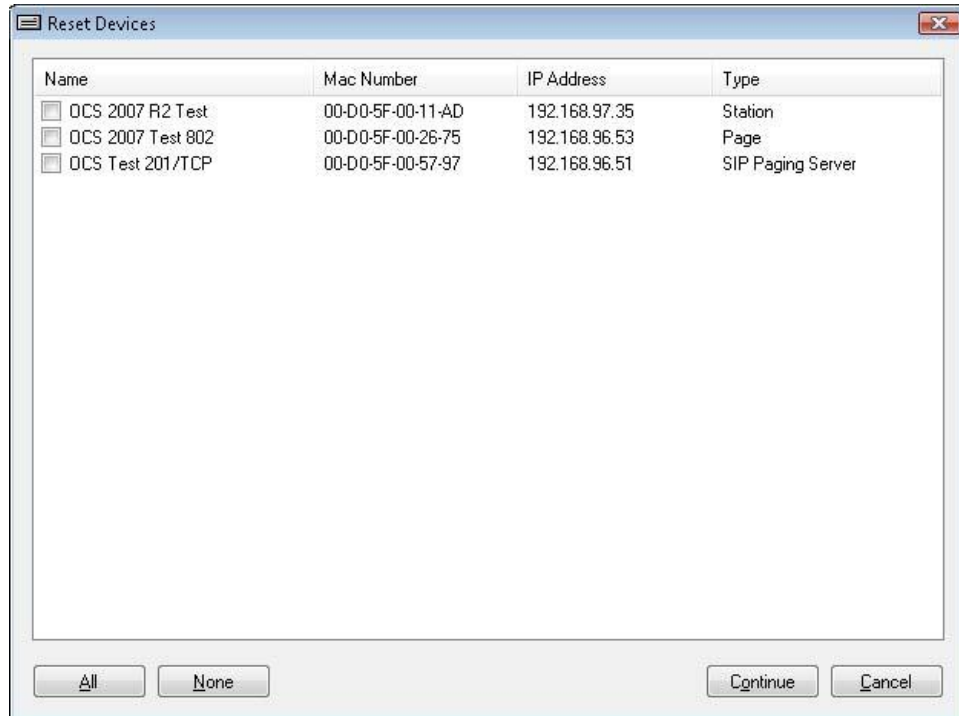
If the **Wait to receive beacons after devices are reset** is set in the **Options menu**, then the following screen will display after all devices have been issued a reset:
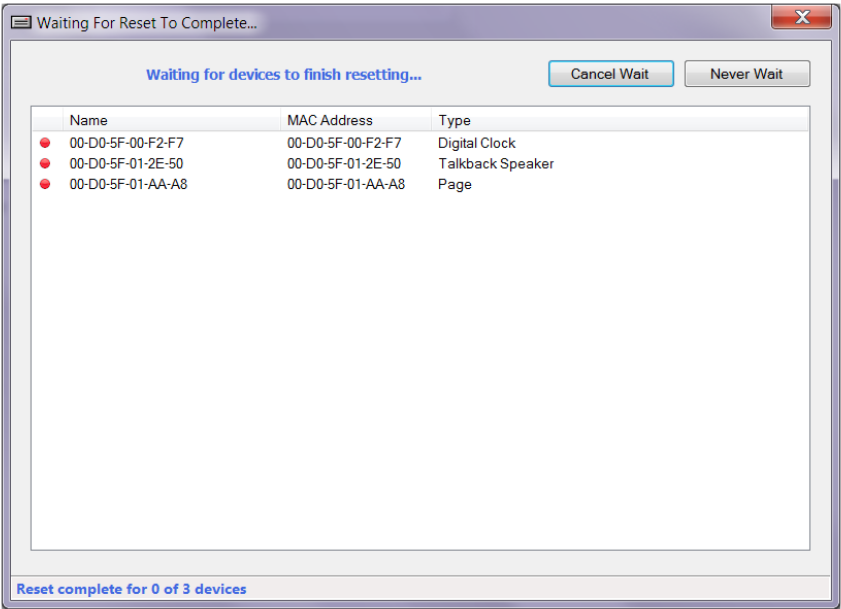
Each device will change from a red dot to a green check when the device is back up and running. If it takes longer than expected the dialog box will give a warning that it is taking longer than expected. You then have the option to Cancel Wait to return to the main tool window. Clicking Never Wait will cancel this wait and turn off this option for future resets. To turn back on go to Options menu and check **Wait to receive beacons after devices are reset.**

Communications Menu

Verifying Devices

The Verify options are used to confirm the ability to communicate with Valcom IP devices. The tool will flag a device as needing verification if settings on the device have possibly changed since they were first read into the tool and the tool needs to reacquire those few settings to make sure its local copy is correct. Verifying a device tests the communication channel and retrieves limited configuration information without performing a full scan. The information gathered during the verification includes the IP address, subnet mask, default gateway, DNS server addresses and whether DHCP is used for the configuration. The date and time of the last configuration change and the firmware version are also retrieved. During the verify, the tool then makes sure that the data stored in the tool is all correct for the version of device that was detected (removes data that doesn't belong and adds defaults for data that is missing).

The **Verify Devices** command will provide a dialog box listing all of the devices requiring verification (see below). The device(s) to be verified may be selected by clicking the check box beside the device name. After selecting the devices, click the **Verify** button to initiate the process. The status of the verification will be displayed in the Result column when completed.

The dialog box will normally only display the devices for which the VIP-102B IP Solutions Tool has flagged as needing to be verified. The **Show All** button may be used to have all known devices displayed in the list. The devices are then able to be selected for verification.

The **All** or **None** buttons may be used to select all, or deselect all listed devices, respectively.

The **Close** button will close the dialog box.

Verify Single Device provides the same dialog box, but with only the currently selected device listed. The device is preselected for verification. The verification process may be started by clicking the **Verify** button.
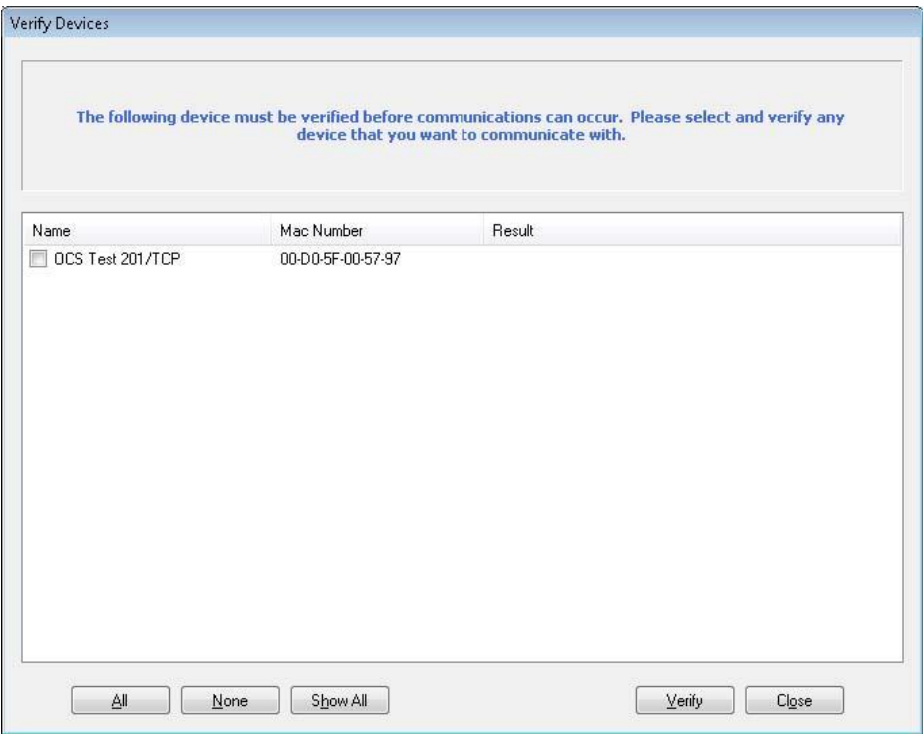
During the Verify process, the VIP-102B tool may determine that differences exist between the configuration settings stored in the 102B tool and settings stored on the actual device. A dialog box (shown below) will be displayed to choose which settings are retained.

Devices with differences will be displayed with their Name and Mac Number. For each device listed, three choices are available for determining the settings to retain.

- **Use All Tool Settings** . will preserve the configuration settings for the device currently defined in the VIP-102B IP Solutions tool. The settings defined in the tool will replace the device settings when the device is updated. Configuration settings retrieved from the device will be ignored.

- **Use Device Network Only** . will use only the Network configuration settings retrieved from the device. These settings will be combined with the other configuration settings currently defined in the VIP-102B tool and the combination of settings will be used the next time the device is Updated.

- **Use All Device Settings** . will ignore all settings currently defined in the VIP-102B tool, and will use the configuration settings retrieved from the device. This is equivalent to a regular Scan operation.

Clicking a specific device in the list will display more details of the configuration differences of that device in the side-by-side windows below the list. The left side window shows the configuration details as they are currently defined in the VIP-102B tool. The right side window shows the configuration details that were retrieved from the actual device.

For each device listed, click the line under the column to choose which settings to retain. Clicking the column heading will select that option for all of the devices listed.

Click the **OK** button to complete the Verification process using the chosen settings. Clicking the **Cancel** button will cancel the Verification process for the listed devices.
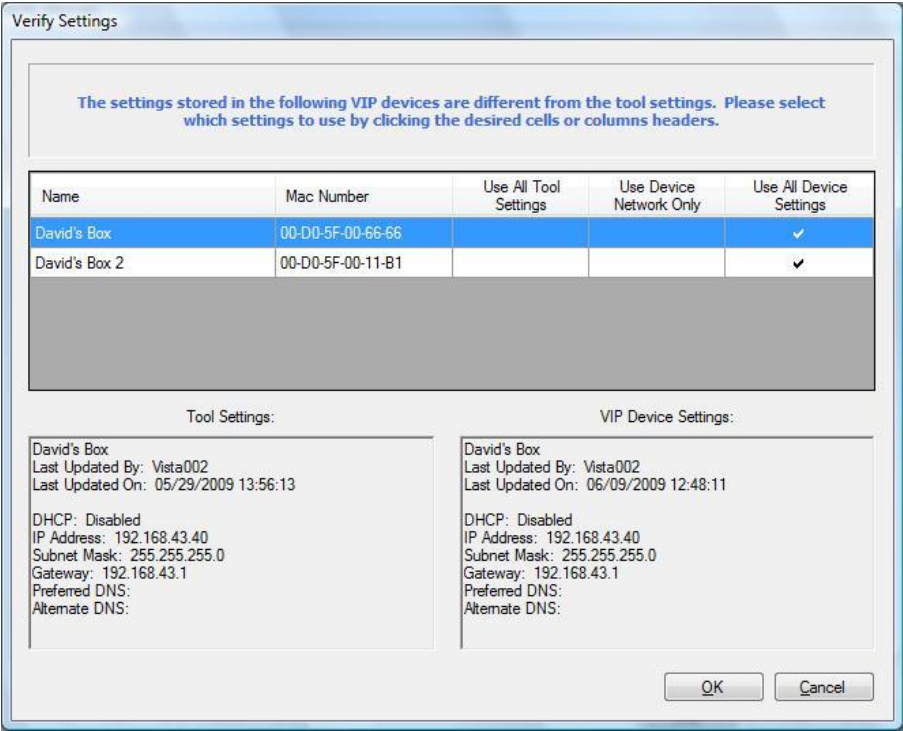
Communications Menu
Network Diagnostics

The Network Diagnostics option provides a listing of the devices found on the network, with real-time updating. All Valcom IP devices have the capability to send a "beacon" signal to announce their presence. The VIP-102B IP Solutions Setup Tool listens for beacons on the network, then displays the devices in a list as shown in the example below. The columns indicate the main information items, with a Details link to get more information about a specific device (see the Details section below). The information may be sorted by clicking on the column heading for Mac Number, Name, IP Address or Type.

The Broadcast and Multicast columns indicate whether a device is communicating via broadcast or multicast protocol. A green icon indicates the protocol is enabled and functioning. Since broadcasts are typically not forwarded by routers, the Broadcast icon will generally be red for any devices not on the same subnet as the computer running the VIP-102B tool. A red icon in the Multicast column could indicate a mismatch in the multicast IP addresses, network devices (routers, switches) that are not configured for multicast or multicast could be disabled on the Valcom device. Any packets that are dropped are listed in the Dropped column. This can be reset to 0 by clicking on the Reset Dropped Counts button.

While the Network Diagnostics screen is displayed, the VIP-102B tool will also send a beacon signal from itself. This provides a means of testing network connectivity by installing the VIP-102B tool on multiple computers, then starting the Network Diagnostics on each of them. If the network is appropriately configured for multicast, then each instance of the Network Diagnostics will detect all of the other computers.

Loaded	Broadcast	Multicast	Dropped	Settings	MAC Address	Name	IP Address	Type
	●	●	0	Details		WIN7PRO034	192.168.100.64	PC Tool
	●	●	0	Details		VALHPW7PRO17	192.168.60.63	PC Tool
	✖	●	●	0	Details	70-71-BC-E2-BE-E3	DavidA 6011	192.168.43.45	Application Server
	✔	●	●	0	Details	00-40-63-F2-EB-94	AppSrv-6001_2_6011-41056	192.168.41.56	Application Server
	✔	●	●	0	Details	00-22-4D-87-8E-40	Tech Support	192.168.97.75	Application Server Pro
	✔	●	●	0	Details	00-22-4D-AC-4B-03	Application Server Pro	192.168.11.159	Application Server Pro
	✖	●	●	0	Details	08-00-27-44-6C-5D	Application Server PRO	192.168.42.156	Application Server Pro
	✔	●	●	0	Details	70-71-BC-E2-CE-0D	Application Server PRO	192.168.41.124	Application Server Pro
	✔	●	●	0	Details	00-22-4D-89-55-52	Application Server Pro	192.168.41.25	Application Server Pro
	✔	●	●	0	Details	00-22-4D-87-8D-DE	Application Server PRO	192.168.11.164	Application Server Pro
	✖	●	●	0	Details	00-D0-5F-00-EE-D8	Main Hallway Clock	192.168.22.89	Digital Clock
	✔	●	●	0	Details	00-22-4D-83-EA-F8		192.168.41.54	eLaunch Server
	✔	●	●	0	Details	00-22-4D-88-2D-5D		192.168.48.152	eLaunch Server
	✔	●	●	0	Details	00-D0-5F-00-D9-45	Tim's 848	192.168.47.3	I/O Unit
	✖	●	●	0	Details	00-D0-5F-01-3D-29	I/O Gateway	192.168.60.150	I/O Unit
	✔	●	●	0	Details	00-D0-5F-00-9F-97	Valcom 01-00-97	192.168.41.153	One-Way Speaker
	✔	●	●	0	Details	00-D0-5F-00-98-56	Eng Conf Rm Spkr	192.168.49.22	One-Way Speaker
	✔	●	●	0	Details	00-D0-5F-00-2B-34	Eric's Speaker	192.168.42.152	One-Way Speaker
		●	●	0	Details	00-D0-5F-00-9D-05	DavidA OW Spkr	192.168.43.46	One-Way Speaker
		●	●	0	Details	00-D0-5F-00-AA-01	Tim's Cube 2	192.168.47.30	One-Way Speaker

Network Diagnostics - (239.1.1.2 : 4097, 239.1.1.5 : 4121) — Setup and Debug Address | Select All | Clear All | Settings | Add To System | Add Using Defaults — Tool Beacon — 49 Devices Detected

If the Details link is clicked, specific device information is displayed as shown in the screen below. The information provided depends on the capabilities of the device and may not include all of the fields shown below.

```
Details
Mac Number = 00-D0-5F-00-11-AD
Name = OCS 2007 R2 Test
Type = Station
Channels = 2
IP Address = 192.168.97.35
Subnet Mask = 255.255.255.0
Gateway IP Address = 192.168.97.1
Setup Port = 4097
Setup Multicast Address = 239.1.1.2
Software Rev = 2.13
Startup Rev = 1.17
Required Tool Version = 2.3
```

Devices can also be added to the scan by clicking the **Select All** button which will select all devices listed or **Clear All Button** to deselect all devices listed. You can also individually click on one or more individual devices.

You can then add these devices to the scan list if they were not previously selected as indicated by the green check mark or a red X in the **Loaded** column. Do this by clicking on the **Add to System** button. This will attempt to download the configuration of these devices. Successful ones will have a green check mark in the **Loade**d column while ones that failed will have a red X in the Loaded column.

You can also add the devices using defaults by clicking on the **Add Using Defaults** button instead of the **Add to System** button. This will load the devices with default configuration except for the network information. You may also select what settings to preserve when selecting **Add Using Defaults** by clicking the **Settings** button.

Reset Dropped Counts resets the Dropped column back to zero (0).

Communications Menu

Paging Diagnostics

The Paging Diagnostics option provides a window to display real-time paging control message activity detected on the network. Control messages indicate the start and stop of an audio page. The VIP-102B IP Solutions Setup Tool listens for control messages, then displays the messages in a list as shown in the example below. The information displayed includes the **Date** and **Time**, the page **Action** (start or stop), the **Group** to which the page is being sent, the **Source Name** and **Source IP** address of the page, and the **Priority** assigned to the page. The last column is **Data Received** which is a packet count of audio being receive on the multicast audio port.

The **Audio Port, Audio Multicast Address, Control Port** and **Control Multicast Address** fields indicate the port and address which will be monitored for activity. These values should only be changed if the these fields have been changed in the **Local Network** settings option on the Network tab of the device.

The **Log to File** option may be used to capture the activity to a text file. The folder icon at the end of the field may be clicked to invoke a standard file dialog box to select (or create) a file for the captured data. If an existing file is selected, a dialog box will provide options to either append new data to the file, or overwrite the file.

To stop capturing data to the file, click the red X icon to remove the file name from the field. This stops the data file capture, but does not delete the file.

To begin monitoring, click the **Start Listening** button. To stop, click the **Stop Listening** button.

The **Send Sample** button may be used to generate a sample page. See the following section for details.

Ignore IP will filter out source IPs you do not want to see once listening has been stopped.

The **Clear Ignored** will clear previously filtered out IP addresses.

The **Clear List** button simply clears the activity list.

Normally, page starts and stops are indicated by two successive messages. The **Ignore Duplicates** check box may be selected to hide repeated activity messages for each.

Click the **Close** button to close the window.

Communications Menu

Send Sample Page

The Send Sample Page function provides the ability to test the functionality of devices and their configuration by sending an audio file to audio groups. The VIP-102B IP Solutions Setup Tool includes several sample audio files, located in the SampleAudio folder under the VIP-102B installation folder (typically, C:\Program Files\Valcom\VIP-102B). The sample files include simple tones, white noise and human voice.

To send a sample page, choose the audio **Group** to receive the page from the list at the top of the dialog box. This list includes all of the audio groups known to the system. A single device may be tested by creating an Audio Group with the device as the only member. See the section on Audio Groups and Audio Group Membership in the System Menu.

The **Audio File** may be one of the samples provided or any audio file in the correct format (.raw or .wav). The folder icon may be used to browse for a file, or the file name may be entered directly in the field.

The **Priority** will be initially set from the priority level assigned to the group when the group was created. If desired, the Priority level may be changed to any of the other values (Low, Medium, High, Emergency and Absolute), which could affect the volume level of the page (see the information on Volume Offsets in the System Menu section). The Calibration priority will cause the sample page to ignore any volume offsets assigned to the page group. This setting can be used with the Volume Adjustments option under the Programming menu to ensure the page is sent without having the volume modified by the group priority setting.

The **Mode** selection may be **Single**, **Repeat** or **Continuous**.

- **Single** will cause the sample page to be sent one time.

- **Repeat** will send the sample page, including the start/stop control messages, until the **Stop Page** button is clicked. A short delay is inserted between each page.

- **Continuous** will send the control message to start the page, and then the audio file will be sent continuously until the **Stop Page** button is pressed.

The **Audio Port** and **Audio Multicast Address** fields will be initially set from the system default values assigned in the Network Settings under the System menu. If the group was created with an alternate multicast address and port, those values will be used. In general, these values will not need to be modified, but may be changed if necessary for test purposes.

Process Audio checkbox can be selected toõ .

When all information has been entered, click the **Start Page** button to send the sample audio file to the selected group. Clicking the **Stop Page** button will end the page immediately. Click **Close** to close this window.

Send Sample Page

Page Settings

Group:	999
Audio File:	ram Files (x86)\Valcom\VIP-102B\SampleAudio\DualChime.wav
Text Message:	Test Page Active
Priority:	10
Mode:	Single
Audio Address:	239.1.1.3
Audio Port:	4098

☐ Process Audio

Start Page   Stop Page   Close
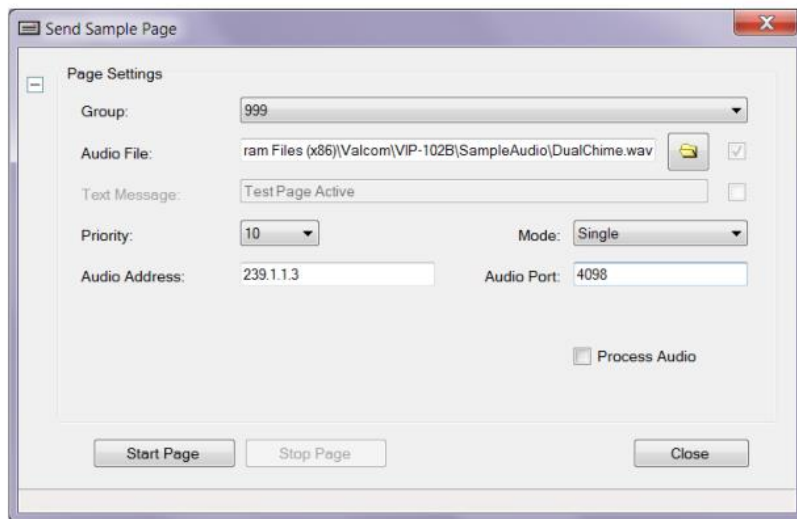
Communications Menu

View Syslog Messages

Valcom IP devices have the capability to generate and send syslog messages to any IP address. The View Syslog Messages function provides a convenient way to capture and display those messages for troubleshooting purposes. The syslog viewer connects to the standard syslog network port (514).To receive syslog messages, a device must first be programmed to send syslog messages to the IP address of the computer running the VIP-102B IP Solutions Setup tool. The programming is done on the Network tab of the Valcom device properties. When the Syslog Viewer function is started, any messages received will be displayed, as shown in the example below.
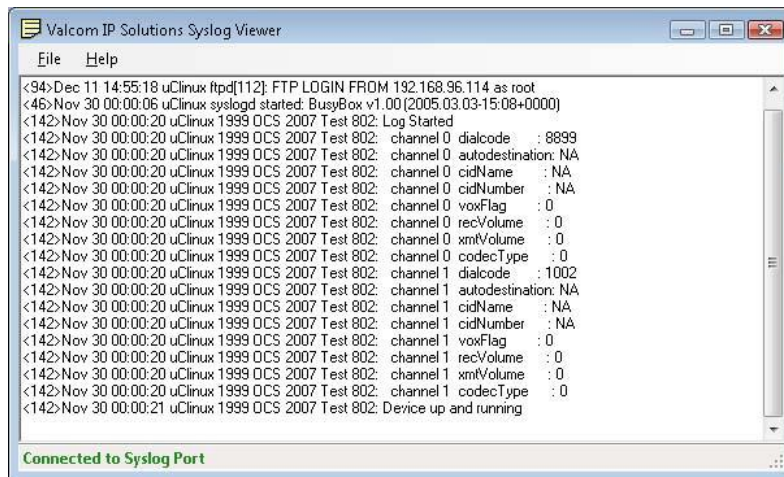
The File menu in the Syslog Viewer has the following functions:

- **Connect** . starts the viewer application listening on the standard syslog port (UDP / 514).

- **Disconnect** . stops the viewer application from listening for syslog messages.

- **Clear Screen** . clears all messages from the display.

- **Log to File** . opens a standard file dialog box to input a file name in which to store the messages. The messages are stored as plain text. When this option is enabled, the message %Logging to:% and the file name are displayed in the lower right corner of the screen. Click the Log to File menu option again to turn off logging. If the log file in which to store messages already exists, the option is provided to either append new log data to the existing file, or to overwrite the existing file.
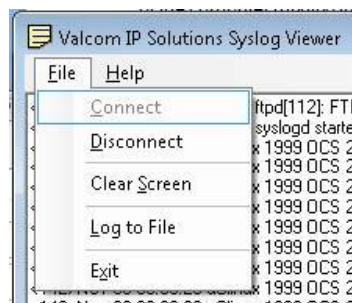
Communications Menu
Program Firmware

Firmware is the programming installed on every Valcom IP device that provides the functionality for the device. Periodically, updated firmware files are made available by Valcom to provide new functions or enhance the existing capabilities of devices. Updated firmware files are available by contacting Valcom Technical Support.

Firmware files are created and distributed for specific Valcom IP devices or groups of similar devices. It is important to select the correct firmware file for the device being updated. Installing incorrect firmware could cause loss of functionality of the device, or even render the device unusable. When downloading the file from the Valcom web site, make a note of the name of the file and the download location (folder) on the local computer.

When the Program Firmware option is selected from the menu, a dialog box will appear requesting to save a Snapshot before proceeding. If Yes is selected, a file dialog will appear to select a name for the Snapshot file. Valcom recommends saving Snapshots before making major changes.

The **Program By** dropdown list provides two methods for updating firmware, by **Available Devices** or by **Known IP Addresses**. Using Available Devices allows selecting from the list of devices previously scanned from the network. Programming by Known IP Addresses allows inputting an IP address directly and choosing the corresponding device type from a list.

Selection using Available Devices:

Enter the full path and filename of the downloaded firmware file into the Firmware File field at the top of the Program Firmware dialog box. The name may be typed directly into the field, or the browse button at the right side of the field may be used to locate the file. In the example below, the file "vip824-firmware-2.13.tar" located in the "C:\Firmware" folder will be used for the update.

In the list of available devices, select one or more devices to be updated simultaneously. The device(s) are chosen by clicking the check box in the **Name** column of the list. Information about the devices is provided in the list box to help with identification. The **All** or **None** buttons above the list may be used to select all of the devices, or deselect all of the devices, respectively. This should be used with caution. Only devices that are compatible with the firmware file being used should be selected. Applying an update to the wrong type of device (as noted in the Type column) could have undesirable effects. When all of the desired selections have been made, click the **Add** button above the device list to move the selected devices into the **Programming List** box.

The selected devices will be moved from the Available Devices list to the Programming List. Each device will show the Firmware File that will be used to update the device. Additional devices may be added to the Programming List by repeating these steps. If the additional devices are of a different Type, then the Firmware File selection must be changed to match the device type.

In the example shown below, the firmware file "vip824-firmware-2.13.tar" was entered into the Firmware File line, the device "VIP-824" was checked in the Available Devices list, and the Add button was then clicked. This moved the VIP-824 device into the Programming List. Then the Firmware File was changed to "vip804-firmware-2.13.tar", the device "VIP-804 Office" was checked, and the Add button was again clicked. This moved the VIP-804 Office device into the Programming List. Notice that each device in the Programming List has a different firmware file associated with it.
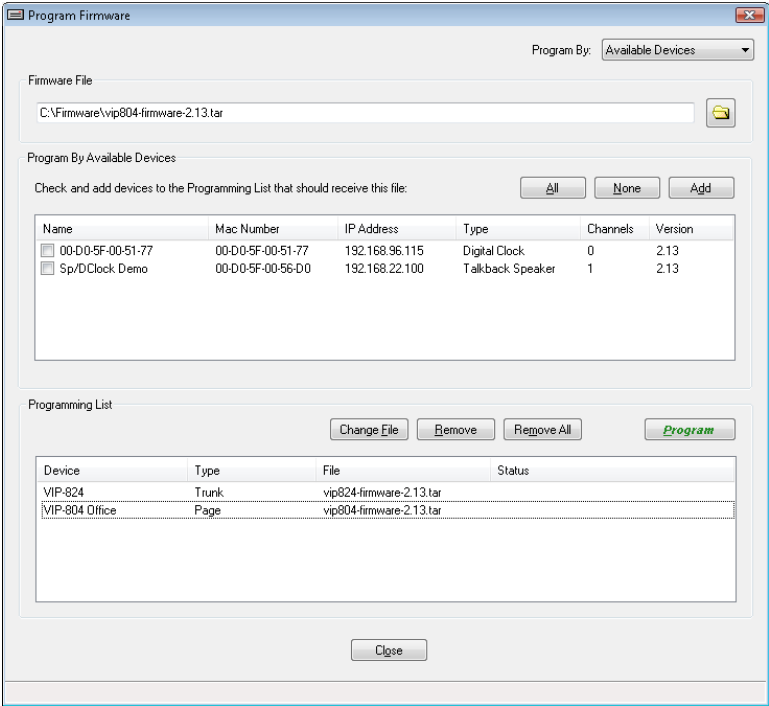
The **Remove** button may be used to remove a single entry from the Programming List. Highlight the device to be removed, and then click the Remove button. The device will be returned to the Available Devices list. The **Remove All** button will clear all devices from the Programming List. If a Firmware File is incorrectly associated with a device in the Programming List, it can be modified using the **Change File** button. To do this, enter the correct file name (and path) in the Firmware File line, highlight the device in the Programming List to be changed, and then click the Change File button. The firmware file will now be associated with the device in the Programming List.

Selection using Known IP Addresses:

The second method of selecting devices for updates is by entering IP addresses directly.

Enter the full path and filename of the downloaded firmware file into the **Firmware File** field at the top of the Program Firmware dialog box. The name may be typed directly into the field, or the browse button at the right side of the field may be used to locate the file. In the example below, the file "vip201_081409.tar" located in the "C:\Documents\Firmware" folder will be used for the update.

Enter the IP address of the device to be updated in the address field and select the correct device type from the dropdown list beside it. Then click the **Add** button beside the device type selection to add the device to the Programming List. Only devices that are compatible with the firmware file being used should be entered.

Applying an update to the wrong type of device (as noted in the Type column) could have undesirable effects.
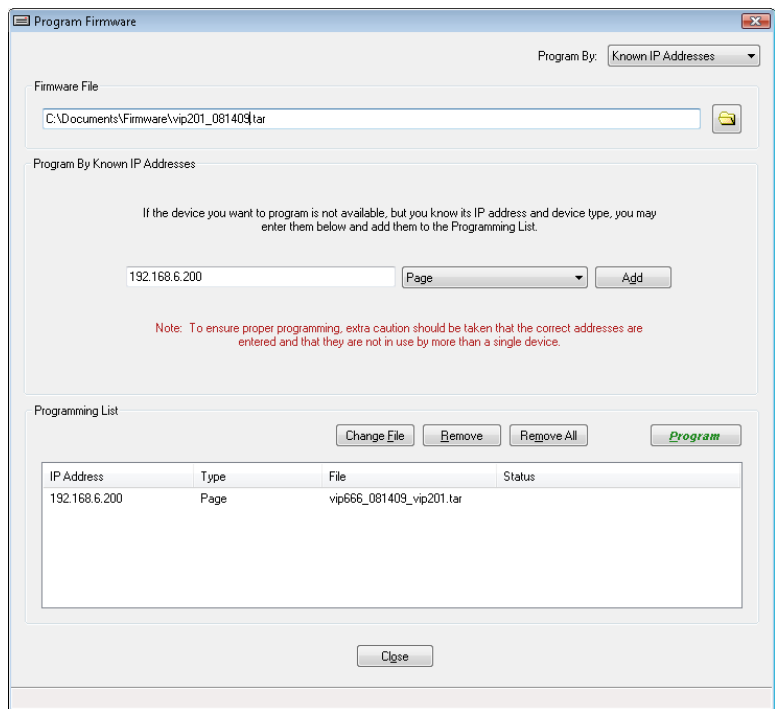
The **Remove** button may be used to remove a single entry from the Programming List. Highlight the device to be removed, and then click the Remove button. The **Remove All** button will clear all devices from the Programming List. If a Firmware File is incorrectly associated with a device in the Programming List, it can be modified using the **Change File** button. To do this, enter the correct file name (and path) in the Firmware File line, highlight the device in the Programming List to be changed, and then click the Change File button. The firmware file will now be associated with the device in the Programming List.

Completing the Firmware Update:

After all devices to be updated have been selected using either of the two methods, and the correct firmware files associated with the devices, click the **Program** button to begin the update process. A warning dialog will be displayed for confirmation. Clicking Yes will proceed with the update process, clicking No will cancel the process.
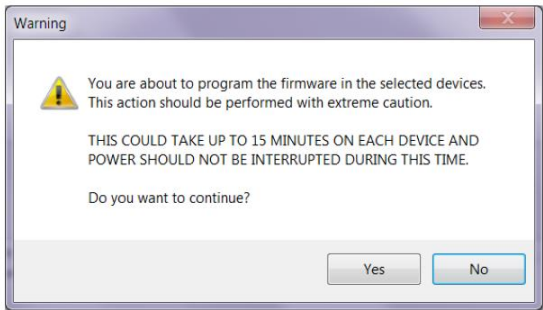
The update process copies the appropriate firmware files to the selected devices, then triggers a reset (reboot) of the updated devices. The progress of these steps will be shown in the Status column of the dialog box. The example below shows the update process was Successful for both devices in the Programming List.
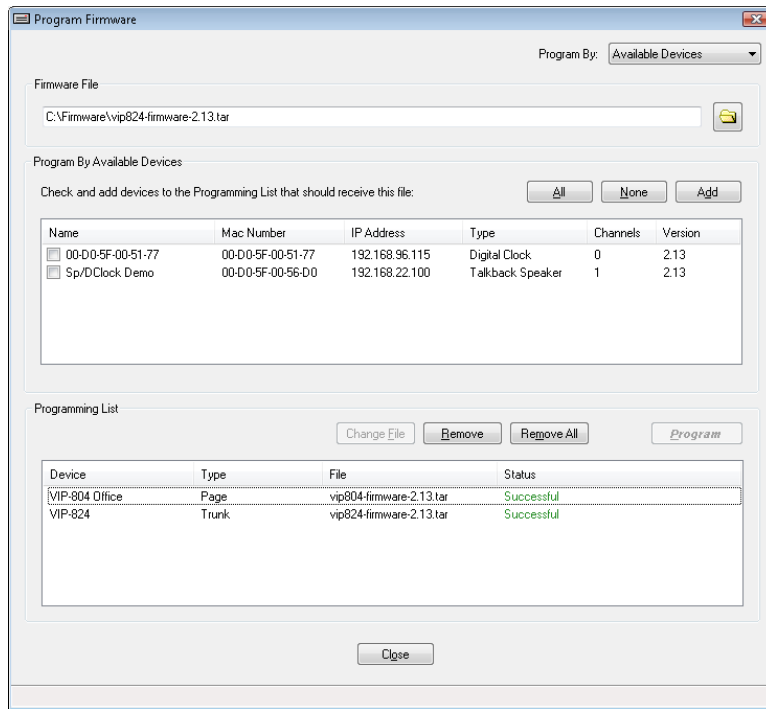
After closing this dialog box, the updated devices will be displayed in the device tree view with a Yellow icon, indicating a rescan is required. Scan the device(s) to retrieve programming information and confirm the new firmware version.

Communications Menu
Upload Device Files

Selected Valcom VIP devices have functions that play audio files in response to certain events. Custom audio files may be uploaded to the Valcom device when specific messages are desired for these events. The Upload Device Files option is used to define user-supplied audio files to be used by the Valcom device. The audio files must be in one of the following formats:

- .RAW . 8 bit, 8000 Hz sample rate, PCM (pulse code modulation)

- .WAV . 8 bit, 8000 Hz sample rate, PCM

Valcom has made available an IP Audio Converter program that can convert most common audio files to the correct version. Please contact Valcom Technical Support for more details if conversion assistance is required.

To upload a file, choose the type from the **File Type** drop-down list box. In the **Source File** text box, enter the full path to the audio file. The name may be typed directly into the field, or the browse button at the right side of the field may be used to locate the file. The **Process Audio** check box is only available if the Valcom IP Audio Converter program is installed. If selected, the IP Audio Converter program will automatically adjust the volume levels in the selected audio file to optimize the sound quality before it is uploaded to the Valcom device.

In the **Devices** list, select the devices to be updated with the chosen file by checking the box by the name of the device. The **All** or **None** buttons may be used to select all of the devices, or deselect all of the devices, respectively. Click the **Upload** button to update the selected devices with the new audio file.

The File Types that are available for customization include:

- **Incomplete Call Message** . which is the message played when a call cannot be completed to the intended destination.

Device Menu

The Device Menu provides options for managing the list of devices displayed in the device tree view, both for Snapshots and for live devices.

- **Add Sample Devices** . displays a dialog box listing all of the available Valcom IP devices that can be programmed with this tool. Various combinations and quantities of devices can be selected. This is used to select sample Valcom IP devices for simulated configuration.

- **Remove All Devices** . removes all endpoints from the current scan results in the device tree view.

- **Remove Selected Devices** . removes and optionally ignores selected endpoints from the current scan results. A dialog box is presented listing the devices currently scanned. One or more devices may be selected to be ignored. The ignore option also includes the ability to ignore for just this session, or to permanently remove from the list of devices. The list of ignored devices is managed from the Ignore List option (see below).

- **Replace Devices** . provides a method to transfer the programming from one device to a new device.

- **Find Device in Tree** . provides a method to input a MAC address to search for in the current device tree view.

- **Ignore List** . is a function that creates an internal listing of devices that should not be displayed in the device tree view. Options are provided to view, add, or reinstate endpoints from the list.

Device Menu
Add Sample Devices

The Add Sample Devices dialog box provides a listing all of the available Valcom IP devices that can be programmed with this tool. Various combinations and quantities of devices can be selected to build a sample configuration for training.

Clicking the Add Sample Devices menu option will display the dialog box shown below. The top of the screen shows the available subnets that have been defined using the Network Definitions option. A valid subnet is required to be defined before adding sample devices. Clicking the **New** button will display the Subnet Configuration dialog box to allow entering a subnet to use for the devices. If subnets are already defined, clicking the **Edit** button will allow changes to be made to the subnet configuration.

You may also filter the device type list by selecting from the dropdown box above the list. The default is All Devices.

With the desired subnet selected, the sample devices may be selected from the listing. Enter the desired quantity for each device type in the **Quantity** column, then click the **Add** button. The devices will be added to the device tree view of the VIP-102B tool, using default names and values. The IP addresses for the devices will be assigned from the chosen subnet, beginning with the first unused address and continuing sequentially. A warning message box will be displayed if there are not enough IP addresses available in the subnet for the quantity of devices being added. In that case, the quantity of devices to add may be reduced or the subnet may be modified to provide enough available addresses.

Click the **Close** button when all of the devices have been added.

Device Menu

Remove Selected Devices

The IP Solutions Tool provides two ways of preventing devices from being displayed in the device tree view. The **Remove** option prevents a device from being scanned or displayed, but only for the current session. The **Remove and Ignore** option prevents the device from being scanned or displayed, and enters the device into the Ignore List. Devices in the Ignore List are remembered between sessions. Information on the Ignore List is provided later in this section.

The Remove Device command and the Remove and Ignore command can be accessed from the pop-up menu for individual Valcom devices. Simply right-click the device name in the device tree view, then select either the Remove Device or Remove and Ignore option from the pop-up menu. Executing the function through the pop-up menu will affect only the single device selected.

Additionally, all displayed devices can be removed by choosing the %Remove All Devices+option from the Device menu. A confirmation dialog box will be displayed, from which the command may be cancelled. To restore the display of devices, perform a network scan.

The **Remove Selected Devices** command under the Device menu provides a dialog box (shown below) to select devices to ignore. The command displays a list of devices, from which one or more may be chosen by clicking the box in the Name list. The **All** or **None** buttons may be used to select all of the devices listed, or to deselect all devices, respectively. The **All Sample** button will select all of the sample devices that have been previously added (this button is hidden if there are no Sample Devices to remove).

After selecting the devices, click the **Remove** button to ignore them for the current session only. Performing a network scan will restore all %removed+devices to the display.

Clicking the **Remove and Ignore** button will remove the selected devices from the display, and also put them into the Ignore List. Devices in the Ignore List will not be scanned or displayed.

Click the **Close** button to dismiss this dialog box.
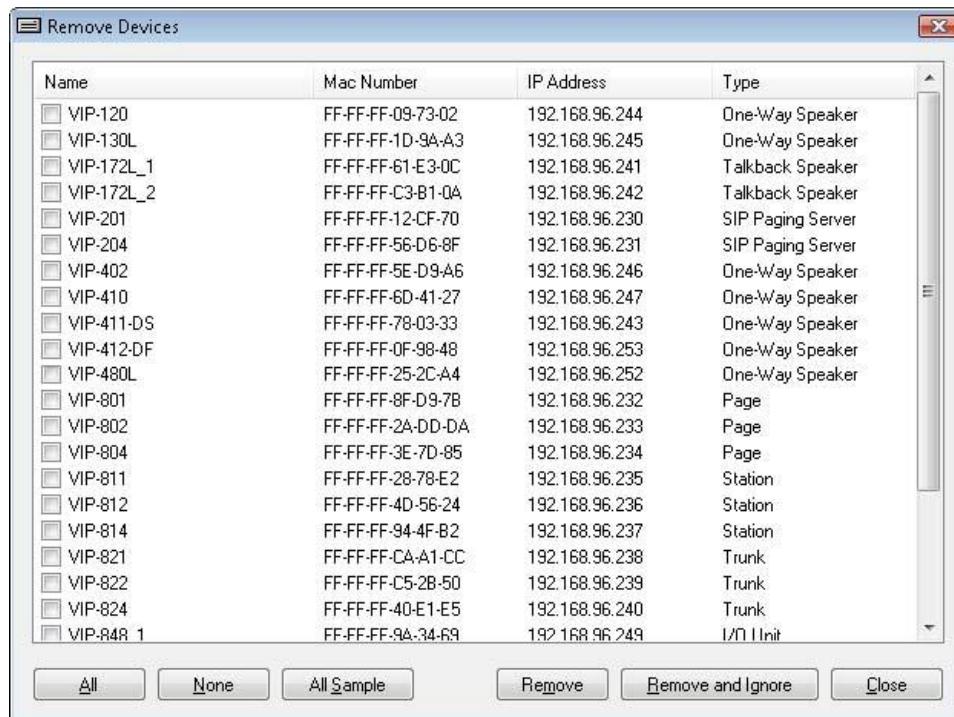
Device Menu

Replace Devices

The Replace Devices dialog box provides a method to transfer programming from one Valcom IP device to another IP device. The source and destination devices must be the same type, such as Station or Trunk and have the same number of channels. Transferring programming between different types of devices (Station to Trunk, for example) is not supported.

The top of the Replace Devices window includes a list of the steps involved in the replacement process, with the current step shown. Clicking the list will expand it to show all of the steps.

Step 1 – Specify replacements and assign IP addresses

Use the Replace Devices dialog box to specify the source and destination devices.

The **Available Loaded Devices** list corresponds to the devices shown in the Device Tree View portion of the 102B tool. The devices in this list are Valcom IP devices that have been scanned by the 102B tool and had the configuration details successfully downloaded to the tool. This list can also include any sample devices that have been added to the Device Tree View, as well as devices loaded from a saved Snapshot file. Sample devices may be easily identified by the Mac Number beginning with the digits "FF-FF-FF". Devices that have been added to the Ignore List will not be displayed in this list, nor will devices for which the correct password is not known. The devices in this list can be considered the *source* of the replacement. It is the programming of these devices that will be duplicated onto the replacement devices.

The **Replacement Devices** list is initially populated with any IP devices that have been detected by the VIP-102B tool, but were not successfully scanned by the tool. This could include unconfigured devices, such as a new device that still has the factory default programming. If a device that is to be used as a replacement is not displayed in the list, click the **Find Devices** button to scan the network for available devices. The devices in this list can be considered the *destination* of the replacement. Any programming on these devices will be replaced by the programming of the chosen device from the Available Loaded Device list.

In the example shown, two sample devices and one existing "real" device are in the Available Loaded Devices listing, and one new (unconfigured) device is in the Replacement Devices list. To replace a device, click and drag a device from the Replacement Devices list to a corresponding device in the Available Loaded Devices list. The mouse cursor will change to indicate if the device types match.

Release the mouse button to "drop" the replacement device onto the Available Loaded Device. The example shows the result of dragging a Replacement Device to an Available device named "VIP-801 Sample 2". The "Replace With" column will now show the MAC address of the Replacement Device. The Status column shows "Earlier Version" indicating the firmware on the Replacement Device is a lower version than the Available Loaded device. Note that the replacement unit is also removed from the Replacement Devices list.

If an association needs to be changed, the **Clear** button may be used to remove one replacement association from the Available Loaded Devices list. The Replacement Device will be put back into the list, where it may be chosen to associate with a different Available Loaded device. The **Clear All** button will remove all associations from the list.
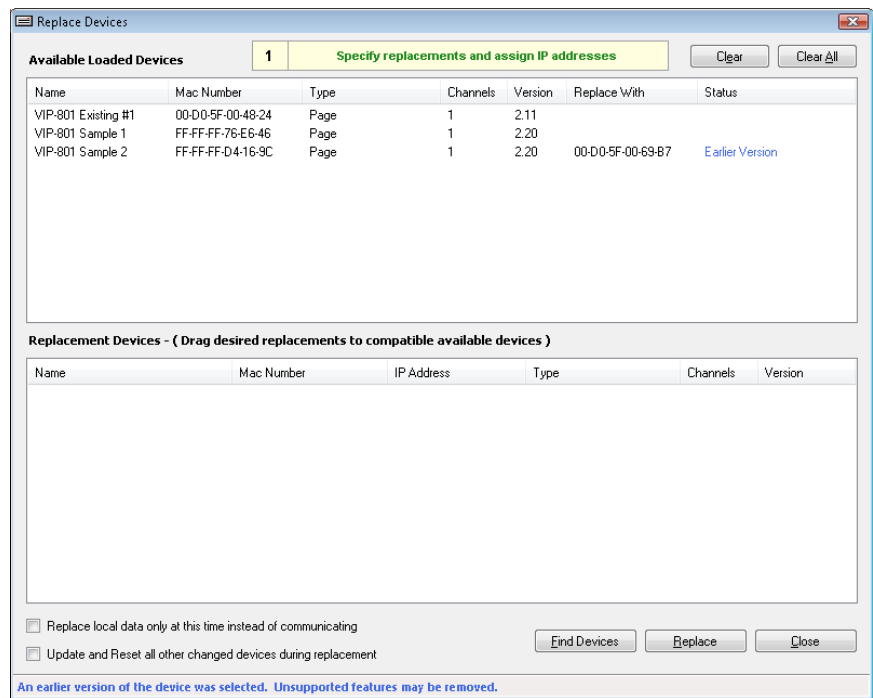
Two checkboxes at the bottom of the dialog box provide additional control of the replacement process. The default process will transfer the programming to the destination device(s) over the network immediately. By checking the option to **Replace local data only at this time instead of communicating**, the programming will be transferred only within the database of the VIP-102B IP Solutions Setup Tool and not updated to the destination device. If this option is chosen, the device will still require a manual Update and a Reset to make the new programming effective. The Update and Reset commands are located on the Communications menu.

Selecting the option to **Update and Reset all other changed devices during replacement** will instruct the VIP-102B tool to update the devices involved in this replacement operation, as well as all other devices that have been changed during this programming session.

When all of the desired replacements have been selected, click the **Replace** button to start the replacement process. A warning dialog will be displayed to provide a final confirmation to proceed. Click **Yes** to continue.
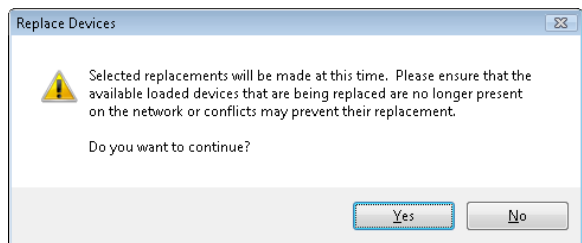
The initial replacement steps will be performed, and the Status column will show the outcome for each device. In this example, the replacement was successful and the Status column indicates an update is required to complete

the process. The Replace Devices process has now assigned the correct IP address and other network settings to the device, but other data changes have only been made in the database of the VIP-102B tool, not directly on the physical devices. All of the replacement information now has to be uploaded to the device to become effective. Click the **Continue** button to go to the next step.

Step 2 – Distribute Replaced Devices

Install the replacement devices on the network. The replaced devices will now have the network configuration (IP address, gateway, etc.) for their final location, so they must be moved to the correct network segment to operate correctly. It is also important to make sure any original devices (that were replaced) are removed from the network to avoid any conflicts with IP addresses, dial codes, etc.

Step 3 – Program Firmware

Update the firmware on replaced devices, if necessary.

This step is optional. If the Replacement device has the same or newer version of firmware than the source

Available Loaded device, then this step may be safely skipped. If the source Available Device has newer firmware than the Replacement Device, then any features or programming that are not supported in the older firmware will be removed. To avoid the possibility of dropping features, it is recommended to update the firmware of the destination Replacement Device if it is older than the Available Device.

The basic process is to select the firmware file to be used, and then select which devices should receive this file. The firmware update process is described in more detail in the Program Firmware topic in the Communications Menu section of this manual.

For this example, the firmware was updated with a newer version. The device named "VIP-801 Sample 2" was selected to be updated with the firmware file "vip801-r215.tar".

After the firmware programming is complete, or if this step is not necessary, click the **Continue** button to proceed.
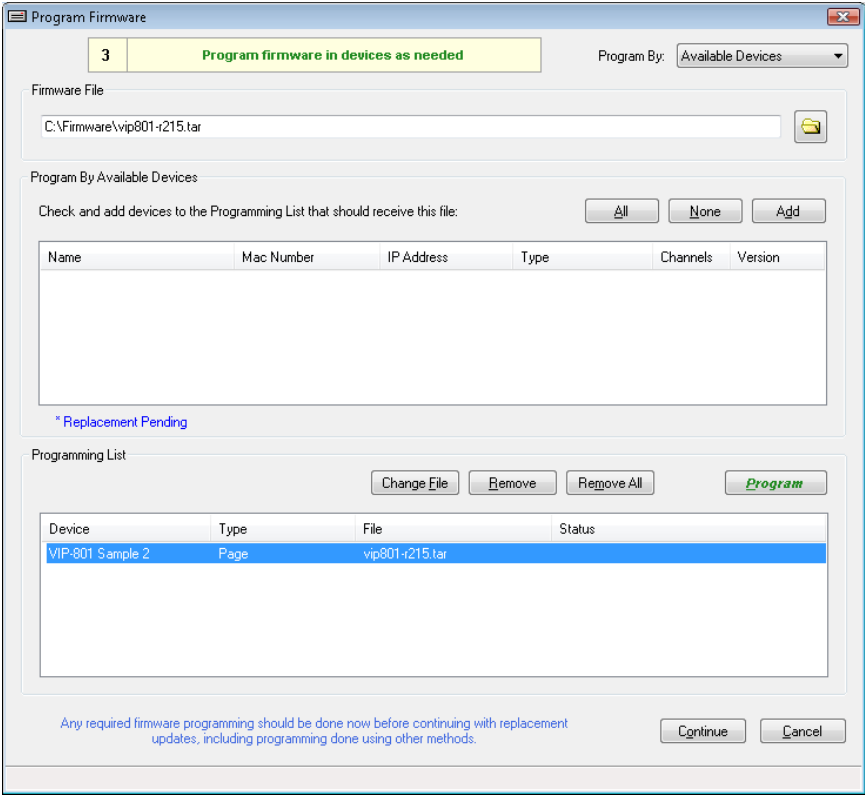
Step 4 – Verification

Verify the replaced devices.

After the firmware programming is complete, the newly updated devices must be verified by the VIP-102B IP Solutions Tool before further programming can be completed. The verification process checks the basic connectivity status of the device(s) to make sure communications are possible with them. The verification process is described in more detail in the Verify Devices topic in the Communications Menu section of this manual.
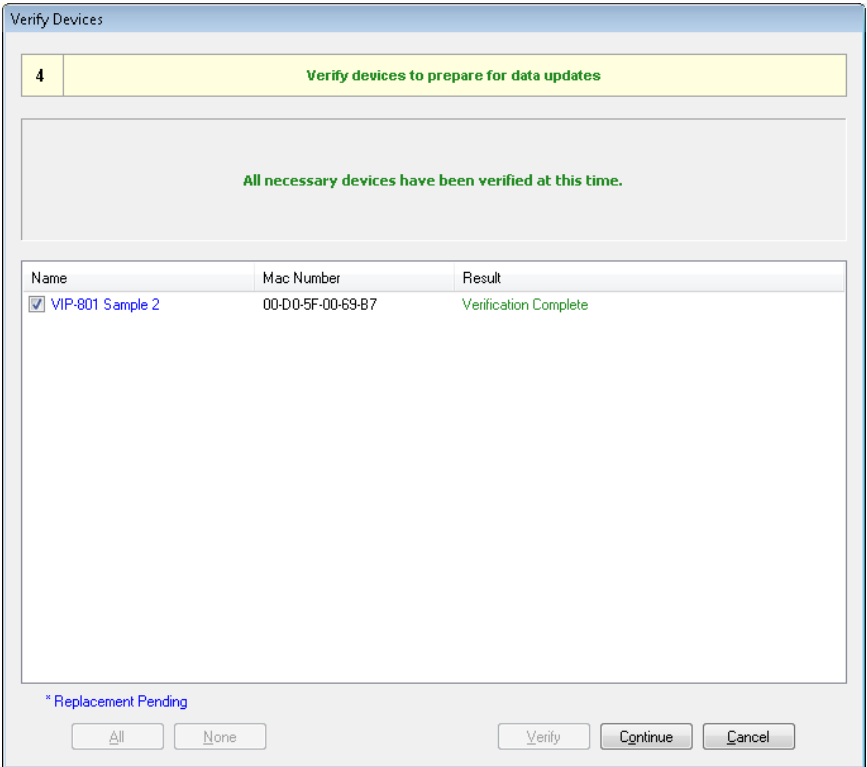
Step 5 – Update Devices

Update the replaced devices with the new programming.

After the devices have been verified for communications, the devices must be updated with the remainder of the programming options from the VIP-102B IP Solutions Setup Tool database. Click the **Yes** button to finish uploading the programming to the device(s).
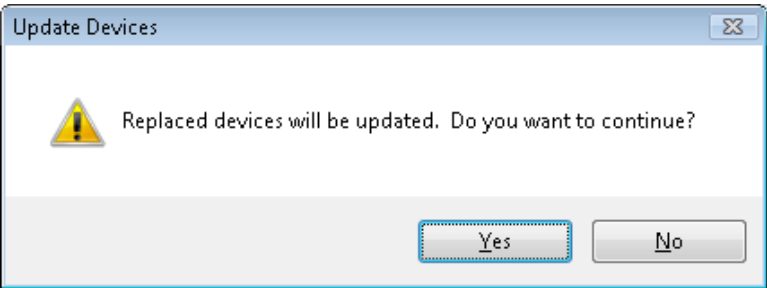
Step 6 – Reset Devices

Reset the replaced devices to make the new programming effective.

After all of the programming has been uploaded, the final step is to reset (reboot) the replaced device(s) to make the new programming effective. Click the **Yes** button to proceed with the reset action.
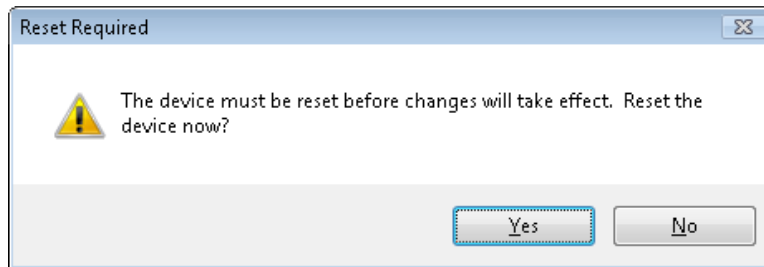
Device Menu

Ignore List

The Ignore List is an internal database of devices that will not be scanned over the network or displayed in the device tree view. This is designed to be a convenient method of blocking the scanning and display of devices that do not need to be displayed. This could be used, for example, to limit the display to only the devices located in one building or one floor of a building. Ignored devices are not checked for conflicts.

Clicking the Ignore List option from the Device menu will display the dialog box shown below. Devices listed will be ignored by the tool. Using the Delete commands from this dialog box will remove devices from this list, which allows the VIP-102B tool to work with the devices as usual.

Clear List on Startup and File Close, if checked**,** will remove all previously ignored devices when the tool is launched or a **Close** is used from the **.**

Clicking the **Add** button will display a dialog box allowing the input of a name and MAC address. The device will then be entered into the Ignore List. An easier method is to select the device to be ignored directly in the Device Tree View, then right-click the device and choose %Remove and Ignore+from the pop-up menu.

The **Edit** button provides a dialog box to edit an existing ignored items name. Only the displayed name is editable, the MAC address is not editable.

The **Delete** button will remove one or more devices selected from the list. Multiple devices may be selected by using the Control key when clicking with the mouse. After selecting devices, click the **Delete** button to remove them from the list.

The Delete All button will remove all devices from the list.
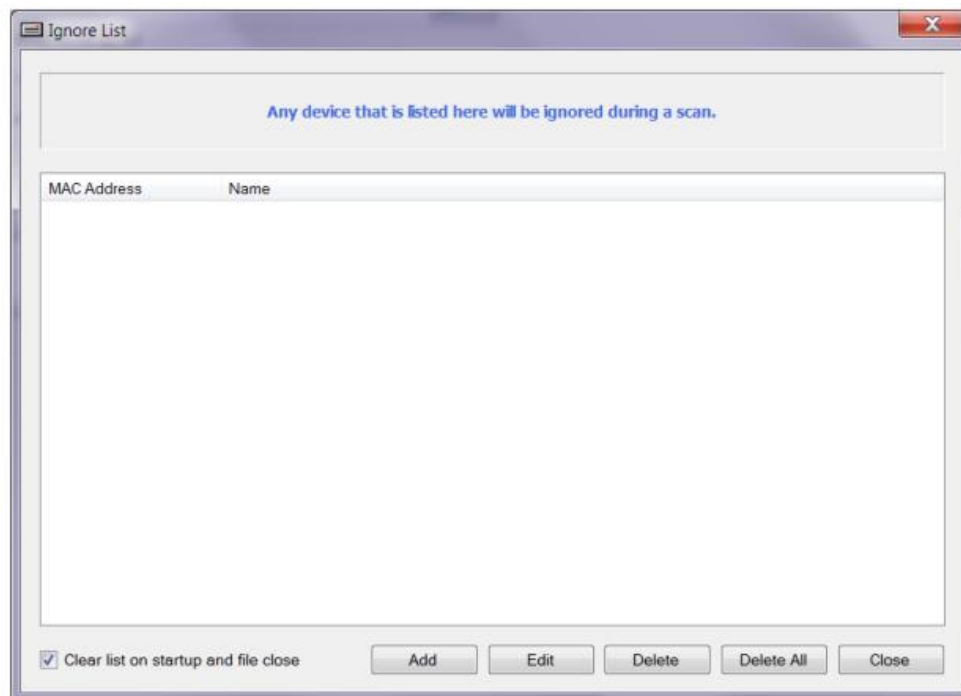
Security Menu

NOTE: Valcom IP devices and the VIP-102B IP Solutions Tool are programmed at the factory with a widely-known default password of "moonbase". It is recommended that all default passwords be changed upon installation. Be aware that if the Main Tool Password is changed, the new password is stored in encrypted format on the computer's disk.   If that encrypted file is lost, there is no way to recover the password. Valcom devices with unknown passwords must be returned to the factory to have the password reset to the default.

Change Device Passwords...
Set Main Tool Password...

Remove All Tool Passwords...

Hide Invalid Password Devices

Manage Secure Communications...

- **Change Device Passwords** . invokes a dialog box with fields for changing the password on one or more devices. The correct password is required to retrieve or update a device's configuration. The VIP-102B IP Solutions Tool can store one password internally. The tool will use its stored password to communicate with endpoint devices when performing a network scan. If the password on a device is different from the tool's stored password, the tool will prompt for the correct password. If the correct password is entered, the tool will be able to retrieve the configuration information. If the correct password is not supplied, the device will be displayed in the device tree view with an Orange icon, indicating Invalid Password. Additional passwords entered during a scan will be stored until the VIP-102B tool is closed.

- **Set Main Tool Password** . invokes a dialog box with fields for changing the password stored internally by the VIP-102B IP Solutions tool.

- **Remove All Tool Passwords** . This will erase all passwords the tool has remembered. You will be prompted

Remove All Passwords

⚠ All password information that is remembered by the tool will be removed! THIS CANNOT BE UNDONE! Please make sure you know your password before proceeding or access to devices will be lost!

Do you want to continue?

Yes   No
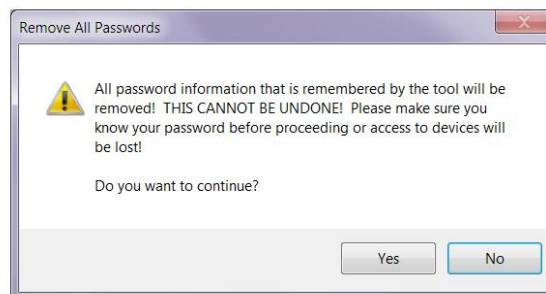
 Click Yes if you wish to proceed or No to cancel this.

- **Hide Invalid Password Devices** . hides the display of endpoint devices whose password does not match the password stored in the tool, and which did not have a valid password entered when a device scan was attempted.   See the "Change Device Passwords" section above for more details on the passwords used when scanning the network for devices. When selected, devices for which the correct password was not entered will not be displayed in the device tree view. Clicking this option again will "unhide" the devices.

- **Manage Secure Communications –** This option allows you to define whether or not you will be using secure communications (SSH/SCP) to communicate with the Valcom devices. In addition, you can specify

individually which devices will be accessed securely or not.   Note: Newer Valcom devices (referred to as Gen 3 devices) are capable of handling secure communications. Older Valcom devices (referred to as Gen 2 devices) do not support secure communications. The tool will determine the devices capability during the scan process.

Security Menu
Change Device Passwords

The dialog box for changing device passwords provides options for selecting one or more devices to change, entering new passwords and setting the main tool password.

The devices to be changed must be selected from the list at the top of the dialog box. A device is selected by clicking the checkbox beside the device name. The **All** button will select all of the devices, the **None** button will clear all selections. The list may be filtered by checking the box to **Only show devices with invalid passwords**.

The current password for a device must be entered before a change can be made. Enter the password in the **Current Password** field. The **Use Factory Default** checkbox will cause the tool to use the factory default as the current password.

The new password must be entered into the **New Password** field, and re-entered in the **Confirm New Password** field. Checking the **Use Factory Default** checkbox will cause the tool to use the factory default password as the new password, effectively resetting the password on the device(s) to the factory default.

Checking the **Set As Main Tool Password** checkbox will cause the VIP-102B tool to use this new password as the main tool password for this session only, and the password will be %forgotten+when the program is exited. To have this new password remembered when using the tool in the future, the **Remember This Password** checkbox must be selected.

After completing the appropriate fields, click the **Change Passwords** button to send the password changes to the selected devices. The **Result** column will indicate the status of the change.

Security Menu

Set Main Tool Password
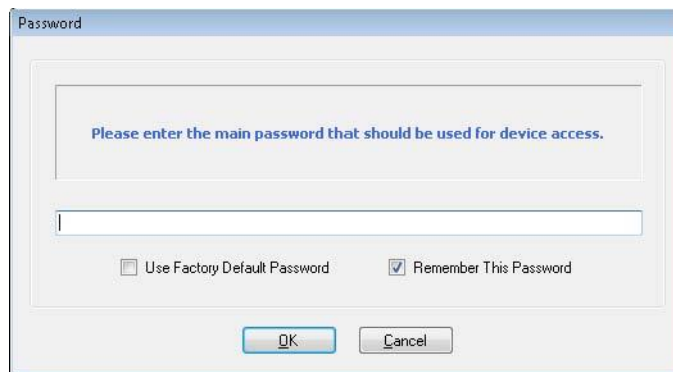
The VIP-102B IP Solutions Tool stores one main password internally. This password is used by the tool when connecting to Valcom IP devices. If the main password stored by the tool matches the password assigned to the Valcom IP devices, then device configuration can be retrieved without requiring additional passwords to be entered. If the password stored by the VIP-102B tool does not match the password assigned to a Valcom IP device, then the tool will prompt for the correct password when connecting to the device.

Type the new password into the text field. Checking the **Use Factory Default Password** checkbox will cause the tool to use the factory default password as the main tool password.

The new password will be used as the main tool password for this session only. To have this new password remembered by the tool for future sessions, the **Remember This Password** checkbox must be selected.

After completing the appropriate fields, click the **OK** button to store the new password.

Click the **Cancel** button to exit the function without making any changes.

Security
Manage Secure Communications
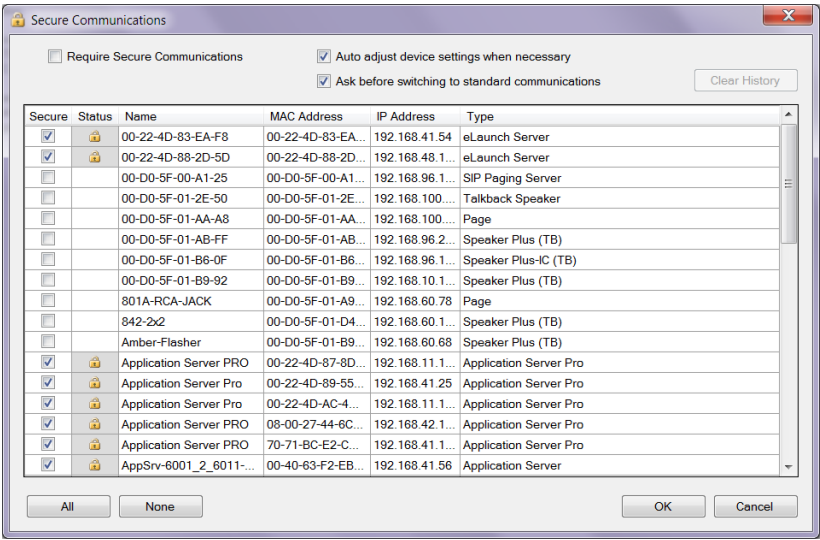
Selecting **Require Secure Communications** will set the tool to set secure communications for every device that is scanned. You will be prompted for confirmation. If you answer Yes, all devices will be flagged as requiring Secure Communications (lock symbol in Status column). If you answer No, any device not already selected for Secure Communications will be flagged with an error (red error symbol in Status column). If you select Cancel the change is disregarded.

Auto adjust device settings when necessary will allow for the tool to attempt secure communications and fall back to unsecure if secure method fails. If **Require Secure Communications** is set then this will fail to scan any devices.

Programming Menu

- **Assign IP Addresses** . allows IP addresses to be automatically assigned to one or more Valcom IP devices. The IP addresses that may be assigned are defined in the Networks function under the File menu. This may also be accomplished on an individual endpoint basis by making the appropriate entries on the Network tab of each device. The Assign IP Addresses function has three methods of use, selected using the Mode list box. The three methods are:

  - o **Assign New Address** . which uses the settings from the Network dialog to assign static IP address, subnet mask, default gateway and DNS server entries.

  - o **Set Devices to DHCP** . which will set the devices network interface to query the network for a DHCP server from which to get its address.

  - o **Synchronize Settings** . which will send the subnet mask, default gateway and DNS server entries to the Valcom device without changing the previously assigned IP address. This is used in cases where the mask, gateway or DNS entries were made incorrectly, causing the Valcom device to become unreachable.

- **Assign Device Names** . allows users to assign device names to all or selected endpoints. This may also be accomplished on an individual endpoint basis.

- **Assign Dial Codes** . allows users to assign dial codes to all or selected endpoints. This may also be accomplished on an individual endpoint basis. Note that all system dial codes must be the same length.

- **Set System Tones** . allows user to enable or disable the privacy, channel pre-announce, SIP pre-announce tones on a system wide basis.

- **Volume Adjustments** . allows users to adjust set the audio input and audio output volumes on all applicable endpoints.
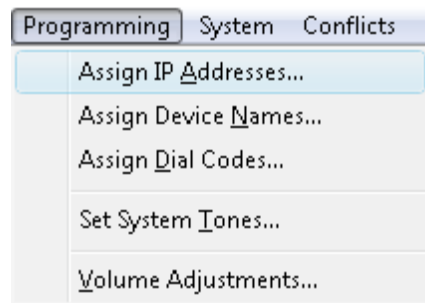
Programming Menu
Assign IP Addresses
Assign New Addresses

Static IP Address assignment may be made using the **Assign New Addresses** mode. The network from which the address will be assigned is selected using the **Subnet** drop-down list box. The subnets available in the list are the same subnets that were previously entered via the Networks function on the File menu. The **New** and **Edit** buttons may be used to create new subnets or edit existing ones, if necessary. The subnet mask, default gateway and DNS server entries from the selected subnet are displayed for reference.

After the appropriate subnet is selected, the address for the new device is chosen. The **Address** dropdown box provides the ability to select the address to assign, or let the tool choose. The **First Available** option will scan the list of addresses available in the chosen subnet and select the first address that has not already been assigned. If more than one Valcom device is selected to get an address, the IP addresses will be assigned in sequence starting with the First Available. Alternatively, the exact address desired can be selected from the **Address** drop-down box and assigned to individual Valcom devices.

To reduce the possibility of assigning an address already being used by another device, the **Use Ping to Check Address Availability** option may be selected. This will cause the tool to send an ICMP ping to the new IP address before assigning the address to the Valcom device. If a response to the ping is received, the IP Solutions Tool will not assign the address. If the addresses are being assigned using the **First Available** option, then the tool will try to assign the next available IP address. If a specific IP address was chosen to be assigned, then the tool will provide a warning message indicating the chosen address is not available.

Only the Valcom devices that are selected by checking the box in the **Mac Number** column will be assigned new addresses. The **All** or **None** buttons may be used to select all or deselect all devices, respectively.

After making the appropriate choices, click the **Assign** button to update the Valcom devices. A confirmation box will be displayed. Click the **Yes** button in the confirmation box to complete the address assignment.

After the IP addresses have been successfully delivered to the Valcom devices, the icon for the device will be displayed in Yellow, indicating a rescan of the device is required.

A scan of the device may be initiated using the Scan Single Device command from the Communications menu or by right-clicking the device name and choosing Scan Device from the pop-up menu. The newly-assigned IP address should appear in the IP Address field of the Summary tab.

Programming Menu
Assign IP Addresses
Set Devices to DHCP

If automatic address allocation using a Dynamic Host Configuration Protocol (DHCP) server is preferred, the **Set Devices to DHCP** mode may be selected. With this option, all of the devices selected for address assignment will be configured to query for an address using DHCP. A DHCP server with a valid scope for the network must be available.

Only the Valcom devices that are selected by checking the box in the **Mac Number** column will be assigned to use DHCP. The **All** or **None** buttons may be used to select all or deselect all devices, respectively.

After making the appropriate settings, click the **Assign** button to send the configuration change to the Valcom devices. A confirmation box will be displayed. Clicking the **Yes** button in the confirmation box will proceed with setting the selected devices to use DHCP.

After the DHCP configuration setting has been successfully delivered to the Valcom devices, the icons for the changed devices will be displayed in Yellow, indicating a rescan of the device is required.

A scan of the device may be initiated using the Scan Single Device command from the Communications menu or by right-clicking the device name and choosing Scan Device from the pop-up menu. The newly-assigned IP address should appear in the IP Address field of the Summary tab.

Programming Menu
Assign IP Addresses
Synchronize Settings

If incorrect values for the network subnet mask, default gateway or DNS server entries have been mistakenly assigned to Valcom devices, the VIP-102B IP Solutions Setup tool may be able to detect the device but not configure it. This will cause the VIP-102B IP Solutions Setup Tool to show the device in Error Status. The Summary tab for the device will display a note that the device has been detected, but the configuration of the device could not be retrieved. Choosing the **Synchronize Settings** mode will send the current values for the subnet mask, default gateway and DNS server entries to the Valcom device, but will not change the IP address currently assigned to the device.

The **Subnet** drop-down list box is used to choose the appropriate network from which to get the configuration settings. The values for the subnet mask, default gateway and DNS servers are shown in the upper right area of the dialog box. The subnets available are the same subnets that were previously entered via the Networks function on the File menu. The **New** and **Edit** buttons may be used to create new subnets or edit existing ones, if necessary. The **Subnet** selection also controls what devices are displayed in the device list. Only devices whose IP address matches the Subnet selection are displayed and can be synchronized.

Only the Valcom devices that are selected by checking the box in the **Mac Number** column will be updated with the changes. The **All** or **None** buttons may be used to select all or deselect all devices, respectively.

After making the appropriate settings, click the **Assign** button to send the configuration change to the Valcom devices. A confirmation box will be displayed. Clicking the **Yes** button in the confirmation box will proceed with sending the updates to the selected devices.

After the new configuration settings have been successfully delivered to the Valcom devices, the icons for the changed devices will be displayed in Yellow, indicating a rescan of the device is required.

A scan of the device may be initiated using the Scan Single Device command from the Communications menu or by right-clicking the device name and choosing Scan Device from the pop-up menu. The newly-assigned subnet mask, default gateway or DNS server addresses should appear in the appropriate fields of the Network tab.

Programming Menu

Assign Device Names

Device names can be assigned to one or more Valcom devices in one operation. This is useful for assigning names to multiple devices, where the names will follow a standard pattern. For example, multiple speakers could be named "Speaker 1, Speaker 2, Speaker 3, etc" automatically.

Individual devices can be renamed by entering the new name in the **Prefix** text field, selecting the device to be renamed by clicking the check box by the Mac Number of the device, then clicking the **Assign** button.

To assign multiple device names, the initial part of the name that will be the same for all devices is entered into the **Prefix** text field. The Prefix field is limited to 14 characters. The second part of the assigned name must be a number and is entered into the **Starting Number** field. The assigned names will combine the Prefix with this number, and progress sequentially. The maximum number is 4 digits (9999). The **Min Number Length** dropdown box is used to specify the length of the assigned number. The number assigned to a device will be padded with leading zeroes to equal the length chosen. The range is 1 to 4 digits length.

Only the Valcom devices that are selected by checking the box beside the Mac Number will be assigned new names. The checkboxes can be selected individually, or the **All** or **None** buttons can be used to select all of the checkboxes, or to clear boxes that have been selected.

After making the appropriate settings, click the **Assign** button to assign the names to the Valcom devices. The new names are stored in the VIP-102B IP Solutions tool, within the properties for each individual device. The changes can be confirmed by looking at the device names in the device tree view, or checking the Properties tab for an individual device. All of the changed devices should now be displayed in the tree view with the Blue icon, indicating "Update Required". This indicates the changed properties must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

Programming Menu

Assign Dial Codes

Dial codes are the internal addressing numbers assigned to every endpoint in the system. The dial code is also commonly known as the phone number, extension or directory number. All devices in the system must use the same number of digits for the dial code. Valcom IP devices can be programmed with 1 to 11 digit dial code lengths. The default dial code length for the system is set in the Dial Code Length function under the System menu.

The Assign Dial Codes dialog box provides a way to quickly assign sequential dial codes to one or more devices. Enter the beginning dial code number in the **First Dial Code** field. The number of digits entered must match the number of digits defined for the system in the Dial Code Length function under the System menu. Selecting the **Use Dial Code for CID Number** will cause the dial code assigned to a device to also be used for the Caller ID Number.

Only the Valcom devices that are selected by checking the box in the Device column will be assigned new addresses. The **All** or **None** buttons can be clicked to select all devices, or deselect all boxes with one mouse click. The **All Blank** button can be clicked to select all devices that have a blank dial code. (May have been cleared from resolving previous dial code conflicts.)

You can select from 3 different methods to assign dial codes. **First available** will use the first unused dial code that is unavailable and assign it to each selected item. **Sequential** will assign dial codes sequentially to each selected item, even if it may cause conflicts. **Extended** will remove dial codes from selected items to free up their numbers. The first unused dial code that is available will then be assigned to each item.

After making the appropriate settings, click the **Assign** button to apply the dial codes to the device configuration. The tool will assign the number from the First Dial Code box to the first selected device, then continue through the list of selected devices assigning the next dial code number in sequence. After all assignments are made, a dialog box showing the assignments will be displayed. Click the **Continue** button. If dial codes being assigned are already in use on other devices, the tool will display a dialog box showing the conflicts. The tool will not prevent conflicting dial codes from being assigned. Conflicts should be noted and resolved before continuing with programming.

Clicking the **Close** button (before clicking Assign) will exit this function without making changes to the dial codes.

The new dial codes are stored in the VIP-102B IP Solutions tool, within the properties for each individual device. The changes can be confirmed by reviewing the Channels tab for an individual device. All of the changed devices should now be displayed in the tree view with the Blue icon, indicating %Update Required+. This indicates the changed properties must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

Assign Dial Codes

Assignment Settings

First Dial Code: [_____]

Method: [First Available ▼]   First Available : The first unused dial code that is available will be
assigned to each selected item.

☐ Use Code for CID Number

Device	Channel	Caller ID Name	Dial Code
☐ 00-D0-5F-00-A1-25	1		801
☐ 00-D0-5F-01-2E-50	1		380
☐ 00-D0-5F-01-AA-A8	1		801
☐ 00-D0-5F-01-AB-FF	1		801
☐ 00-D0-5F-01-B6-0F	1		801
☐ 00-D0-5F-01-B9-92	1		801
☐ Application Server PRO	1		8000
☐ Application Server Pro	1		658
☐ Application Server Pro	1		800
☐ Application Server PRO	1		800
☐ AppSrv-6001_2_6011-4...	1		881
☐ Eng Conf Rm Spkr	1		824
☐ Eric's Speaker	1		674
☐ Gen2 vip814-69:33	1	smvPhone 5	6675
☐ Gen2 vip814-69:33	2	smvPhone 6	6676
☐ Gen2 vip814-69:33	3	smvPhone 7	6677
☐ Gen2 vip814-69:33	4	smvPhone 8	6678

[All] [None] [All Blank]   [Assign] [Close]

Programming
Assign Local Network Settings

Local network settings for all scanned devices can be set here for all or selected devices.

These are the same settings that can be set using the **Local Network** button on the **Network** tab of any individual device from the device tree.

The audio IP Multicast address and port as well as the Control IP Multicast address can be set here.

In addition you can configure the **DSCP** (Differentiate Services Code Point) setting for all or individual devices which will tag packets for QoS (quality of Service) policies on your network. Valcom recommends using **EF** (Expedited Forwarding on all Valcom devices). Click **Assign** when complete. You will be prompted for confirmation to continue. Click **Yes** to assign your settings or No to discard the changes. After assigning you can close this window. You will need to Update Changed Devices in order to have these changes saved to the Valcom device(s).

Programming
Clear DNS Settings

By default this will present a list of all devices that are in red error status.

You may select All or individual devices from the list. You can also select **Show Loaded** which will display all scanned devices regardless of whether it is red error status or normal status. Checking the **Use extended clear on first attempt** causes the tool to download the appropriated configuration file, clear out the DNS fields and update the device(s) followed by a reboot of the device(s). This will take longer than the default which sends a command to the devices(s) and clears the DNS fields directly. Clicking **Clear** button will prompt for confirmation. Selecting **Yes** will proceed with default or **extended clear** to clear the DNS fields and then reboot the device(s). Selecting **No** will discard changes. Each device will report successful or failed. If failed and Extended Clear is not check, you can try again with it check to see if will be successful. Click **Close** exits out of this window.
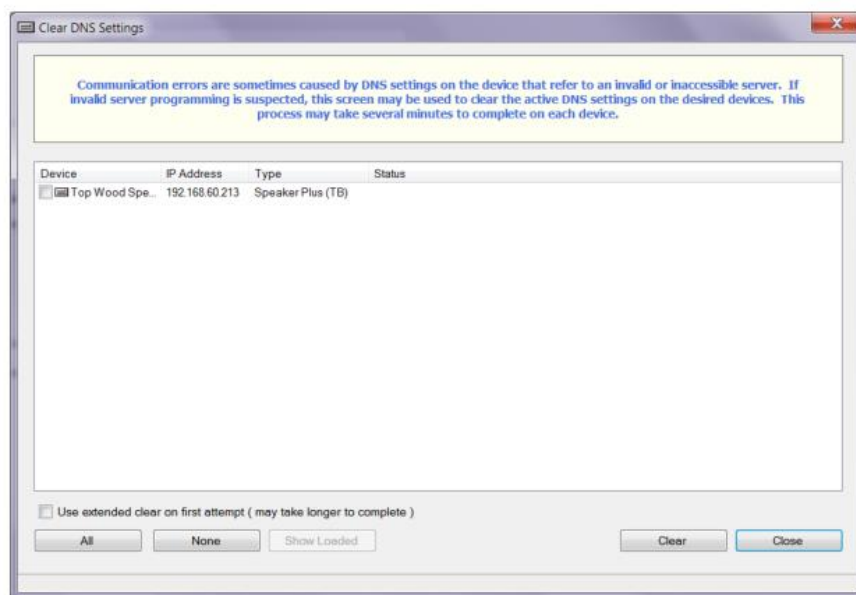
Programming
Set Channel Mode

This menu item is only applicable to device type of dual-mode speakers. These speakers can be set as talkback or as one-way. From the list of devices you can choose to filter out by either type and switch them from one mode to the other. Once done you will need to do an Update Changed Devices to send configuration changes to the device(s).
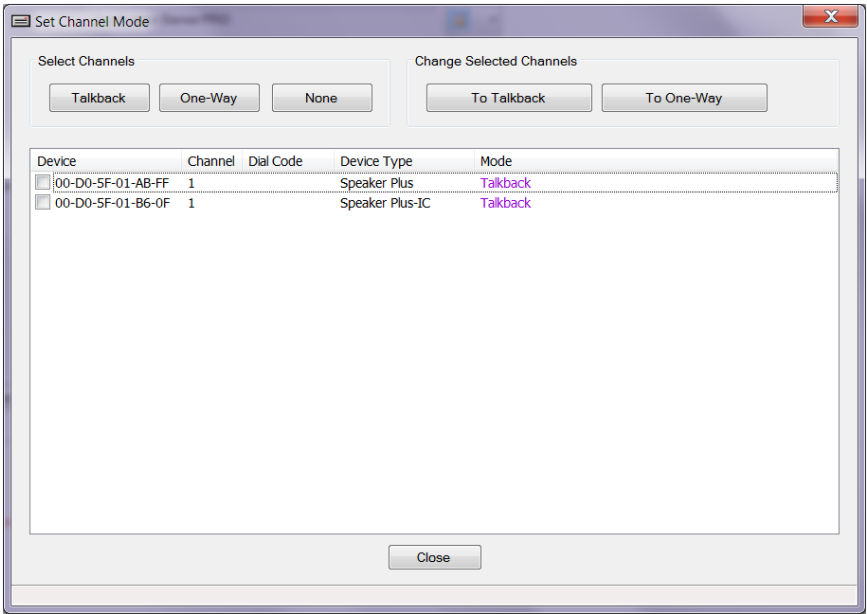
Programming Menu
Set System Features

The Set System Features dialog box provides a method to set the system tones for all applicable devices with one procedure. System tones are predefined audio tones that are output by the paging system for specific events.

Depending on the device being programmed, up to three tones may be enabled or disabled.

The **Privacy Tone** is a periodic tone that is played through a talkback speaker when the speaker is active. This tone provides an indication that the audio path is open from that device, and therefore any sounds could be picked up and transmitted to another station.

Pre-announce tones are used to alert listeners that a page is about to start.

The **Channel Pre-Announce Tone** is a tone that is sent to a device immediately before the audio stream when the devices are communicating using the proprietary Valcom network protocol.

The **SIP Pre-Announce Tone** is a tone that is sent to a device immediately before the audio stream when the devices are communicating using the SIP protocol.

The **Ringback Alert Tone** is a tone played on a talkback speaker to indicate a call has been initiated from the speaker.

The **Incomplete Call Message** is an audio recording that is played by a talkback speaker when a call initiated from the speaker cannot be completed to the programmed destination number. Customer-supplied audio files may be uploaded to the device for this message using the Upload Device Files option on the Communications menu.

The **Aux Input Enable** if checked activates the Aux line-level input of an applicable device for use with an audio source such as background music. This audio source will be shunt if the device receives audio from standard source.

The **Generic Multicast** if checked will instruct the device upon boot to load the features that support generic multicast.

The **SIP Communications** if checked will instruct the devices to load the SIP functionality of an applicable SIP device. If SIP is not being used this may can be unchecked.

Select the feature to be enabled or disabled by clicking the check box beside the feature.

After making the appropriate choices, click the **Enable Selected Features** button to apply the settings to all applicable devices, or click the **Disable Selected Features** button to disable the selected tones. The new feature settings are stored in the VIP-102B IP Solutions tool, within the properties for each individual device. The changes can be confirmed by reviewing the Properties, Channels or SIP tab for an individual device. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

Set System Features

Select the features to be set in all applicable devices

- ☑ Privacy Tone
- ☑ Channel Pre-Announce Tone (Call)
- ☑ Ringback Alert Tone
- ☑ Incomplete Call Message
- ☑ Aux Input Enabled
- ☑ Generic Multicast
- ☑ SIP Communications

[Enable Selected Features]   [Disable Selected Features]   [Close]
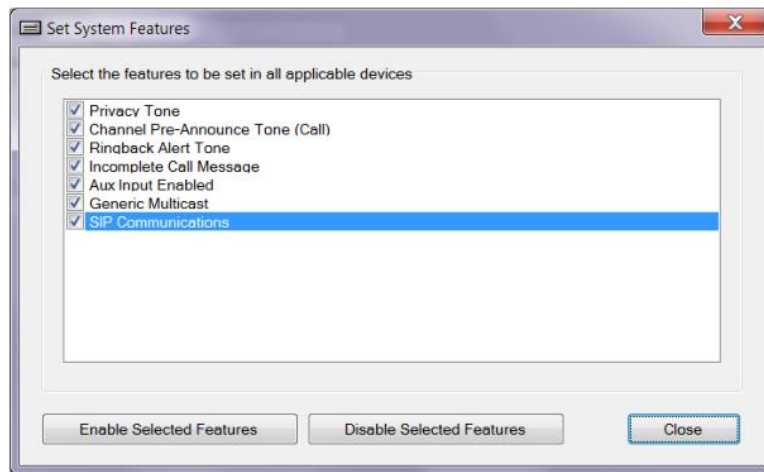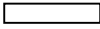
Programming Menu

Volume Adjustments

The Volume Adjustments dialog box provides a way to set the Audio Input Volume and Audio Output Volume levels for all Valcom IP devices that have audio input and/or output functions. The volume settings are adjusted using either the slider controls or the incremental (+/-) buttons. The allowable values range from -48 to +28, and are measured in decibels. Valcom devices with firmware versions 2.15 or greater have the ability to perform volume adjustments in real time, with the adjusted volumes being used by the device immediately. Devices with older firmware must be updated and rebooted for the new volume settings to be effective.

The **Status Legend** section provides information on the state of the volume adjustments. The **Status** column of the device listing will indicate (by color code) the progress of the adjustment for each channel of each device. The Status indicators are as follows:

☐ "Unchanged". A blank Status indicates the volume settings have not been changed on the channel.

▬ "Working". A blue Status indicates the changes are being applied to the channel.

▬ "Adjustments Pending". An orange Status indicates changes are pending. This status will normally occur on channels of devices with firmware versions that do not support real-time adjustments. For those devices, the changes are stored in memory, but not yet in the VIP-102B IP Solutions Setup Tool database.

▬ "Adjustments Active". A yellow Status indicates changes are active on the device. This status will occur only on channels of devices with firmware versions that support real-time adjustments. This status indicates the volume adjustments have been changed on the channel and are active, but not yet permanent. The Commit Changes button must be pressed to have these changes written to the device's startup configuration.

▬ "Finalization Pending". A purple Status indicates changes have been stored in the database of the VIP-102B IP Solutions Setup tool, but not yet uploaded to the device. This status will occur on channels of devices that do not support real-time adjustments, or when the adjustments could not be finalized in real time. When the Volume Adjustments window is closed, these devices will be displayed in the Device Tree View of the main VIP-102B application with a blue icon, indicating Update Required. The update and reboot process will need to occur to make the volume adjustments permanent.

▬ "Finalization Complete". A green Status indicates the changes are completed. This status will occur for all firmware versions when the volume adjustments have been completed. For firmware versions that support real-time changes, this status will normally occur after the Commit Changes button is pressed. For firmware versions that do not support real-time changes, this status will normally occur after the Commit Changes button is pressed <u>and</u> the device has been updated from the main VIP-102B window.

The **Adjustment Modes** options provide the choice of modifying either a **Single Channel** or **Multiple Channels**. Single Channel allows one channel to be selected from the device listing for adjustment. Multiple Channels allows one or more channels to be selected, with the volume adjustments applied to all channels at one time.

The slider controls in the **Absolute Adjustments** section will set the volume of either the Input or Output (or both) to the absolute value shown by the number displayed to the right of the slider control. The settings will be immediately reflected in the device listing for any channels selected. Alternatively, the absolute volume settings may be set using the slider controls before selecting any channels. Then, select the appropriate channels and use the "apply" icon 🔳 to push the new settings to the channels.

The **Incremental Adjustments** section provides the ability to adjust the Input and/or Output volume settings by adding or subtracting from their current settings. The **Volume** dropdown box options include **Input**, **Output** or **Both**. The **Increment** dropdown box sets the incremental amount of adjustment, in the range of 1 to 5. After making the appropriate choices for Volume and Increment, select the Valcom device channels to which the settings should be applied. Then click the "-" or "+" button to adjust the settings on each selected channel. The Increment value will be subtracted or added to the current volume settings on the channel each time the buttons are clicked.

The Device List shows all of the devices in the current scan results with volume settings that can be adjusted. The first column displays the check box which selects the channel to be adjusted. One or more channels may be selected, depending on the Adjustment Modes selection (Single or Multiple). This column can also include this icon 🔊 to indicate the device can perform real-time volume adjustments. If the icon is not displayed, the device firmware does not support real-time changes or the device requires Verification. The Status column (discussed previously) shows the status of any changes that have been attempted. The Device, Channel, Dial Code and Description columns are provided to identify the devices being changed. The Input Volume and Output Volume columns initially display the volume settings in effect when the devices were last scanned (or finalized, if they were previously adjusted). The background color of these entries will change to a light gray if the settings have been modified but not yet finalized.

When selecting the channels to be modified, the **All** or **None** buttons may be used to select, or deselect, all of the device channels, respectively.
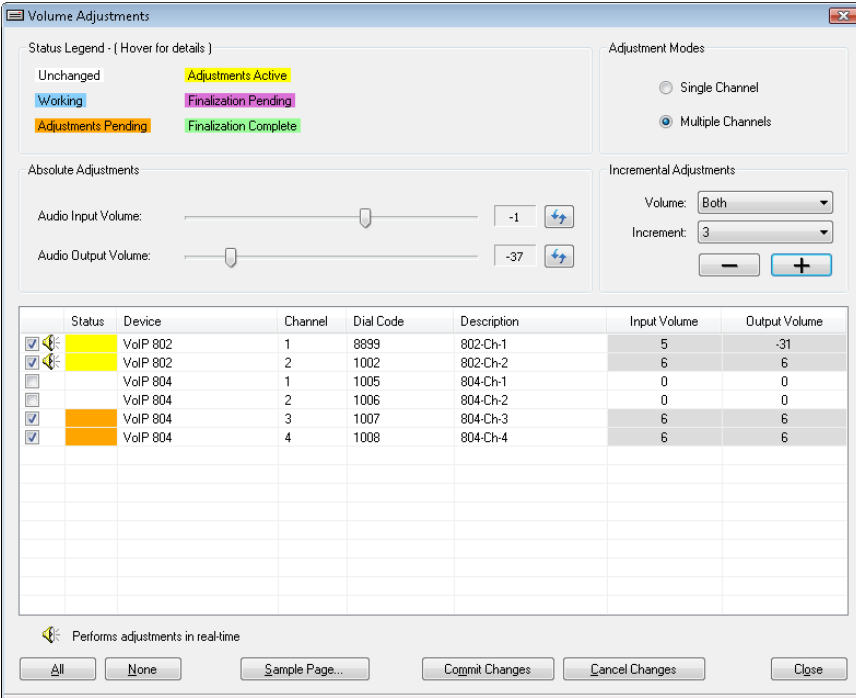
The **Sample Page** button will invoke the Sample Page function to send a pre-recorded sound file to the devices. See the description of the Sample Page function in the Communications Menu section of this manual.

When invoked from the Volume Adjustments window, the Sample Page function will include an additional Group option named "AUTO – Real-Time Grouping". This group works in conjunction with the real-time volume adjustments by allowing Valcom IP endpoints to be dynamically added and/or removed from the group receiving the sample page. Only devices that support real-time adjustments can utilize this feature. To use this, start a sample page using the AUTO group, then click the checkbox in the Volume Adjustments device list for each channel that should receive the sample page audio. Device channels can be added to, or removed from, the sample page output simply by checking or unchecking the box for the channel.

After making the appropriate settings, click the **Commit Changes** button to assign the volume settings to the Valcom devices. Devices supporting real-time adjustments will be updated immediately. The changes for devices that do not support real-time updates will be stored in the VIP-102B database, and will require an Update to make the changes permanent. Changes may not be cancelled after Commit Changes has been applied.

Clicking the **Cancel Changes** button will revert the volume settings to the values retrieved when the device(s) were last scanned (or finalized, if they were previously adjusted). Changes can only be cancelled for devices in the Adjustments Pending (orange) or Active (yellow) Status.

The **Close** button will close the Volume Adjustments window. If changes have been made but not committed, a

warning dialog box will be displayed. The warning includes the option to commit changes before closing.
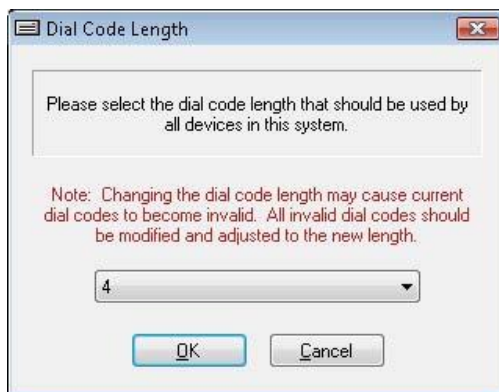
System Menu

- **Dial Code Length** . defines the number of digits that will be used within the system for communications using built-in Valcom protocol (non-SIP). The dial code is a unique number assigned to the Valcom device and is analogous to a phone number or directory number. All devices communicating within a system must use the same length dial code.

- **Network Settings** . defines the ports and multicast addresses used by the system. These settings should only be changed if there are specific network conflicts requiring the settings to be modified.

- **Volume Offsets** . allows users to make adjustments to system audio volumes for low, medium, high, emergency and absolute page priorities.

- **Phone Book** . is a list of all dial codes and the corresponding endpoints IP address and channel. This is automatically compiled by the VIP-102B and stored in each endpoint during an update. During certain conditions, such as endpoints being removed from the system and IP addresses being reassigned, the phone book may require a user initiated delete and rebuild.

- **Audio Groups** . allows users to define audio groups and their priorities in the system.

- **Audio Group Membership** . allows users to determine which channels will be included in the defined audio groups.

- **CID Ringing** . allows users to define ranges of caller ID reported telephone numbers that will automatically be routed to a channel or group dial code. This only applies to calls ringing into trunk endpoints.

- **Code Translation** . allows users to translate from one dial code to another. For example, if 6 digit dial code lengths are specified, but the user would like to use "700" for all call, "700" could be translated to the 6 digit all call dial code. Note that number pattern conflicts are not allowed. For example, if 700 was utilized for all call, no 6 digit system dial code could begin with 700.

- **Control Groups** . allow users to combine relays from I/O Units into groups so that they may be controlled simultaneously.

System Menu
Dial Code Length

The **Dial Code Length** is the number of digits used by the system to identify an endpoint. The dial code length minimum is 1 digit and the maximum is 11 digits. The dial code length determines the minimum number of digits that must be dialed to enable paging output at an endpoint. It also controls the maximum number of device endpoints that may be defined in the system. For example, a 1-digit dial code length allows 10 possible endpoints, numbered 0 through 9. A 2-digit length allows 100 endpoints, numbered 0 through 99.

The dial code length does not apply to SIP-based communication. See also "Code Translation" later in this section for information on digit substitution

System Menu
  System Network Settings

System Network Settings defines the ports and multicast addresses used by the system. Valcom devices require several unique addresses and ports for communication. The addresses and ports may be changed if there are conflicts with other network services. If changes are made to the addresses and ports, then the same changes will need to be entered in the Networks dialog box under the File menu. Otherwise, the VIP-102B tool will not be able to communicate with the updated devices.

Changes made to these settings are updated to all of the devices being managed in the device tree view. Devices that are being %ignored+will not be updated.

Clicking the **Defaults** button will fill in the dialog box fields with the factory default values for ports and addresses.

The new network settings are stored in the VIP-102B IP Solutions tool. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

System Menu
Volume Offsets

The Volume Offsets dialog box sets the relative volume values for the five priority levels available in the system. The priority levels are **10, 20, 30, 40** and **50**. Every Audio Group in the system has one of these volume offsets associated with it. When a group page is made, the volume level is determined from the volume offset for the priority of the group. See the section on Audio Groups for more information.

The volume offsets are measured in decibels and range from -12 to +12, and are adjusted using the slider control for each priority. After making changes, click the OK button to save the settings. Clicking **Cancel** will leave the settings unchanged. The **Defaults** button will adjust the slider controls to the factory default position. The arrow button in the lower right corner will revert the slider controls to the position they were set to when this dialog box was opened.

The new volume offset settings are stored in the VIP-102B IP Solutions tool. All of the devices should now be displayed in the device tree view with the Blue icon, indicating "Update Required". This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

Volume Offsets for Audio Priorities		
Priority 10 Offset:		0
Priority 20 Offset:		0
Priority 30 Offset:		0
Priority 40 Offset:		+6
Priority 50 Offset:		+6

OK   Cancel   Defaults
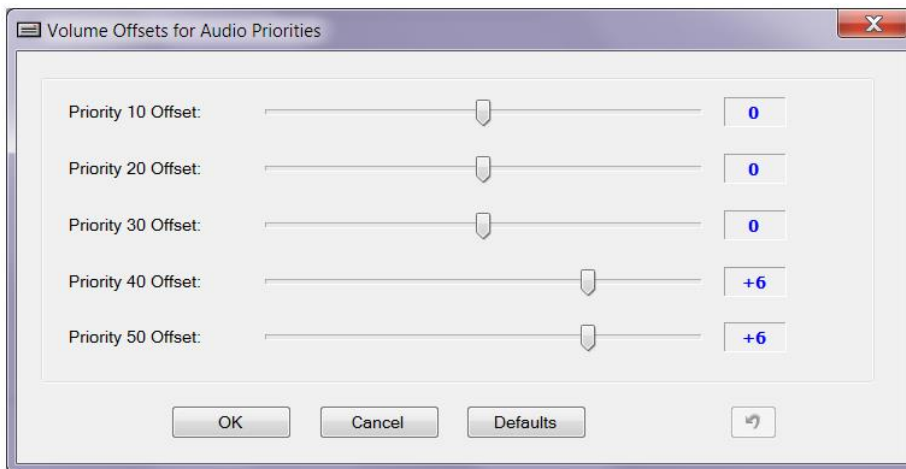
System Menu

Phone Book

The Phone Book dialog box shows all of the defined dial codes in the system for Valcom devices that have statically assigned IP addresses. Channels for devices that use DHCP for addressing are not included. Typically, the phone book is generated automatically by the VIP-102B IP Solutions Tool and delivered to each Valcom device when the device is updated. In general use, the phone book will not need to be manually updated.

Phone Book entries do not apply to SIP-based communications.

New phone book entries may be created by filling in the **Dial Code, IP Address, Channel** and **Device Type** fields and clicking the **Add** button.

The **Update** button is used to modify an existing entry. Click the phone book entry to be modified in the list, then change the appropriate item (Dial Code, Channel, etc). Once the changes are made in the fields, click the Update button to make the change in the list.

The **Delete** button will remove a single entry from the list and **Delete All** will remove all phone book entries.

The **Rebuild** button will cause the VIP-102B tool to read through the list of devices currently detected and rebuild the entire list. All existing Phone Book entries will be removed before the list is rebuilt.

The new phone book entries are stored in the VIP-102B IP Solutions tool. All of the devices should now be displayed in the device tree view with the Blue icon, indicating "Update Required". This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

System Menu

Audio Groups

The Audio Groups dialog box is where groupings of devices are created. Each group is assigned a unique dial code, allowing multiple devices to be communicated with through a single phone number. Each group is also assigned one of five priority levels. Pages made to a higher priority group will override a page made to a lower priority group. The priority can also be assigned a Volume Offset (described previously in this section) to adjust volume levels by group membership. The Audio Groups defined here are used for non-SIP communication using the Valcom protocol, except for the VIP-201 and VIP-204, which use these groups for both SIP and non-SIP communications.

The Audio Group Membership dialog box (described later in this section) is used to add and remove the devices that are members of the Audio Groups.

To create a new Audio Group, fill in the **Dial Code** text box with a unique number. The number of digits must equal the system's Dial Code Length. A priority level for this group may be chosen from the **Priority** dropdown list box. The levels, in order of actual priority, are 0 through 99. In the **Group Name** field, type an optional description of the group (30 characters maximum). The optional **Alternate Multicast Address** and **Port** fields may be used if desired. If used, this group will "listen" for generic multicast audio on this address and port. If left blank, the device defined multicast settings will be used (defined in Local Network Settings for each device).

When the entries have been made, click the **Add** button to create the group. It should now be displayed in the list.

The **Update** button may be used to modify an existing group. Click an existing group in the list. The properties of the chosen group will be copied to the text boxes, where the appropriate field(s) may be changed. Then click the Update button to submit the changes. The new information will now be displayed for the chosen group in the list.

The **Delete** button will remove a single entry from the list and **Delete All** will remove all group entries.

The new Audio Groups are stored in the VIP-102B IP Solutions tool. All of the devices should now be displayed in the device tree view with the Blue icon, indicating "Update Required". This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.
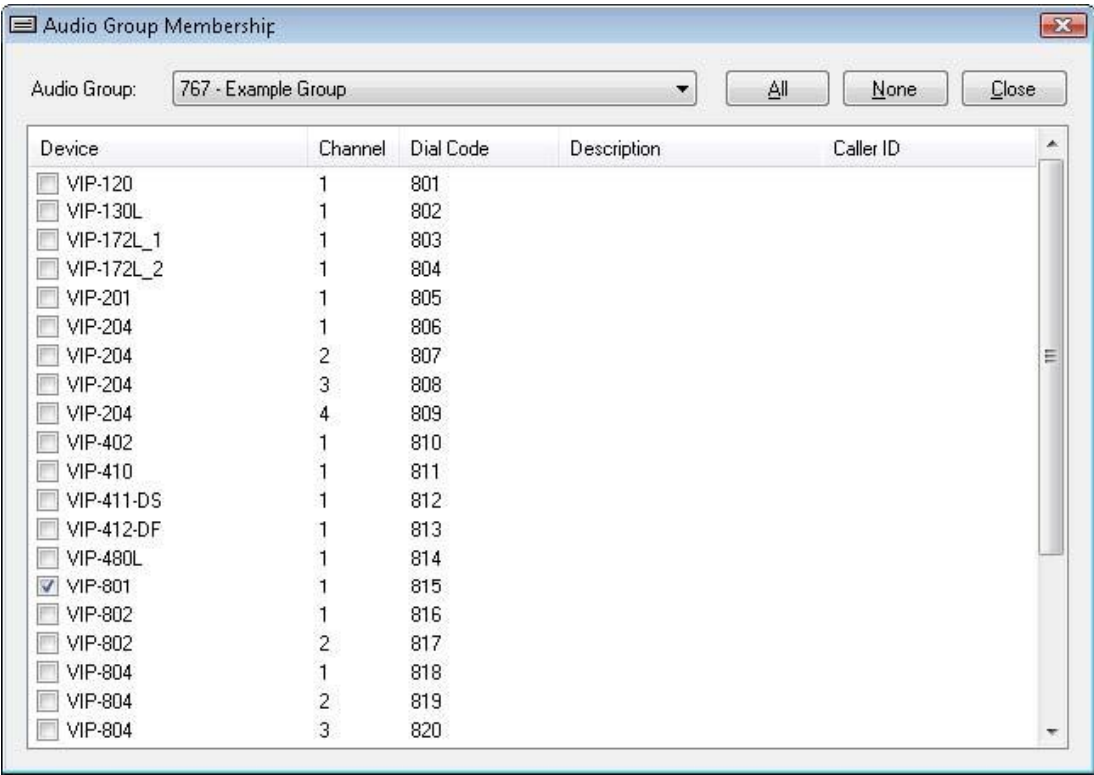
System Menu

Audio Group Membership

The Audio Group Membership dialog box is used to populate Audio Groups with the specific devices that should be members of the group. All members of a group will receive communication simultaneously when the group's dial code is accessed. Group membership is flexible, allowing a single device to be a member of multiple groups. Groups to which members are added must have been previously created using the Audio Groups function described previously.

To modify group membership, select the existing group from the **Audio Group** dropdown list. Any members currently in the group will be displayed with a "checked" checkbox beside the device name in the device list. Members can be added to the group by clicking the checkbox beside the device name, and members can be removed from the group by clearing the checkbox. Clicking the **All** button will select the checkbox for all of the devices in the list; clicking the **None** button will clear the checkbox for all of the devices in the list. Note that devices will be listed multiple times if the device has multiple channels. Each channel on a device may be in multiple different groups and care should be taken to select the correct channel when adding a device to a group.

When all of the group membership changes have been completed, click the **Close** button to exit this function.

The updated Audio Groups are stored in the VIP-102B IP Solutions tool. All of the devices should now be displayed in the device tree view with the Blue icon, indicating "Update Required". This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

System Menu

CID Ringing

The CID Ringing dialog box is used to define ranges of numbers that will automatically be routed to a specific dial code in the system. This only applies to endpoints, such as the VIP-821, that can answer an inbound call.   The inbound call must supply caller ID digits, which are compared to the entries in the CID Ringing list. If the caller ID matches an entry in the list, the call will be automatically connected to the Destination dial code specified for the entry.

To create an entry, type in the inbound Caller ID range to monitor in the **From Min** and **From Max** text boxes. The entry should be in the standard telephone number format of XXX-XXX-XXXX. In the **Destination** field, enter the dial code number to which any numbers within the Min and Max range should be forwarded. Click the **Add** button to put the entry in the list.

The **Update** button may be used to modify an existing entry. Click an existing entry in the list. The properties of the chosen entry will be copied to the text boxes, where the appropriate field(s) may be changed. Then click the Update button to submit the changes. The new information will now be displayed for the chosen entry in the list.

The **Delete** button will remove a single entry from the list and **Delete All** will remove all entries.

The updated CID Ringing list is stored in the VIP-102B IP Solutions tool. All of the devices should now be displayed in the device tree view with the Blue icon, indicating %Update Required+. This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

System Menu

Code Translation

The Code Translation dialog box provides a way to create a list of dial codes that are translated to other dial codes. This could also be described as creating an alias or shortcut to a "real" dial code. A typical application for this capability is to create a short dial code as a shortcut to a longer dial code. In the example shown below, the dial code "6" will be translated to "830". Any calls made to dial code 6 will be translated to 830, then processed by the system. The length of the dial code that will point to the real destination must be less than or equal to the system dial code length. Any dial code that is used as an alias cannot be used as a dial code for any other function. Furthermore, a dial code used in this function can restrict the numbers that can be used for additional dial codes. In the example shown below, dial code 25 will be translated to the actual dial code 841. Dial codes 251, 252, 253 through 259 cannot be used elsewhere in the system.

To create a Code Translation, enter the alias to be defined in the **Dial Code** field, enter the actual dial code in the **Destination** field, then click the **Add** button. The new translation will be added to the list.

The **Update** button may be used to modify an existing entry. Click an existing entry in the list. The properties of the chosen entry will be copied to the text boxes, where the Dial Code or Destination may be changed. Then click the Update button to submit the changes. The new information will now be displayed for the chosen entry in the list.

The **Delete** button will remove a single entry from the list and **Delete All** will remove all entries.

The updated Code Translation list is stored in the VIP-102B IP Solutions tool. All of the devices should now be displayed in the device tree view with the Blue icon, indicating "Update Required". This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.

Code Translation does not apply to SIP-based communication.

System Menu

Control Groups (VIP-848)

Control Groups are used with the VIP-848 to map (associate) a single dial code to one or more relays which may reside on one or more VIP-848 relay devices. Each VIP-848 has 8 relays and 8 switches that can be programmed for network control. Each relay's default position (the position each is in when the VIP848 unit is powered-on), either open or closed, can be programmed into each VIP-848 device. Each relay can be changed from its default position by associating the relay with a switch activation, either open or closed, with that switch being located on either the same VIP-848 or a different VIP-848 on the network. Multiple relays may be controlled by one switch by grouping the relays into Control Groups. A maximum of 80 relays may be included in a single group.

To define a Control Group, click the **Add** button. A new dialog box will be displayed to create the group and define which relays are to be included in the group. (see next section)

To edit an existing group, click on the group in the list and then click **Edit**. A new dialog box will be displayed with the existing group membership displayed. Modifications can be made and saved to the group.

The **Delete** button will remove a single entry from the list and **Delete All** will remove all entries.

The updated Control Group definitions are stored in the VIP-102B IP Solutions tool. All of the devices should now be displayed in the device tree view with the Blue icon, indicating "Update Required". This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.
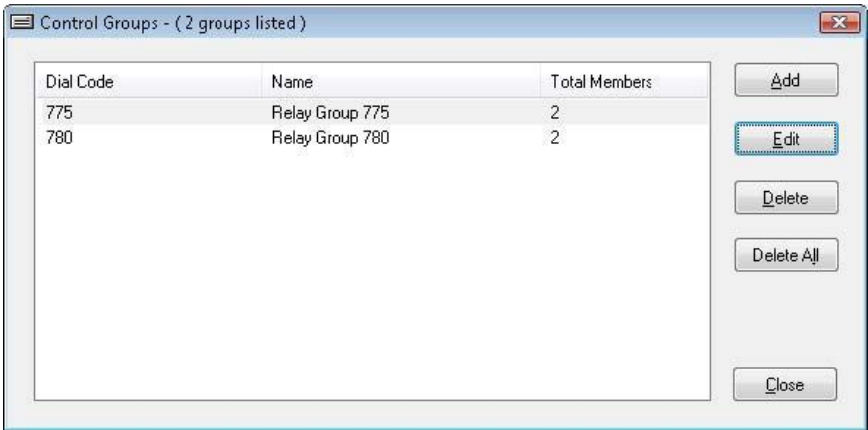
The dialog box shown next is displayed when the Add or Edit buttons are clicked on the main Control Group screen. To create a new Control Group, enter the dial code to be assigned to this group in the **Dial Code** field and a description in the **Name** field. The relays for all VIP-848 devices available in the system are displayed using a "Dial Code . Item" format, where the Dial Code is the dial code assigned to the VIP-848 and the Item is the number of the relay on that VIP-848. For example, "Code 836 . Relay 3" refers to the third relay on the VIP-848 that has "836" as its assigned dial code.

The list box at the bottom of the screen displays the defined relays that are available to be added to the group. Click on the desired Relay from the **Non-Members** (lower) list, then click the **Up Arrow** icon on the left of the list to move the selection to the **Members** (upper) list. To remove a Relay from the group, click the desired item in the Members list, then click the **Down Arrow** icon on the left of the Members list to move the selection to the Non-Members list.
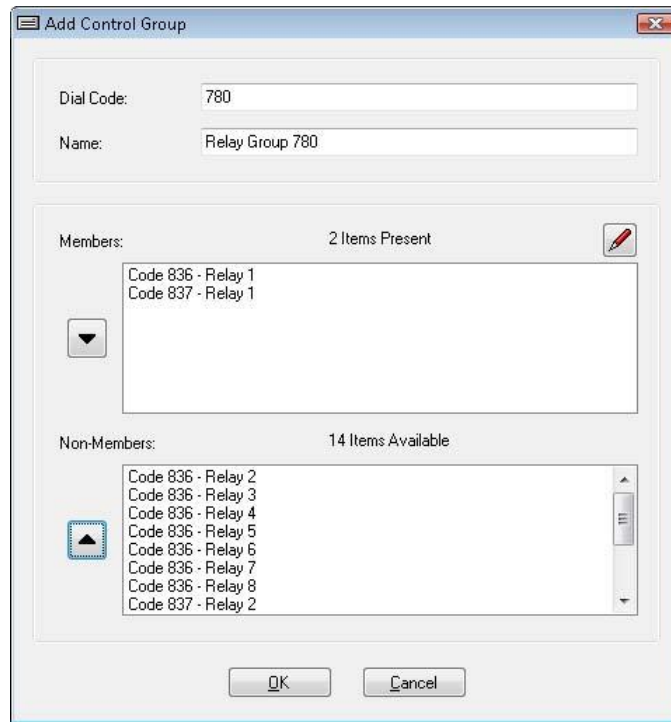
Once all desired changes have been made, click the **OK** button to close the dialog and return to the Control Groups window.

The dialog box below is displayed when the Pencil icon above the Members list is clicked. This dialog box allows a relay to be defined in the %Dial Code . Item+format for use in a Control Group. This would be used when a relay needs to be defined and programmed into a group before the actual VIP-848 device is installed on the network.
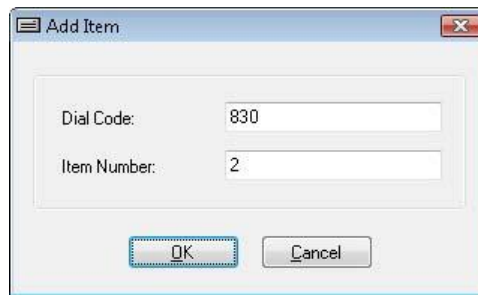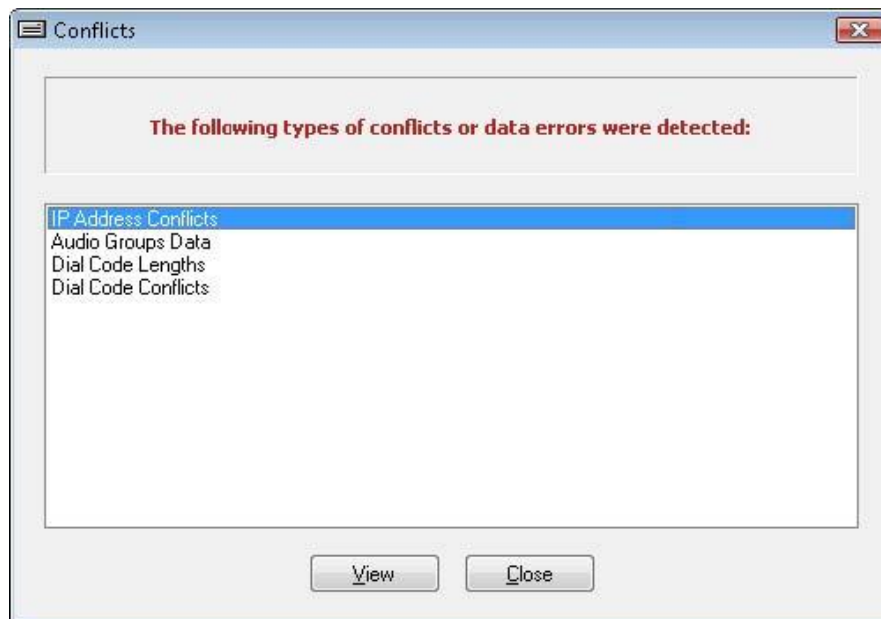
Conflicts Menu

The Conflicts Menu provides information on system conflicts that could impact proper operation. The VIP-102B IP Solutions Setup Tool checks system data to determine if conflicts exist, and provides prompts to correct the errors. If conflicts are detected following a system scan the VIP-102B informs users via a list showing the categories that have conflicts.
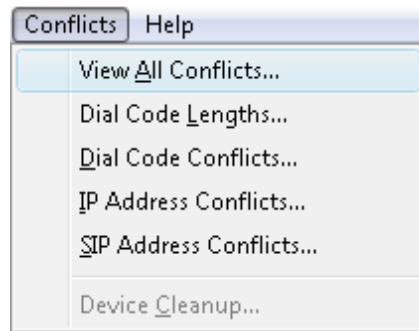
Conflicts are always reported following an initial system scan due to the fact that all endpoints default to the same IP address and all channels default to the same dial code.

The **View All Conflicts** function displays a dialog box listing the types of conflicts (if any) that are in the system. If this list is empty, then no conflicts currently exist.

Details of the conflicts that are shown may be viewed directly by clicking the conflict type, then clicking the **View** button. The appropriate dialog box will open with specific information about the conflict.

Conflicts Menu

Dial Code Lengths

The Dial Code Lengths conflict listing displays all of the configured dial codes that do not have the same number of digits as specified in the system-wide Dial Code Length setting by category (different areas where a dial code is used) . The main system dial code length is set in the System pulldown menu, using the Dial Code Length function.

For any devices that have a Dial Code of incorrect length, the list provides the dial code and where the data was found. On the left the list of categories are places that use dial codes. You can select all or individual items flagged with a red X. Click **Clear** button to blank out the dial code and remove the conflicts.

In a typical system, the dial code length will be the same for all devices and the conflicts noted in this list would be resolved by reprogramming the devices in the list. However, some advanced implementations may require devices on the same network to have different length dial codes. The conflicts reported in this list should be reviewed carefully. Conflicts that are not appropriate for the system should be resolved.
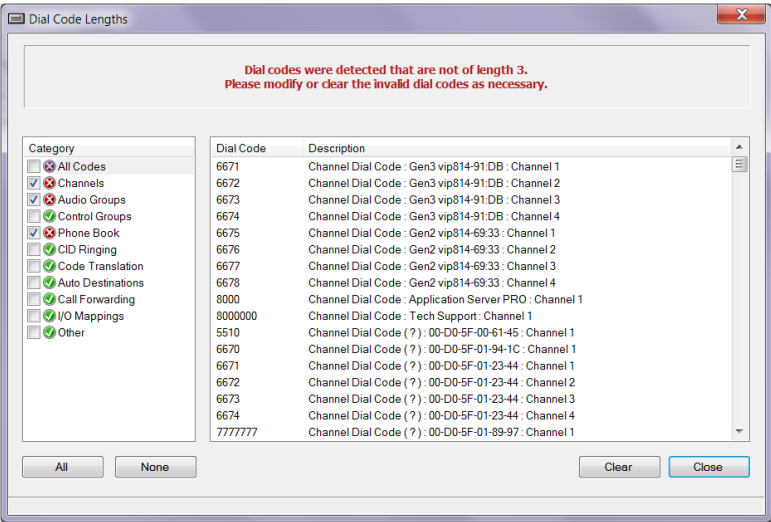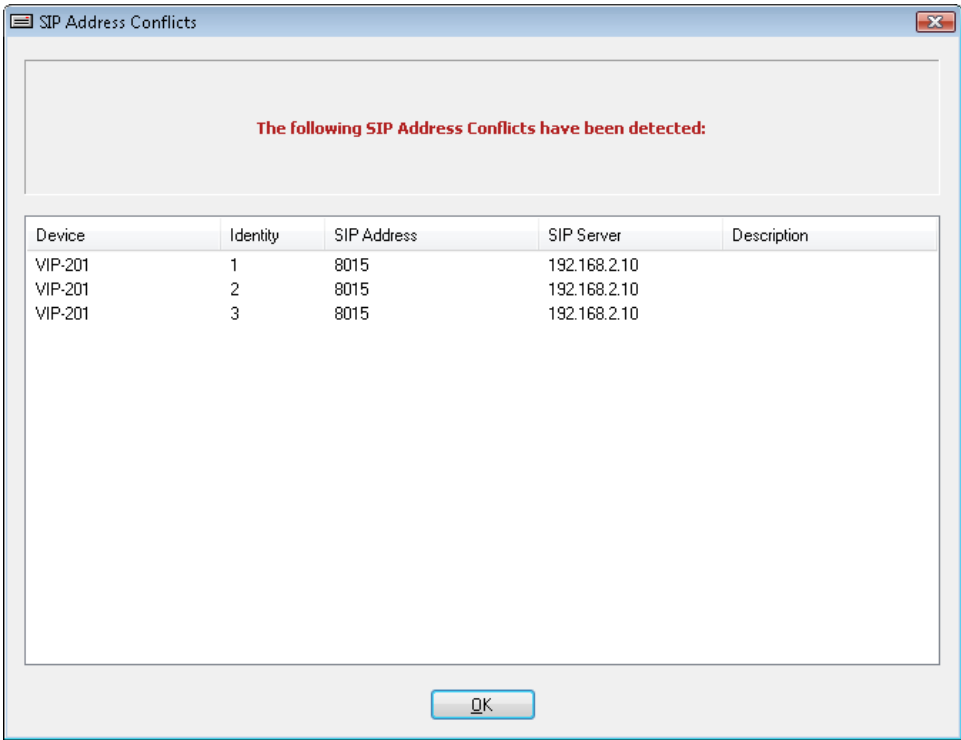
Conflicts Menu

Dial Code Conflicts

The Dial Code Conflicts listing displays all of the dial codes that are configured on more than one device. Dial codes are unique identifiers and cannot be assigned to more than one device at any one time.

For any devices that have a conflict, the list provides the conflicting dial code and where the data was found. It will list the conflicts for each category selected on the left. You can choose to select by category or by Dial codes to check the ones you want to clear. Click **Clear** button to clear selected items.

All dial code conflicts must be resolved for the system to function correctly.
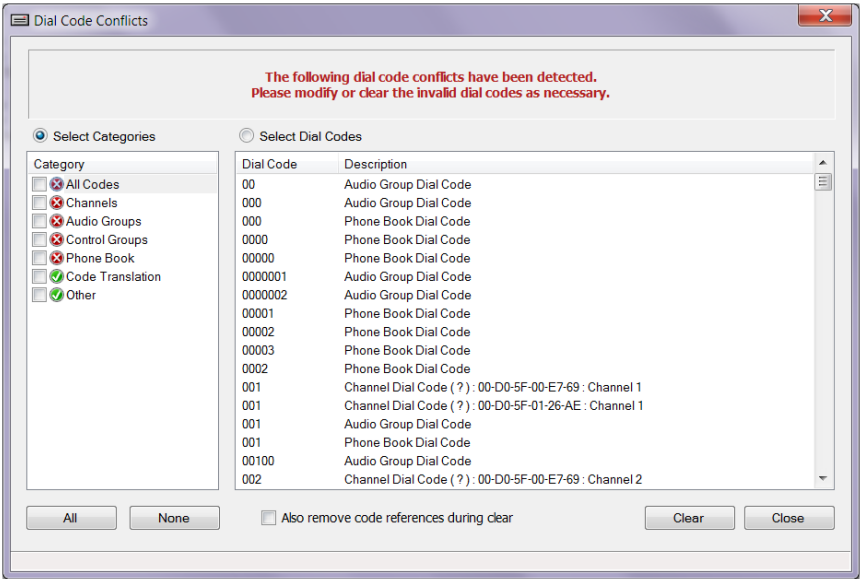
Conflicts Menu

IP Address Conflicts

The IP Address Conflicts listing displays devices for which the same IP address has been assigned. IP addresses must be unique for each device on the same network.

In general use, the VIP-102B tool will detect an attempt to assign a duplicate address, and will prevent the duplicate from being stored. However, the duplicate assignment could occur if one IP device was offline or otherwise unreachable and had its address assigned to a different device.

For any devices that have a conflict, the list provides the conflicting address and the device name where the data was found. In the example shown below, IP Address 192.168.96.240 is assigned to two devices.

All IP address conflicts must be resolved for the system to function correctly.
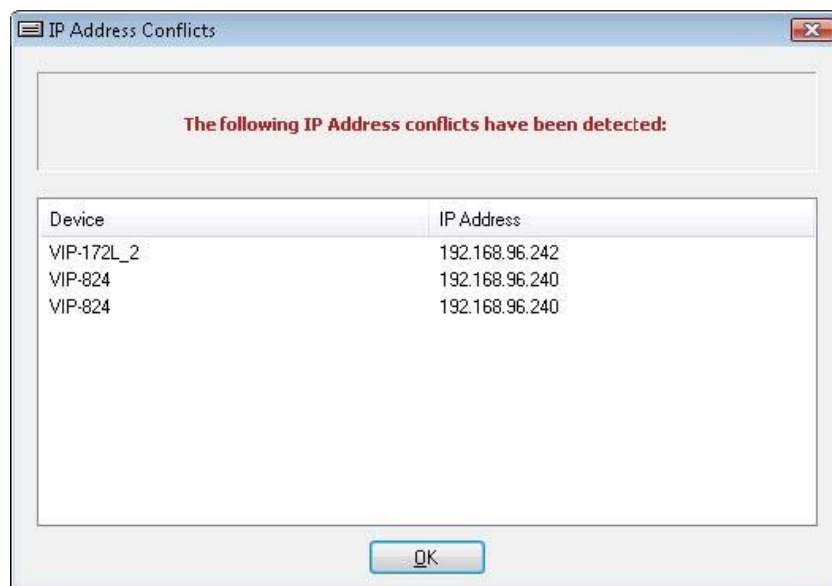
Conflicts Menu

SIP Address Conflicts

The SIP Address Conflicts listing displays all of the phone numbers that are configured on more than one device. SIP phone numbers are unique identifiers and cannot be assigned to more than one device at any one time. SIP phone numbers are conflicting if both the phone number and server it registers to are the same. For example, a device with the phone number "5555" that registers to "sipserver.com" does not conflict with phone number "5555" that registers to "othersipserver.com".

For any devices that have a conflict, the list provides the conflicting phone number and on which devices the data was found. In the example shown below, the conflict is displayed because Identity 1, Identity 2 and Identity 3 are all configured with SIP Phone Number "8015" and all identities are registering with a SIP Server at address 192.168.2.10.

All SIP address conflicts must be resolved for the system to function correctly.

				SIP Address Conflicts	

The following SIP Address Conflicts have been detected:

Device	Identity	SIP Address	SIP Server	Description
VIP-201	1	8015	192.168.2.10	
VIP-201	2	8015	192.168.2.10	
VIP-201	3	8015	192.168.2.10	

[OK]

Conflicts Menu

Device Cleanup

The Device Cleanup function is used for maintenance on the programming of the Valcom server products, such as the Application Server device. The devices shown in the Device Cleanup list are those devices that are programmed into the server, but not discovered in the latest network scan. This tool would be used to remove devices from the server when the device is no longer used so that its dial codes, group membership settings, and other features will no longer appear in the server's web interface. Devices that are just temporarily unavailable should not be removed using this function, since that would then remove all references to the device from the server.

To delete a device, click the check box beside the device name. Devices may be selected individually, or the **All** or **None** buttons may be used to select all or deselect all devices, respectively. When all appropriate devices have been selected, click the **Delete** button.

The updated information is stored in the VIP-102B IP Solutions tool. All of the affected devices should now be displayed in the device tree view with the Blue icon, indicating "Update Required". This indicates the changes must be sent to the device to become effective. The updates are delivered to the devices by using the Update Changed Devices option in the Communications menu.
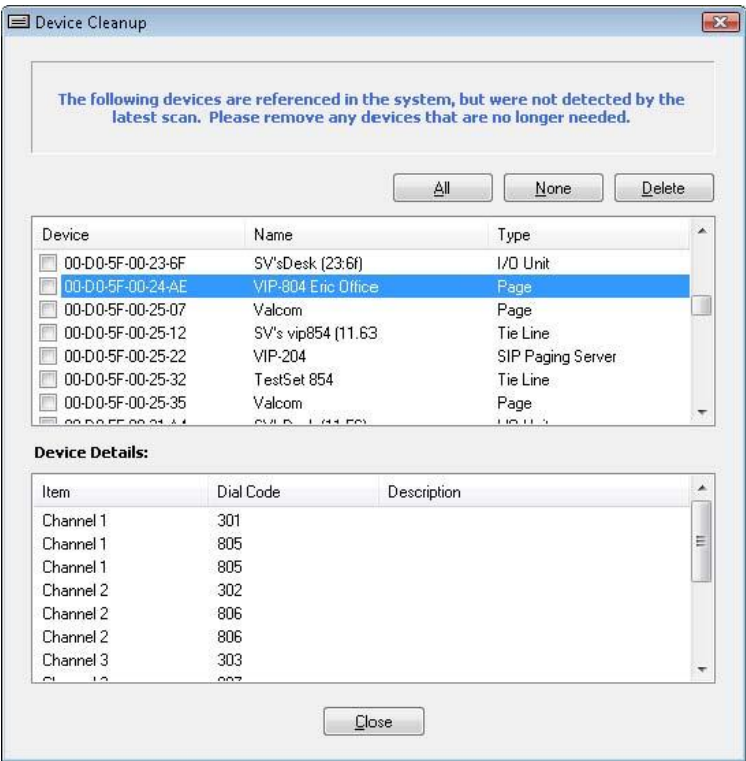
Device Properties

The Device Properties of Valcom IP devices define how each individual device will participate in network communications, paging groups and other functions that work together to comprise a paging network. The properties are grouped together in the Main Application window through the use of tabbed windows. Each tab is named for the group of properties contained on that tab.

Device Type (example model)	Property Tabs										
	Summary	Properties	Network	Talkback	Channels	Inputs	Relays	Group Membership	SIP	Nortel	Routing
Digital Clock (VIP-D640)	X	X	X								
I/O Unit (VIP-848)	X	X	X		X	X	X				
Nortel Trunk (VIP-892)	X	X	X		X					X	
One-Way Speaker (VIP-120)	X	X	X		X			X	X		
Page (Enhanced Network Audio Port VIP-801)	X	X	X		X	X	X	X	X		
Paging Server (VIP-201)	X	X	X		X		X	X	X		
Station (Enhanced Network Station (FXS) Port VIP-811)	X	X	X		X		X				
Talkback Speaker (VIP-172L)	X	X	X	X	X	X		X	X		

Tie Line (VIP-854)	X	X	X		X		X				
Trunk (Enhanced Network Trunk (FXO) Port VIP-821)	X	X	X		X			X			
VEUTM	X	X	X								X

All devices will have a Summary, Properties and Network tab. Other tabs are displayed when appropriate for the device. The chart below provides a cross-reference of the property tabs that are used with each type of device.

Device Properties
Summary Tab

The Summary Tab is always shown for all endpoints discovered by the VIP-102B IP Solutions Setup Tool. The absence of other endpoint tabs indicates that full communication with the related endpoint is not available. This may be due to several factors including network communication issues and IP address conflicts. The Summary tab includes a text box with information on any problems that prevent a full scan of the device (see example below). The color of the device icon shown in the device tree view will also indicate the status.

Note that all Valcom IP Solution device endpoints default to an IP address of 192.168.6.200. Therefore, if two or more new (factory default) devices are installed simultaneously, the device addresses will conflict and only the Summary Tab will be shown following initial system scans. After unique IP addresses are assigned to each endpoint and any other conflicts resolved, other programming tabs will be available for each endpoint as appropriate.

The Summary Tab is a read-only display of information, and includes the following items:

- **Name** . is the name configured on the Properties Tab for the device. If this device has not been configured, the default will be "Valcom".

- **Mac Number** . is the factory-assigned Media Access Control number for the device. This is a unique number programmed into the hardware and used for network communications.

- **IP Address** . is the network address configured on the Network Tab. This address can be assigned dynamically from a DHCP server, or statically by entering the required information on the Network Tab.

- **Device Type** . displays the Valcom device class for this unit. The device types are shown in the chart on the previous page.

- **Channels** . provides information on the number of communication channels available on the hardware of this device. A Channel is a logical link between Valcom IP devices that enables paging communication among one or more devices.

- **Software Rev** . is the release version of the firmware currently loaded on the device.

- **Startup Rev** . is the release version of the startup files currently loaded on the device.

- **Platform Rev** . is the hardware version of the device (G2=2nd Generation - G3=3rd Generation)

- **Device Status** . is a link to the Status web page for this device. Clicking the link will open the default browser to web page showing selected performance and configuration information. (commonly -IC devices)

Summary | Properties | Network | Talkback | Channels | Inputs | Group Membership | SIP

Name:

MAC Address: 00-D0-5F-01-B6-0F

IP Address: 192.168.96.127

Device Type: Speaker Plus-IC (TB) : InformaCast Dual-Mode

Channels: 1

Scan Data Source: Device - (data is retrieved from the device)

Software Rev: 3.19.5

Startup Rev: 4.05

Platform Rev: G3 - 1

Device Status

Device Properties
Properties Tab

The Properties Tab is always shown for all endpoints discovered by the VIP-102B IP Solutions Setup Tool.   The items available for programming on this tab include:

- **Device Name** . is a name assigned to this device to allow easy identification. The maximum length is 19 characters. The name entered here will be displayed in the device tree view, grouped by the device type within each defined network. If syslog messages are enabled, this name will also be used to identify messages sent by this device. This field may be left blank, in which case the VIP-102B tool will use the device $ MAC address to identify the unit in the device tree view.

- **Log Level** . sets the detail level of syslog messages. The options are 1, 2 or 3, with 1 providing a normal detail level and 3 providing the most detail. The default is 1.

- **Offset From UTC** . is the time zone in which the endpoint is installed. This is used to correct the system clock to the local time zone for system logging and other functions.

- **Perform DST Correction** . instructs the device to automatically adjust for Daylight Saving Time.

- **Relay Control** . for talkback speakers with relays allows the selection of two methods of control. **Activate on Keypress** which allows for a # in non-SIP communications, and 0-9, *, or # selectable on the **SIP** tab for SIP communications. **Activate on Call** which will trigger the relay as soon as the call is answered.

- **Generic Multicast Active** . If checked (default) allows the device to utilize listening to multicast audio from non-Valcom devices. Disabling prevents this function from loading when the device boots up.

- **SIP Communications Active** . If checked (default) allows for devices to communicate using SIP to communicate to an IP phone system. Disabling prevents this function from loading when the device boots up.

- **Comments** . is a free-form text field for entering any information desired to further clarify the device. Suggested uses include listing the physical location of the unit, the LAN switch port it is connected to, VLAN information, etc.

- **Copy** . provides a quick way to duplicate the information on this screen to other Valcom IP devices.

| Summary | Properties | Network | Talkback | Channels | Inputs | Group Membership | SIP |

Properties

Device Name:	IC Intercom
Log Level:	1
Hours Offset From UTC:	(UTC -05:00) : Eastern Time
Additional Minutes Offset:	0
Perform DST Correction:	☑
Relay Control:	Activate on Keypress
Generic Multicast Active:	☑
SIP Communications Active:	☑

Comments

[Copy] [✓ Apply] [✗ Cancel]

The **Copy** button on the Properties Tab provides a convenient way to copy the Log Level, Time Settings and other applicable settings to other Valcom IP endpoints. When clicked, the dialog box shown below is presented. The options to be copied may be selected from the checkboxes in the upper window. Valcom IP devices to which the chosen settings will be copied may be selected from the list in the lower window. The **All** or **None** buttons may be clicked to select all, or deselect all, of the devices, respectively. You can also filter down to a specific device type and click the **All** or **None** buttons for that particular device type. Clicking **Copy** will then apply the chosen settings to all of the devices selected.
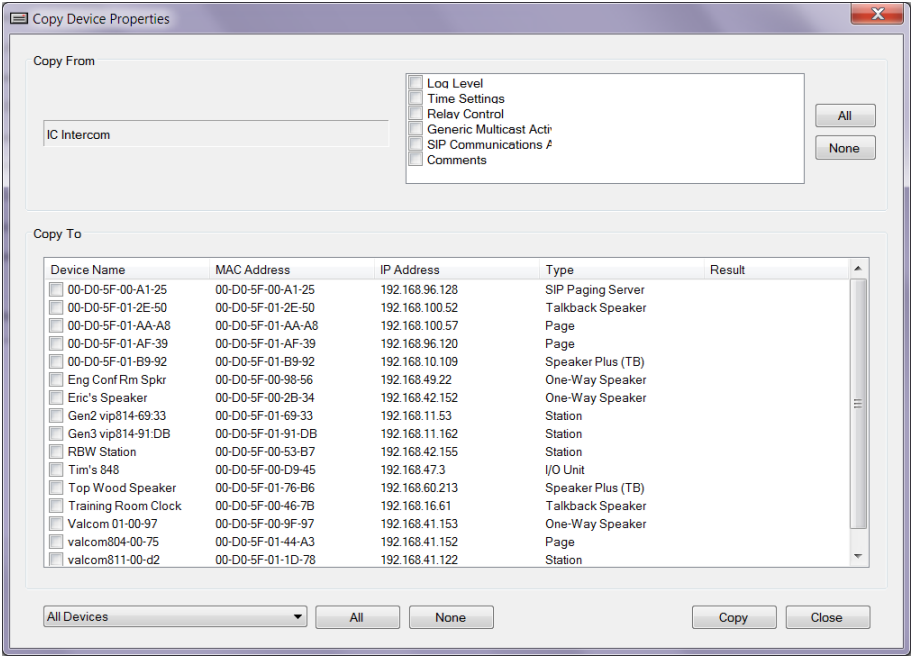
Device Properties
Network Tab

The Network Tab is always shown for all endpoints discovered by the VIP-102B IP Solutions Setup Tool.   The items available for programming on this tab include:

- **Host Name** . is the name of this endpoint as used by the TCP/IP network protocol. The Host Name may be up to 63 alpha-numeric characters. Device name (Properties Tab) is the name of the endpoint that will appear in the VIP-102B, Host Name is the name of the endpoint that will appear on the network. These may, or may not, be the same.

- **Domain Name** . is the TCP/IP domain name used by the network (253 characters maximum). This is typically the business or organization name, such as "valcom.com". This field may be left blank.

- **Use DHCP** . instructs this device to attempt to automatically acquire its IP address and other network configuration information using Dynamic Host Configuration Protocol (DHCP). If this option is used, the DHCP server must provide (at a minimum) the IP address, subnet mask and default gateway. Some DHCP servers have the ability to reserve IP addresses so that a specific device will always be assigned the same IP address. Valcom recommends using this feature, if available. Leave this box unchecked if using a statically-assigned address.

- **Synch Device** . will send IP address, subnet mask, gateway and DNS information to the device. This option is available for devices that need Verification.

- **Static IP Address** . is a standard Internet Protocol address to be used by this device, entered as four numbers in dot-decimal notation (e.g.: 192.168.6.200).   The address must be valid for the network segment where the device is located. This entry is required if not using DHCP.

- **Subnet Mask** . is a standard Internet Protocol mask number, entered in dot-decimal notation. When used with the IP Address, this distinguishes local network addresses from remote addresses. This entry is required if not using DHCP.

- **Gateway IP Address** . is the IP address of the default gateway for the network segment this device is on. The entry must be in dot-decimal notation and be a valid gateway (router) for this network segment. This entry is required if not using DHCP, and the network consists of multiple subnets.

- **Preferred DNS Server, Alternate DNS Server** . are entries for primary and secondary Domain Name System (DNS) servers. The entry must be in dot-decimal notation (e.g.: 192.168.6.200). DNS information is only required if any address entries use host names (e.g.: myserver.company.com). If dot-decimal entries are used for all IP addresses, then DNS server information is not required. DNS server information may also be provided by DHCP, if that method is used for address assignment.

- **Stun Server** . is the address of a server to be used for STUN (Session Traversal Utilities for NAT). STUN servers are used to facilitate IP communications through a device performing Network Address Translation (NAT). Note: STUN field appears only if the device is SIP capable.

- **Time Server** . is the location of a server providing Network Time Protocol (NTP). This may be entered as a host name or IP address in dot-decimal format. If specified by host name, then DNS information must also be provided (see above). If entered, the server will be used to obtain time information for this endpoint.

- **Continuous Beacon** . instructs the Valcom device to send a "beacon" network message. Beacon messages are used by Valcom devices to advertise themselves to other Valcom devices. This is used with Network Diagnostics to verify proper network communications. If this is unchecked, the beacon messages will only be sent for the first few minutes after a reboot.

- **Use Syslog Daemon** . when checked, will instruct the device to generate syslog messages. The messages will be sent to the device entered in the "Syslog Daemon" field.

- **Syslog Daemon** . is the location where syslog messages will be sent if "Use Syslog Daemon" is checked. The address may be in dot-decimal notation or host name. If the entry uses a host name, then DNS Server

information must be provided through the static entries on this property tab, or by DHCP.

The example below demonstrates a network configuration using static IP addressing. Since the Time Server and Stun Server are using host names, the DNS information was required to be entered.

The **Copy** button on the Network Tab provides a convenient way to copy the Time Server, Stun Server, Beacon, Syslog, Subnet Mask, Gateway and DNS Server settings to other Valcom IP endpoints. When clicked, the dialog box shown below is presented. The options to be copied may be selected from the checkboxes in the upper window. Valcom IP devices to which the chosen settings will be copied may be selected from the list in the lower window. The **All** or **None** buttons may be clicked to select all, or deselect all, of the devices, respectively. Clicking **Copy** will then apply the chosen settings to all of the devices selected.

Device Properties

Network Tab (VIP-848)

The Valcom VIP-848 Input/Output Device provides 8 Contact Closures Inputs and 8 Relay Outputs. The Relay Outputs may be programmed to respond to Contact Closures from itself or other VIP-848 devices. The Relays may also be programmed to follow the state of other Relays. The VIP-848 device is only controllable by itself or another VIP-848; it does not respond to contact closures or relays from other Valcom devices, such as the VIP-801.

The VIP-848 includes additional fields on the Network Tab. The items available include:

- **Send Syslog via Unicast** . when checked, will instruct the device to generate syslog messages. The messages will be sent to the single device address entered in the **Unicast IP Address** field.

- **Send Syslog via Multicast** . when checked, will instruct the device to generate syslog messages. The messages will be sent using multicast protocol to the address and port entered in the **Multicast Address** and **Multicast Port** fields.

- **Time To Live** . provides the network TTL value for this device to use for multicast syslog messages.

- **Send Syslog to Terminal** . if checked, will cause this device to output the syslog messages on the device's console terminal (accessed via telnet).

The **Advanced** button provides a dialog box for additional configuration options.

The Advanced Network Settings provides additional methods to configure the network communications between VIP-848 devices.

- **Multiple Control Method** . specifies the communications method to Control Groups. When a Contact Closure is configured to send a message to a Control Group, the message can be sent via a Unicast message to each individual VIP-848 device specified in the group, a Broadcast message, a Multicast message, or a combination of Broadcast and Multicast messages.

- **Send Multicast Arps** and **Send Broadcast Arps** . control whether Address Resolution Protocol messages are sent via one or both methods. Check the box to enable the method.

- **Subnet Broadcast Addresses** . provides the ability to add subnets to which the broadcasts will be directed. To add a subnet to the list, enter the subnet broadcast address in the text field below the listbox, then click the **Add** button. To remove an address from the list, click the address to highlight it, then click the **Delete** button.

  Click the **OK** button when finished, or click the **Cancel** button to cancel this dialog without making changes.
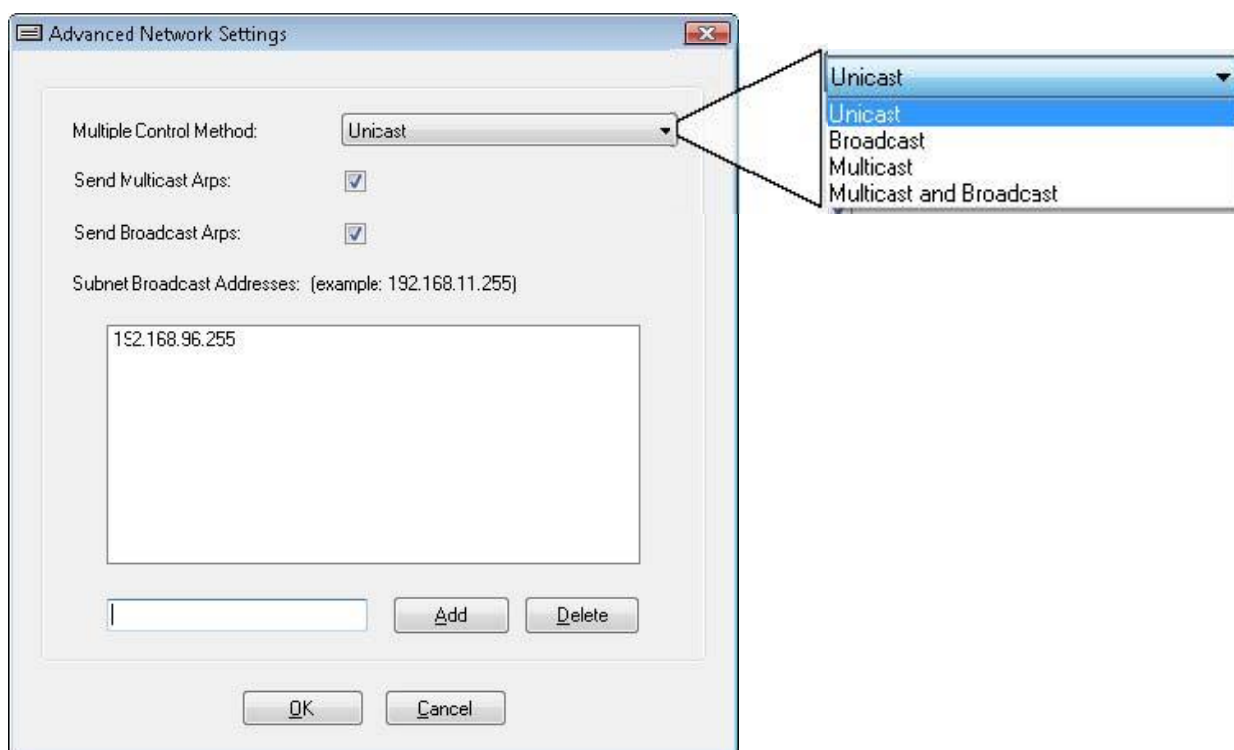
Device Properties
Talkback Tab

The Talkback Tab is only available when programming Valcom IP devices that have talkback capability, such as the VIP-172L. The items available for programming on this tab include:

- **Door Unlock Relay Activation Time** . defines the amount of time in seconds that the relay in the Valcom device will stay activated when triggered by another endpoint device. In typical use, the internal relay on the Valcom device could be connected to an electronic door lock mechanism. When a two-way voice connection from this device to another device is established, the other device can trigger the relay to activate by pressing the # key, which causes the door to unlock. This setting is valid for SIP devices only. For devices communicating via the Valcom protocol over Channels, the relay will remain activated while the # key is pressed, and deactivates when the # key is released.

- **Threshold** . is a relative setting that determines the level of audio required to switch the speaker in the Valcom talkback device between receive and transmit mode. A lower value for Threshold causes the device to produce audio when a lower inbound volume level is detected; higher numbers cause the device to require a higher inbound volume level (louder) before producing audio. If the device does not produce audio output when a normal voice level is spoken to it from an inbound call, then lower this value. If the device switches between transmit/receive too frequently (clipping), then raise this value.

- **Hold Time** and **Transmit Delay** . are unit-less values that are used in the logic controlling the transmit/receive switching function. The factory default values should work efficiently in most environments. Performance may be adversely affected if these are changed. Please consult with Valcom Technical Support for guidance in adjusting these values.

The **Defaults** button may be used to reset all of the items on this tab to the factory default settings.

The **Copy** button on the Talkback Tab provides a convenient way to copy the talkback settings to other Valcom IP endpoints. When clicked, the dialog box shown below is presented. The Talkback Settings option is preselected in the upper window. Valcom IP devices to which the chosen settings will be copied may be selected from the list in the lower window. The **All** or **None** buttons may be clicked to select all, or deselect all, of the devices, respectively. Clicking **Copy** will then apply the Talkback Settings to all of the devices selected.

Device Properties

Channels Tab

The Channels Tab provides programming options related to audio communications for Valcom devices. Channels refer to the method of communication among Valcom IP devices using a proprietary protocol. Depending on the device being programmed, the Channels Tab may have more than one page. Each page may be displayed using the slider control at the bottom of the screen. For multi-channel devices, each channel will be programmed separately on this tab. **NOTE:** All of the possible programming items are shown in this document, although every item may not be applicable to every Valcom IP device. When programming a device, <u>only the items that are applicable for that device type will be shown on the tab.</u>

The items available for programming on this tab include:

- **Channel Mode –** this option only appears for Speaker Plus-Dual Mode devices. You can configure these for Talkback or One Way functionality. An Update and Rescan is required after making the switch to show appropriate tabs and fields for the mode selected.

Channel Mode:	Talkback	One-Way
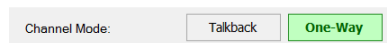
- **Dial Code** . defines the unique number that is assigned to this device. A Dial Code may be thought of as a phone number or directory number, and is the number that will be %dialed+from other devices to establish contact with this device. Dial codes must be numeric and must be the length specified in the %Dial Code Length+option on the System Menu.

- **Description** . provides a text field for information describing this channel (30 character maximum)

- ****Auto Destination** . is a Dial Code for another Valcom IP device in this system to which this device will automatically attempt to connect. When an event occurs that causes this IP endpoint device to send audio, this device will automatically connect (dial) the Dial Code entered in this field and send the audio to that device.

- ****Sec Auto Destination** . is a Dial Code for another Valcom IP device to which this device will automatically attempt to connect in the event the primary Auto Destination code is not reachable. If the primary Auto Destination endpoint returns a Busy signal or does not answer, the Call Fwd Busy and Call Fwd No Answer settings will control.

- **CID Name** . is the text that will be provided by this endpoint device as the Caller ID information for an outbound connection to other endpoints. Endpoints with Caller ID display capability will be able to display this information. The field has a maximum size of 15 alphanumeric characters.

- **CID Number** . is the telephone number that will appear on endpoint devices with Caller ID capability. This field has a 10 digit maximum length.

- **Codec Type** . is the compression/decompression standard to be used for communication. G.711 is the only standard supported.

- **Call Fwd Busy** . instructs the device to forward an inbound connection to the Dial Code entered in this field if this channel is in use. The Dial Code entered must meet the dial code length requirement for the system and be assigned to a valid Valcom IP device. If left blank, inbound connections to this channel will receive a busy tone if the channel is already in use. This option does not apply to Talkback devices.

- **Call Fwd No Answer** . instructs the device to forward an inbound connection to the Dial Code entered in this field if this channel is not answered. The period to wait for an answer before forwarding is specified in the **Rings** dropdown box. The Dial Code entered must meet the dial code length requirement for the system and

be assigned to a valid Valcom IP device. If left blank, inbound connections will ring until answered or abandoned by the caller. This option does not apply to Talkback devices.

- **Audio Input Volume** . specifies the gain applied to the input signal on the Audio Input connection. The value is set using the slider control, and ranges from -48 to +28 decibels (db). A negative value will reduce the volume level of the input; a positive value will increase the volume level.

- **Audio Output Volume** . specifies the gain applied to the output signal on the Audio Output connection. The value is set using the slider control, and ranges from -48 to +28 decibels (db). A negative value will reduce the volume level of the output; a positive value will increase the volume level.

- **Use VOX Activation** . (Appears only on VIP-80x devices) instructs this device to use Voice Operated Switching (VOX) to control when sound is transmitted over a communication channel. To use this option, an audio source must be connected to the Audio Input connection of the device. When an audio signal appears on the Audio Input connection, this device will automatically connect to the device programmed in the Auto Destination field (see above). The communication channel to the Auto Destination device will remain active as long as the audio signal continues on the input connection. When the audio signal stops, the communication channel is closed. When this option is not selected (unchecked), audio signals on the Audio Input connector will not trigger a connection. If not using VOX, audio input can be controlled using the Audio Input Contact Closure. (see **Input tab** for controlling audio input contact closure)

- **Aux Input Enabled –** When checked allows an audio source to be connected to the aux input of the device. Typically used for background music. Audio passes through the same device to its audio output and will mute when a page is received. This is disabled by default.

- **Pre-Announce Tone** . instructs the device to provide a short tone immediately before the audio stream, typically used to alert listeners that an announcement is starting.

- **Privacy Tone** . is a periodic tone that is played through a talkback speaker when the speaker is active. This tone provides an indication that the audio path is open from that device, and therefore any sounds could be picked up and transmitted to another station.

- **Ringback Alert Tone** . is a tone played on a talkback speaker to indicate a call has been initiated from the speaker.

- **Incomplete Call Message** . is an audio recording that is played by a talkback speaker when a call initiated from the speaker cannot be completed to the programmed destination number. Customer-supplied audio files may be uploaded to the device for this message using the Upload Device Files option on the Communications menu.

In the example shown below, the device has one channel which has been assigned Dial Code 803 and is programmed with primary Auto Destination number 987 and secondary Auto Destination number 988. All outbound connection attempts from this device will automatically be sent to dial code 987, with failover to 988 if 987 is unreachable. If this channel is busy when an inbound connection is attempted by another endpoint, the inbound connection will be forwarded to dial code 802. If an inbound connection attempt is not answered in 4 rings, the inbound connection will be forwarded to dial code 423. Audio Input and Output Volume levels have been set to +8, indicating a gain of 8 decibels will be applied to both the audio input and output connections. A pre-announce tone will be played immediately before a page is played, and a privacy tone will be used on talkback speaker endpoints.

** *Auto destination fields for Gen3 (G3 platform) speakers will not appear on the Channels tab. They are combined with the SIP auto destination fields on the Input tab.*

Device Properties
Channels Tab (VIP-854)

The VIP-854 (Tie-Line) unit is an IP device which has two FXS ports (emulate Central Office) and two FXO ports (emulate telephone). The VIP-854 is typically used in pairs to connect two telephone systems over an IP network connection. When an FXS port on one unit detects an off-hook at its input, then the associated FXO port on a pre-determined destination unit is commanded to go off-hook to whatever it is connected to (a PBX possibly). This session ends when the FXS port detects an on-hook at its input.

The Channels Tab defines the connection from one VIP-854 to another VIP-854. Channels 1 and 2 correspond to the two FXS ports; channels 3 and 4 correspond to the two FXO ports.

The items available for programming on this tab include:

- **Dial Code, Description** and **Codec Type** are programmed as described on the previous Channels Tab pages.

- **Auto Destination** . is the Channel 3 or Channel 4 (FXO) Dial Code specified on another VIP-854 device in this system. When this Channel (1 or 2) detects an Off-Hook event, it causes the specified Channel 3 or Channel 4 (FXO) Dial Code on the other VIP-854 device to go Off-Hook. This field is only available when programming Channels 1 or 2.

In the example below, when Channel 1 detects the off-hook event, it will automatically connect to another VIP-854 that has dial code 844 assigned to its channel 3 or 4. Dial code 844 will go off-hook and send the resulting audio back over the network to this device.

Device Properties
Inputs Tab

The Inputs Tab provides programming options for the contact closure inputs on Valcom devices. The contact closure inputs can be used to control the audio input connections, for external supervision, or can be disabled. This tab is only available for devices which have contact closure inputs, such as the VIP-801. Depending on the device model, 1, 2 or 4 input connections are available. The VIP-848 I/O Device is specifically designed to provide multiple inputs and relays (8 each), and is described separately in this document.

The Inputs Tab has a separate page for each input. Each page may be selected using the slider control at the bottom of the page.

Input Function . determines what the input contact closure controls. Selecting **Not Active** will disable monitoring of the contact closure; opening or closing the contacts will have no effect. The Audio and Supervision options are described separately below.

Audio On / Audio Off:

When the Input Function selection is Audio On / Audio Off, the contact closure will control the line level audio input on the device for the input selected (1 through 4).

- **Channel Mapping** . selection determines to which channel the audio stream from the line level input connection will be sent. In a typical installation, the channel where the audio is sent will have an Auto Destination setting that determines where the audio is played.

- **Activate On** . selection determines the state of the input contact closure which will trigger the Input Function. The options are Closed or Open. For "Closed", the contact closure would normally be open and the Input Function would be triggered by closing the contacts. The opposite would apply to "Open". When set to "Open", the contact closure would normally be closed and the Input Function would be triggered by opening the contact.

For the example shown below, assume Channel 1 has an Auto Destination programmed to dial code 777. Assume also that a line level audio source is connected to the first audio input connection and a toggle switch is connected to the first contact closure on this device. When the toggle switch is moved to the "closed" position, the audio signal on the audio input line will be sent to Channel 1. Since Channel 1 has an Auto Destination set to 777, this device will automatically connect to the device at 777 and send the audio stream to that device. The audio will continue to be sent to 777 until the toggle switch on this device is moved back to the "open" position.

External Supervision:

When the Input Function selection is **External Supervision**, the contact closure on this device can control a relay on another Valcom IP device. When the contact closure on this device is activated (closed), the relay on the second Valcom device is activated (closed).

- **Channel Mapping** . selection determines to which channel the supervision will be sent. The Channel Mapping must match the Input number being programmed (see the example below).

- **Destination Dial Code** . determines the remote Valcom IP device that will be controlled by this device. The dial code entered must be the same length as the System Dial Code used in this paging system, and be a valid IP endpoint. The destination endpoint device must have a relay programmed to use "Follow Input" and that relay's Channel Mapping setting must match the Channel Mapping setting on this page. Also see the section on Relays later in this manual.

- **Syslog Message** . provides a 40 character maximum text message that will be sent to a syslog server when this Input Function is activated. Syslog messaging requires a valid syslog server be defined on the Network Tab for this device.

For the example shown below, assume there is a remote Valcom IP device programmed for dial code 836, which has a relay that is programmed to Follow Input on Channel 1. Assume also that a valid syslog server has been configured on this device, and a toggle switch is connected to the first contact closure on this device. When the toggle switch is moved to the "closed" position, the relay on the device at dial code 836 will be signaled to close. At the same time, a syslog message containing "Contact Closure Activated on 543" will be sent to the configured syslog server. The relay on 836 will continue to be held closed as long as the toggle switch is kept closed. When the toggle switch is moved back to the "open" position, the relay at 836 will be instructed to open.

Device Properties

Inputs Tab (Talkback Speakers)

The Inputs Tab for a talkback speaker provides programming options for one or more contact closure (Call Button) input on a speaker faceplate or separate wallplate call button. The contact closure inputs can only be used as Call Buttons or can be disabled. These options are only available for devices utilizing Talkback speakers. e.g. VIP-172L, Emergency Tower.

Input Configuration option provides a dropdown list of choices for the type an number of call buttons for the device. Available are **Unknown** (usually not selected. Only shows if value is undetermined from a scan), **Normal Input** (1 button), **Normal/Emergency** (2 buttons), **Normal/Emergency/Volume** (4 buttons), **Two Normal Inputs, Three Normal Inputs,** and **Four Normal Inputs.**

The **Input Function** option provides a dropdown list of choices for the action taken when the Call Button switch on the doorplate speaker assembly is pushed.

- **Not Active** . disables monitoring of the contact closure; pushing the Call Button on the doorplate speaker assembly will have no effect.

- **Call Switch** . enables the Call Button to function as a call switch. Pushing the button will initiate a call from the doorplate speaker to a dial code programmed into the Auto Destination field of the Channels Tab or to the Auto Destination field on the SIP Tab. If the Auto Destination fields on both tabs have entries, the Channels Tab Auto Destination field will take priority and the inbound call will be sent to that dial code. To force the SIP Auto Destination field to be used, the Channels Auto Destination field must be blank.

- **Call Switch** . **904** . enables the Call Button to function as a call switch in conjunction with a VIP-904 device. The VIP-904 creates an interface between the VIP-172L and a Valcom MultiPath traditional analog paging system.

- **Push to Page –** provides a means of paging to other speakers from a single talkback speaker. For example, you could set up two VIP-172L devices for Push to Page input. Both have to belong to an audio group, and you would use the Auto Destination field on both to that audio group. When one device call button is pressed (and held) you can ‰intercom+to the other device. Call ends when call button is released. Other device would answer the same way.

- **Program Selection –** Allows up to 5 audio groups to be ‰cycled through+for paging to. Each time you press the call button that audio group will be paged through.

For Gen 3 speakers the auto destination fields for non-SIP and SIP both primary and secondary appear on this tab rather than the channel tab and SIP tab.

Device Properties
Inputs (VIP-848)

The Inputs Tab for the VIP-848 provides configuration settings for each of the 8 available Contact Closure Inputs. Use the slider bar at the bottom of the page to display each Input's configuration page.

- **Name** . is a text field for entering a descriptive name for this input (maximum of 30 characters).

- **Priority** . is a choice of Low, Medium or High. The priority assigned to this input is inherited by the relays this input controls. In the case of conflicting commands from other inputs, the input with the higher priority level will succeed.

- **Activate On** . provides the choices of Open, Closed or Disabled. Open indicates the relays controlled by this Input will be activated (commanded to Non-Default state, either Open or Closed) when this input is opened (not shorted). Closed indicates the relays controlled by this Input will be activated when this input is closed (shorted). Disabled indicates this input is ignored and will have no effect.

- **Control Item** . is an individual Relay on this or another VIP-848 device, or a Control Group that will be activated by this Input. The dropdown box will list all of the VIP-848 relays and Control Groups known to the system. When the "Activate On" condition is met, the Control Item chosen will be sent the command to change from its default state to its activated state. Groups are defined in the Control Groups option on the System menu. The Pencil icon with this list box may be used to add items that are not already in the list. To add a new item, click the Pencil icon then enter the Dial Code and Relay Number (1-8) to be defined.

- **Resend Interval** . defines the time period between resend messages from this unit to the Control Item. When the Input is activated, it will resend its control message, at the specified intervals, to the Control Item.

- **Resend Checking** . defines the time period (up to 18 hours) for the amount of time the Control Item will wait to check if control messages are still being received. If control messages are not received in this time frame, the controlled relay will return to its default state. For this to be effective, the Resend Interval must be a shorter amount of time than the Resend Checking interval.

- **Group Handshaking** . when enabled, if the Control Item is a group, this requires each VIP-848 device specified in the Control Group, to respond with a Handshake message back to the sending VIP-848 device. If Handshake replies are not received from all VIP-848 devices specified in the Control Group, the Control message is resent to only the non-responding VIP-848 devices. After several resends are made, if there are still any non-responding VIP-848 devices, no further resends are made.

Device Properties
Relays Tab

The Relays Tab provides programming options for the relay connections on Valcom devices. The relays can be used to control various external devices, such as electronic door locks. A relay on a Page device may also be used in a supervisory mode to indicate if other Valcom IP devices have become unavailable. Depending on the device model, relays may be Normally Open or Normally Closed, and have either 2 or 4 relays available. Activating a relay refers to causing it to change from the default state (either open or closed) to the opposite state. Activation of the relays may be triggered by several events, described below. This tab is only available for devices which have relay connections, such as the VIP-801. The chart at the bottom of the page indicates which relay functions are available with selected device types.

The VIP-848 Input/Output Device is specifically designed to provide multiple inputs and relays (8 each), and is described separately in this document.

The Relays Tab has a separate page for each relay connection. Select the relay to be programmed by using the slider control at the bottom of the page.

- **Relay Function** . determines what event causes the relay to activate. Each option is described separately below.

- **Channel Mapping** . associates the Relay Function to the chosen audio channel (also see the Channels Tab).
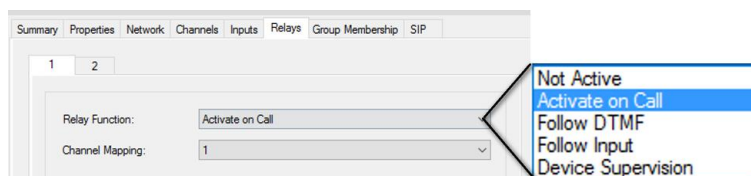
Device Type	Relay Functions					
(example model)	Not Active	Activate on Call	Follow DTMF	Follow Input	Supervise	Activate During Ring
Speaker Plus (Talkback Intercoms/Emergency Towers)	X	X	X			
Page (Enhanced Network Audio Port VIP-801)	X	X	X	X	X	
Paging Server (VIP-201)	X	X				

Station (Enhanced Network Station (FXS) Port VIP-811)	X	X	X	X		X
Tie Line (VIP-854)	X	X	X	X	X	
Trunk (Enhanced Network Trunk (FXO) Port VIP-821)	NA	NA	NA	NA	NA	NA

Activate on Call:

When the **Relay Function** selection is **Activate on Call**, the relay will be activated during the entire time an inbound call (page) is active. When the inbound connection is ended, the relay will deactivate.

The **Channel Mapping** will determine which Valcom proprietary audio channel (see Channels Tab) will be monitored for activity.

In the example shown below, Relay 1 is being programmed. The function of the relay will be to Activate on Call. Channel Mapping is set to %3+, so inbound connections on Channel 3 will be monitored. When another Valcom IP device %calls+Channel 3 by dialing the Dial Code programmed on Channel 3, then Relay 1 will close. Relay 1 will remain closed while the inbound connection is active.

Follow DTMF:

When the **Relay Function** selection is **Follow DTMF**, the relay will be activated by pressing the # key. The relay will remain activated until the # key is released. The # key may be pressed and released multiple times if necessary.

The **Channel Mapping** will determine which Valcom proprietary audio channel (see Channels Tab) will be monitored for the key press activity.

In the example shown below, Relay 2 is being programmed. The function of the relay will be to Follow DTMF. Channel Mapping is set to 3, so connections on Channel 3 will be monitored. When another Valcom IP device calls Channel 3 by dialing the Dial Code programmed on Channel 3, then the communication channel will be monitored for DTMF signals. If a # DTMF tone is detected, Relay 2 will close. Relay 2 will remain closed for the duration of the time the # key is pressed.

| Summary | Properties | Network | Channels | Inputs | Relays | Group Membership | SIP |

Relay 2

Relay Function: Follow DTMF ▼

Channel Mapping: 3 ▼

2 of 4

◄   III   ►

Cancel

Follow Input:

When the **Relay Function** selection is **Follow Input**, the relay will be activated by a contact closure on this device or a different device on the network. The input (contact closure) to be followed is programmed on the Inputs Tab. The Inputs Tab has a Destination Dial Code field that must match the Dial Code of the channel selected on this screen.

The **Channel Mapping** will determine which Valcom proprietary channel (see Channels Tab) will be monitored for activity.

In the first screen shown below (Device A), Relay 2 is being programmed to Follow Input. Channel Mapping is set to %4, so connections using the Dial Code programmed for Channel 4 will be monitored. For this example, Channel 4 is programmed with dial code 836.

The second screen (Device B) shows the programming for Input 4 on another Valcom IP device. It is programmed for External Supervision of the device using Dial Code 836.

When the Contact Closure Input 4 on Device B is closed, Device B will send a signal to Device A on channel 4, instructing Device A to activate Relay 2. When the Contact Closure on Device B is opened, a signal will be sent to Device A to deactivate Relay 2.

Device A

The example below shows the details from the Inputs Tab of the device that is controlling Relay 2 shown above.

Device B

Supervise:

Valcom Page device types, such as the VIP-801, have the ability to monitor other Valcom devices. When the **Relay Function** selection is **Supervise**, the Valcom device will monitor the availability of other Valcom IP devices on the network. When a device is acting as the Supervisor, the relay being programmed will be closedwhen the device is started. This is the reverse of the normally open state for relays.

This Valcom device will periodically send messages to each of the devices chosen to be supervised. If a response is not received from the remote device, this device will open the relay. The relay will also go to the open state if power is interrupted to this unit. This relay state change can then be used with external signaling devices to generate an alert. This device will continue to send messages to the remote devices, and if the remote begins to respond again the relay will return to the closed state.

In the example below, Relay 1 is being programmed to Supervise other devices. The devices to be monitored will be selected from the device list by checking the box beside the device name. The IP addresses of the devices are also shown for reference.

The **All** or **None** buttons may be clicked to select all, or deselect all, of the devices, respectively. Additionally, a device that is not currently shown in the list may be added by typing the IP address of the device into the text field and clicking the **Add IP** button.

Active During Ring:

When the **Relay Function** selection is **Active During Ring**, the relay will be activated when an inbound connection is made to the device on the chosen channel.   The activation will continue while the device is "ringing" and will end when the call is answered or if the caller abandons the attempt. The activation follows the standard ring cadence of 2 seconds on, 4 seconds off.

The **Channel Mapping** will determine which Valcom proprietary audio channel (see Channels Tab) will be monitored for the connection.

In the example shown below, Relay 1 is being programmed. The function of the relay will be Active During Ring. Channel Mapping is set to "3", so connections on Channel 3 will be monitored. When another Valcom IP device "calls" Channel 3 by dialing the Dial Code programmed on Channel 3, the inbound communication attempt will cause Relay 1 to be closed. Relay 1 will remain closed for the duration of the ring cadence. The time the relay is activated is the same as the "ringing" of the destination telephone. A practical use of this feature is to activate an indicator light to match the ringing of a telephone.

Device Properties

Relays (VIP-848)

The Relays Tab for the VIP-848 provides configuration settings for each of the 8 available relays. Use the slider bar at the bottom of the window to display each Relay's configuration page. VIP-848 relays are only controllable by other VIP-848 devices or Valcom Application Servers.

- **Name** . is a text field for entering a descriptive name for this input (maximum of 30 characters).

- **Default State** . is a choice of **Open**, **Closed**, **Open / Disabled** and **Closed / Disabled**. "Open" and "Closed" have the expected operation of being normally Open or normally Closed, and the state transitions to the opposite state when activated. "Open / Disabled" and "Closed / Disabled" indicate the normal state of the relay will be Open or Closed, respectively, but also will not respond to control messages from other VIP-848 devices. The relay will respond to control messages from Valcom Application Servers. In either of the two "Disabled" options, the relay will remain in its default state continuously, unless activated by an Application Server.

- **Follow Relay** . provides the choice of following, or mirroring, the action of a individual Relay on this or another VIP-848 device. The dropdown box will list all of the VIP-848 relays known to the system. When the chosen relay (to follow) is activated (Open or Closed), then when this relay (follower) next checks (at specified regular intervals) the Open/Closed state of the followed relay, it will change its state to that of the followed relay. See the description below on Monitor Interval for status check information. Whenever a relay is specified to follow the state of another relay, it is not directly controllable by a Contact Closure Input. Choose the "Off" setting to allow this relay to be controlled by a Contact Closure Input directly.The Pencil icon with this list box may be used to add items that are not already in the list. To add a new item, click the Pencil icon then enter the Dial Code and Relay Number (1-8) to be defined.

- **Monitor Interval** . defines the amount of time between status checks from the relay being programmed and any relay it is set to follow. For a relay that is programmed to Follow another relay, a status check will be sent to the relay being followed to see if the state has changed. The status check message will be sent at intervals corresponding to the Monitor Interval setting. The smallest interval allowed is 250 msec; the longest interval is 24 hours. Longer interval times will reduce the responsiveness of the relay, as changes in the state of the Followed relay may not be detected for the period of time set by the Monitor Interval. Shorter interval times will cause an increase in network traffic due to more frequent status checks.

Device Properties
Group Membership Tab

The Group Membership Tab provides programming options for group membership of the channels on this device. Audio Groups are defined using the Audio Group function on the System pulldown menu. The Audio Group Membership function, on the System pulldown menu, also may be used to modify group membership.

By associating a device channel with an Audio Group, multiple Valcom IP devices may be contacted at one time. When the Dial Code assigned to an Audio Group is paged, all devices belonging to the group will receive the transmission.

To assign group membership on this screen, choose the **Channel** to be assigned from the dropdown list. Then choose the groups the Channel should be a member of by clicking the check box beside the device name in the list. If there are no groups listed, the Audio Groups function on the System menu must be used to first create the group.

Clicking the **All** or **None** buttons will check, or uncheck, all of the groups in the list, respectively.

For Enhanced Network Trunk devices, an additional field for **Set Auto DTMF** and **Clear Auto DTMF** are available. This field provides a method to have the IP device automatically send a DTMF sequence to the device attached to the device s FXO port. This can be used to cause the attached device, for example a PBX or Valcom page controller, to perform some pre-determined action.

The **Clear All Channels** button will remove this device from all of the groups for all of the channels. This is a convenient way to remove every channel of the device from all groups. If this button is clicked, a dialog box will prompt for confirmation before clearing the group membership. The **Cancel** button will <u>not</u> undo this action.

The **Cancel** button may be used to undo changes to the Group Membership settings, but only while still on the same Channel. Selecting a different Channel, or moving the focus to a different Tab or Device, will cause the settings to be saved in the VIP-102B IP Solutions Setup Tool database.

Device Properties
 SIP Tab

The SIP Tab is shown for all endpoints that support communications using Session Initiation Protocol. Depending on the device being programmed, the SIP Tab may have multiple pages corresponding to the number of SIP identities supported by the device. Each page may be selected using the slider control at the bottom of the screen. Each channel will be programmed separately on this tab. All of the possible programming items are shown in this document, although every item may not be applicable to every Valcom IP device. When programming a device, only the items that are applicable for that device type will be shown on the tab. The items available for programming on this tab include:

- **Phone Number** . defines the unique number that is assigned to this device. The SIP Phone Number, or directory number, is the number this device will respond to for inbound connections. Phone Numbers can contain letters, numbers, period (.) or dash (-). Phone Numbers are not restricted to the length specified in the %Dial Code Length+ option on the System Menu.

- **Description** . is a text description of this SIP identity (30 characters maximum). This field is used with the Valcom Cisco Paging Server to build a paging directory displayed on Cisco phones.

- **Authentication Name** . is the identification used to register with a SIP server or Proxy. This can also be referred to as a username for the SIP server.

- **Secret** . is the password used with the Authentication Name when registering with a SIP server.

- **Realm** . is the security domain in which the Authentication Name and Secret are defined.

- **SIP Servers** . is the registrar server(s) to which this endpoint device will attempt to register. You can have at least one primary and up to 3 backup servers. These entrries may be an IP address, or, if DNS is properly configured on the Network Tab, server names. The **Register** checkbox must be selected (checked) to enable the registration to occur. The **DNS SRV** can be checked if you are using DNS to provide a list of SIP servers that can be registered to.

- **Outbound Proxy** . is the device to which SIP communications should be directed to be %proxied+, or forwarded, to the next segment of the network. This entry may be an IP address, or, if DNS is properly configured on the Network Tab, a server name and is different from the SIP server entry.

- **SIP Server Port** and **SIP Port** . are the IP port numbers to be used for SIP communications. The default values of 5060 are well-known standard ports. The *SIP Server Port* value is the port on the SIP server that listens for SIP communication; the *SIP Port* value is the port on the Valcom IP device that responds to SIP.

- **Outbound Port** . is the IP port number used for communicating to the Outbound Proxy (see above).

- **RTP Port** . is the IP port number used for Real Time Protocol communication. RTP is the protocol used for sending/receiving audio over the network. This entry should be an even number to conform to industry best practices.

- **Idle Timeout (secs)** . is configurable from 0 . 60 by a multiple of 10. If audio packets are no longer received after the set number of seconds the device will terminate the call. 0 is the default which disables the timeout.

- **Max Call Timer (secs)** . is configurable from 0-600 by a multiple of 15. The device will terminate the call when the timer reaches the number of seconds configured regardless of the call in progress. 0 is the default which disables the timeout. (typically used when calls are not hung up properly)

- **Auto Destination –** is a Phone Number to a SIP-based device to which this device will automatically connect. When an event occurs that causes this IP endpoint device to send audio, this device will automatically connect (dial) the Phone Number entered in this field and send the audio to that device. This is used primarily

with devices that have a pushbutton to originate a call, such as the VIP-172L. When the button is pushed, the device will automatically connect, or "ring down", to the Auto Destination number.

Note: Some devices have auto destination field on the Input tab for both SIP and non-SIP use. It is recommended to use the SIP auto destination fields if you are utilizing SIP and leave the Channel (or non-SIP auto destination field blank

- **CID Number** . is the telephone number that will appear on endpoint devices with Caller ID capability. This field has a 10 digit maximum length.

- **CID Name** . is the text that will be provided by this endpoint device as the Caller ID information for an outbound connection to other endpoints.   Endpoints with Caller ID display capability will be able to display this information. The field has a maximum size of 15 alphanumeric characters.

- **Relay Activation Key** . (VIP-172L/VIP-172AL) provides a dropdown list to select which character to use to activate the relay on a talkback speaker. # key is the default. 0-9 and * may also be selected in cases where the # may be used by the phone system for in call functions.

The following example shows the configuration of SIP Identity 1 for a device that supports one identity. This device will register itself as Phone Number 8016 to the SIP server at address 192.168.2.10, using the Authentication Name of "VIP-172L-8016" and password "My_Password". When this device makes an outbound call, it will automatically call to the Auto Destination dial code 7200 based on the **Input tab**.

*Note: Any SIP endpoint can be configured as a SIP Trunk (even if it does not have a SIP trunk option). Typically you would *not* check the "Register" option on the Valcom gateway's SIP form as registration is not usually required for SIP trunks. Registration, by properly completing the SIP form of the Valcom Gateway, is more likely required if the Valcom gateway is initiating audio (talkback).

A route must be built in the phone systems for each extension defined for calling to the Valcom endpoint/gateway as well as an inbound route coming from a Valcom endpoint/gateway that is talkback, to a specific extension or hunt group.

Device Properties
SIP Tab (VIP-201, VIP-204)

The Valcom VIP-201 and VIP-204 devices have additional SIP functionality. The device can be programmed as either SIP Stations or a SIP Trunk. Each SIP Identity can be made a member of one or more groups, with each member of those groups receiving the audio when the SIP Identity is called.

<u>**SIP Mode – Station**</u> . allows each of the eight SIP identities to be configured as a distinct SIP endpoint. Each identity may be individually programmed to register with a SIP server, perform Night Ring, etc.

- **Night Ring** . is a setting that will cause the SIP identity to generate an audio signal (ringing) on all of the Valcom IP devices that are part of the same group. To use this feature, create an Audio Group with members consisting of the devices where the ring tone should be heard and include this SIP identity in the group. When this SIP identity s Phone Number is called, a ringing tone will be generated at all of the group members.

- **Pre-Announce Tone** . instructs the device to provide a short tone immediately before the audio stream, typically used to alert listeners that an announcement is starting.

- **Store and Play** and **Play Count** . instructs this device to record the page audio internally before sending the audio to the destination. When using this feature, up to 30 seconds of audio made to this SIP identity will be recorded internally. When the call is disconnected, the device will send the page audio to the assigned group(s). The Play Count setting allows the page to be repeated up to 4 times. Note that up to 4 SIP identities may be designated as Store and Play on a single device.

- **Audio Groups** . is the selection of groups that this SIP identity is a member of. The groups are defined in the Audio Groups function under the System Menu. The **All** or **None** buttons may be used to select all, or none, of the groups, respectively.

SIP Mode – Trunk . allows the device to function as a SIP trunk endpoint. In this mode, the device will accept inbound SIP connections for up to 100 phone numbers. Up to eight SIP connections (calls) may be active at any time. Each of the 100 SIP identities may be assigned to groups, perform Night Ring, etc.

The SIP identities (extension numbers) this device supports can be programmed either individually or by a range of numbers, and are listed in the Extensions list box. The total number of defined extensions is also shown.

To enter the extensions individually, click the **Add** button. To enter a consecutive range of numbers, click the **Add Range** button. To edit a previously-defined extension, highlight the desired extension and click the **Edit** button. To remove a previously-defined extension, highlight the desired extension and click the **Delete** button. The **Delete All** button will remove all of the extensions. A dialog box will be presented requiring confirmation before deleting.

SIP Trunks do not generally require Valcom gateways to register. Routing for the extension(s) associated with the Valcom gateway need to be configured in the phone system, so that calls to your defined extension number(s) can be properly routed.

For Valcom gateways with an actual SIP Trunk Mode, like SIP Paging Gateways, if registration *is not* required by the phone system then you only need to configure the "Extensions" portion of the SIP trunk form. The SIP Trunk mode form may be found in the VIP-102B IP Solutions Setup Tool. Refer to the following figure.

For SIP Trunk Mode

Most phone systems only require the Extensions section to be populated.

A route must be built in the phone systems for each extension defined.

If registration *is* required, then populate all required fields, which vary by phone system.
The registration of the Valcom gateway represents the SIP trunk. The SIP trunk registration can then be associated with multiple dial-peers (extensions) for routing outbound calls to Valcom Groups.

Note that any SIP endpoint can be configured as a SIP Trunk (even if it does not have a SIP trunk option). Typically you would *not* check the "Register" option on the Valcom gateway's SIP form as registration is not usually required for SIP trunks. Registration, by properly completing the SIP form of the Valcom Gateway, is more likely required if the Valcom gateway is initiating audio (talkback).

The following example shows an extension being defined using the **Add** button. The desired phone number is entered into the **Extension** field. An optional description may be entered in the **Description** field. Please refer to the previous *SIP Mode – Station* section for a discussion of the Night Ring, Pre-Announce Tone and other available settings.

The following example shows a range of extensions being defined using the **Add Range** button. The desired beginning phone number is entered into the **Lower Extension** field and the ending phone number is entered into the **Upper Extension** field. If any of the optional selections, such as Night Ring or Audio Groups are selected, those options will be applied to all of the extensions in the range. Please refer to the previous *SIP Mode – Station* section for a discussion of the Night Ring, Pre-Announce Tone and other available settings. After a range of extensions are defined, they may be edited individually from the main SIP tab to edit items such as the Description, or to modify any of the other options.

Device Properties
Nortel Tab

The Valcom VIP-892 Nortel Trunk device provides paging to Nortel IP telephones. Up to 50 IP telephones can be serviced by one VIP-892. Multiple devices may be programmed to handle larger numbers of telephones. A maximum of 9 Nortel paging groups are available, using a single digit dial code 1 through 9. Valcom paging groups can be mapped to the Nortel groups to allow simultaneous paging to other Valcom devices. The Nortel IP telephone's XAS address must be set to the IP address of the VIP-892, and graphical mode must be disabled.

The VIP-892 does not use broadcast or multicast communication, so all of the configured phones must be connected to the same local subnet. Multiple VIP-892 units (in different subnets) can be configured to communicate with each other to span multiple subnets. Contact Valcom Technical Support for more information.

- **Mac Number** . is the MAC address of a Nortel telephone that will be paged to from this VIP-892 device. Do not separate the bytes with colons or dashes.

- **Description** . is an optional identifier of the device for internal reference.

- **Page Groups** . provides the selection of Nortel page group(s) to which this telephone will belong. Any combination of groups may be assigned to a Nortel phone by clicking the box by the number of group. The **All** or **None** buttons may be used to select, or deselect, all or none of the groups, respectively.

After making all of the appropriate entries, click the **Add** button. The telephone will be entered into the table. Continue adding telephone MAC addresses as needed.

The telephones listed in the table will be processed by this VIP-892. The Nortel Page Group membership of each telephone is shown in the columns labeled 1 to 9. If an existing entry requires changing, click the telephone entry in the table to highlight it. The information from that line will be copied to the appropriate fields, where changes can be made. After making the necessary changes, click the **Update** button to have the new information updated in the table.

To delete a single Nortel phone from the list, highlight the phone in the table, then click the **Delete** button. To remove all of the entries, click the **Delete All** button.   A confirmation will be presented to complete the removal.

To allow paging simultaneously to Valcom IP page groups, the Nortel groups may be mapped to Valcom groups. Click the **Mappings** button on the Nortel tab to open the dialog box shown below. Each Nortel group may have one Valcom group mapped to it. Use the drop down list box on each line to select the Valcom page group to be associated with a Nortel group. When a page is sent to a Nortel group, the mapped Valcom group will also receive the page.

Make all desired mappings in the Nortel Group Mappings window, then click the **OK** button to save the changes. Click the **Cancel** button to dismiss the box without making any changes. The **Clear All** button will remove all mappings.

The **Settings** dialog box (shown below) provides the ability to adjust the **Page Timer**. The Page Timer setting controls the maximum duration (in seconds) of a page. The VIP-892 will force a disconnect when the number of

Nortel Group Mappings

Nortel Group	Associated Audio Group
1	599 - Hallway 2nd Floor
2	599 - Hallway 2nd Floor
3	767 - Hallway Basement
4	889 - VIP-204 group (for analog out)
5	987 - Important Message
6	None
7	None
8	None
9	None

[Clear All]   [OK]   [Cancel]

seconds specified in the Page Timer field has elapsed. The default is 20 seconds, with a maximum of 60 seconds.

Device Properties
Routing Tab (VEUTM)

This tab only appears if you have a VEUTM Unicast to Multicast Router. It is designed for situations where enabling multicast on the WAN is not desirable. The device transmits multicast traffic from one segment of a network to other segments of the network via unicast.

Under the File→Network Tool Settings make sure to enable the option to **Include Router Port** in Unicast Scans. Each VEUTM must be assigned an IP address that is appropriate for the segment of the network it which it will be deployed.

Select one VEUTM and then click on the **Routing** tab. If your system is not using the standard Valcom multicast address press **Edit** to set up the source/destination routing configuration. If your system is using the standard Valcom multicast address then no editing is required.

In any case, click the **Configuration Wizard.**
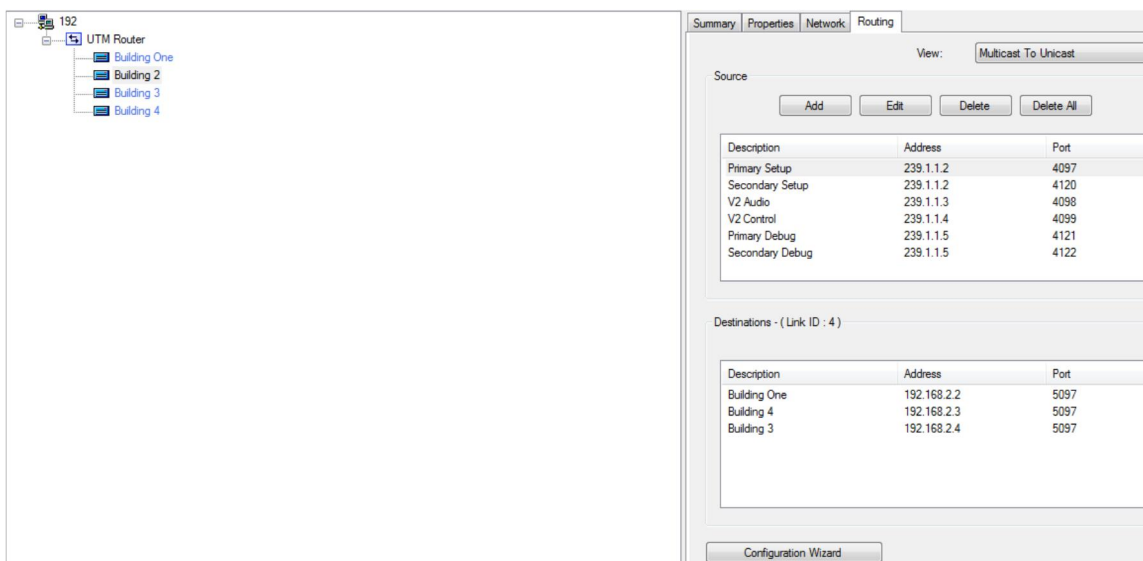
Select all of the standard multicast addresses for which routes should be created. Router ports may be changed as necessary, however, should be unique.
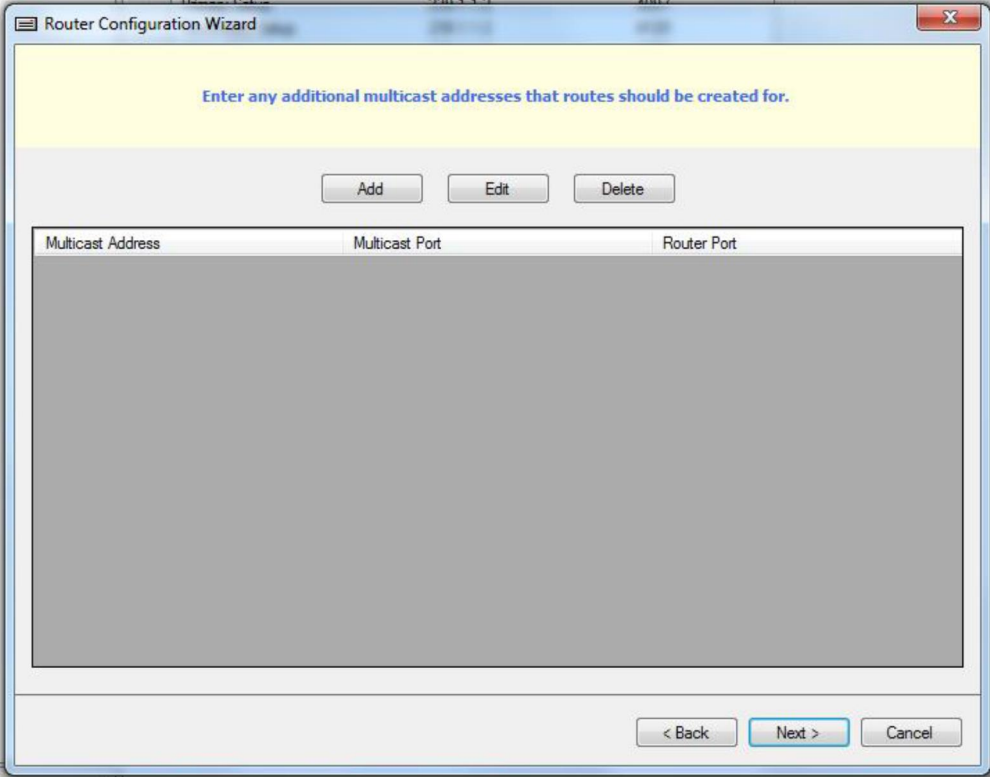
Router Configuration Wizard

Select all of the standard multicast addresses that routes should be created for.
Router Port values may be changed as necessary, but should be unique.

| All | None | | Default Router Ports |

	Description	Multicast Address	Multicast Port	Router Port
☑	V2 Control	239.1.1.4	4099	5099
☑	V2 Audio	239.1.1.3	4098	5098
☑	Primary Setup	239.1.1.2	4097	5097
☑	Secondary Setup	239.1.1.2	4120	5120
☑	Primary Debug	239.1.1.5	4121	5121
☑	Secondary Debug	239.1.1.5	4122	5122

| < Back | Next > | Cancel |

Click **Next**

Enter any additional multicast address for which routes should be created. One example would be multicast addresses used by the VE6023 Telephone Paging Server.
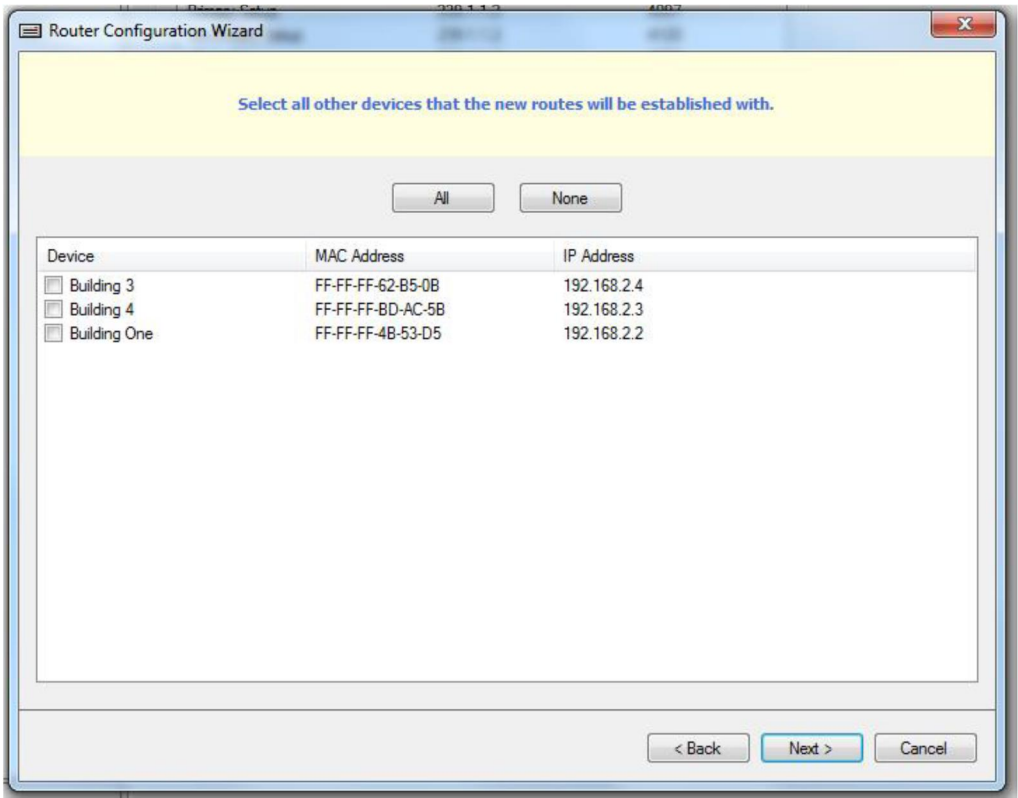

Click **Next**

Select all other VEUTMs with which you intend to establish routes (typically all)

Click **Next**

- **Remove all existing routes before new routes are created--**When checked, existing routes will be removed before new routes are created.

- **Only configure routes on the current device itself--**When checked, routes will be configured on the current device and other VEUTMs will remain unchanged.

- **Create a mesh of routes between all selected devices--**When checked, this option will cause routes to be created between all selected VEUTMs. Audio originated from any network segment will be routable to any other network segment.

- **Use local values on each device for standard addresses if different--**When checked, if a selected VEUTM has different values for the standard addresses, those values will be used instead of the values from the current VEUTM

Click **Finish**

Examples when VEUTM A routing tab is being used for programming and VEUTM B and VEUTM C are selected to establish routes
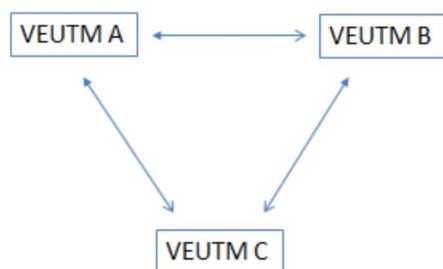
VEUTM A ◄──────► VEUTM B

VEUTM C

☐ Remove all existing routes before new routes are created

☐ Only configure routes on the current device itself

☑ Create a mesh of routes between all selected devices

☑ Use local values on each device for standard addresses if different

Audio originated from A, B or C can be broadcast to A, B or C
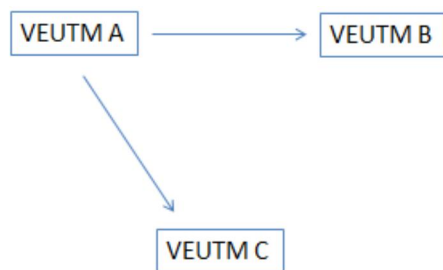
VEUTM A ──────► VEUTM B

VEUTM C

☐ Remove all existing routes before new routes are created

☐ Only configure routes on the current device itself

☐ Create a mesh of routes between all selected devices

☑ Use local values on each device for standard addresses if different

Audio originated from A can be Broadcast to A, B or C

Additional programming using the VIP-102B routing tabs of VEUTM B and C may be used to establish additional routes to allow audio origination from any network segment to any network segment.

Once routes have successfully been created, click **Close** then perform the Update Changed Devices function to update all the VEUTMs.

Device	Source	Destination	Result
Building 2	239.1.1.4 : 4099	192.168.2.4 : 5099	Exists
Building 2	239.1.1.4 : 4099	192.168.2.3 : 5099	Exists
Building 2	239.1.1.4 : 4099	192.168.2.2 : 5099	Exists
Building 2	Any Address : 5099	239.1.1.4 : 4099	Exists
Building 2	239.1.1.3 : 4098	192.168.2.4 : 5098	Exists
Building 2	239.1.1.3 : 4098	192.168.2.3 : 5098	Exists
Building 2	239.1.1.3 : 4098	192.168.2.2 : 5098	Exists
Building 2	Any Address : 5098	239.1.1.3 : 4098	Exists
Building 2	239.1.1.2 : 4097	192.168.2.4 : 5097	Exists
Building 2	239.1.1.2 : 4097	192.168.2.3 : 5097	Exists
Building 2	239.1.1.2 : 4097	192.168.2.2 : 5097	Exists
Building 2	Any Address : 5097	239.1.1.2 : 4097	Exists
Building 2	239.1.1.2 : 4120	192.168.2.4 : 5120	Exists
Building 2	239.1.1.2 : 4120	192.168.2.3 : 5120	Exists
Building 2	239.1.1.2 : 4120	192.168.2.2 : 5120	Exists
Building 2	Any Address : 5120	239.1.1.2 : 4120	Exists

Router Configuration Wizard

All required routes have been properly configured.

Show Failures Only

< Back   Finish   Close