GLOBALCOM 5400 Series Designer User Manual
(w/ Device Configuration Tool)

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Innovative Electronic Designs, LLC
9701 Taylorsville Road
Louisville, KY 40299
United States of America
www.iedaudio.com

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Innovative Electronic Designs, LLC   +1.502.267.7436 phone
9701 Taylorsville Road   +1.502.267.9070 fax
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GLOBALCOM 5400 Designer User Manual

1.   GLOBALCOM 5400 Designer Overview

1.1   Introduction

This user manual is divided into the following chapters:

- **Main Window and Menus** – An overview of the main window and menu functions.

- **Action Types** – How actions are defined in the 5400 Designer.

- **Configuration Pages** – Details on each of the configuration pages used to define a system

- **Device Configuration Tool** – Details on using the Device Configuration Tool (DCT) to link a system design to actual hardware devices.

1.2   Defining a New System

When designing a new system from scratch the suggested order of operations is as follows:

1. Define network settings (initial pop-up)

2. Define default volume levels for device zones.

3. Define Recorded Message Library (import WAV files to be used in Actions)

4. Define any pre-/post-announce chimes (General Settings --> Chime Selection)

5. Define the System Devices

6. Set up the Paging Zones (e.g., assign names, enable zones, set alarm delay)

7. Define Zone Groups (collections of Zones for actions)

8. Define Alarms, if any

9. Define Logic Input Triggers, if any

10. Define 5416/5450CS paging station templates

11. Define paging station users, if any

12. Assign (default) templates to 5416/5450CS paging stations

13. Define Scheduled Events, if any

14. Define background music default routing.

If one is online with the actual equipment (or at a later time when one is):

15. Run the Device Configuration Tool (match up project devices with real-world devices)

16. Upload the project to the 5400ACS controller.

2.   Main Window and Menus

2.1   Introduction

This chapter covers the user of the GLOBALCOM 5400 Series Designer tool, which is used to configure a system. Prior to using this tool, it may be necessary for some devices to be initialized using the GLOBALCOM 5400 Series Device Configuration Tool described in Appendix C, changing default factory device settings to settings needed for incorporation into the system, such as setting a network IP address that allows the device to communicate with other devices on the system network.

The main window Designer is as shown in Figure 2-1.
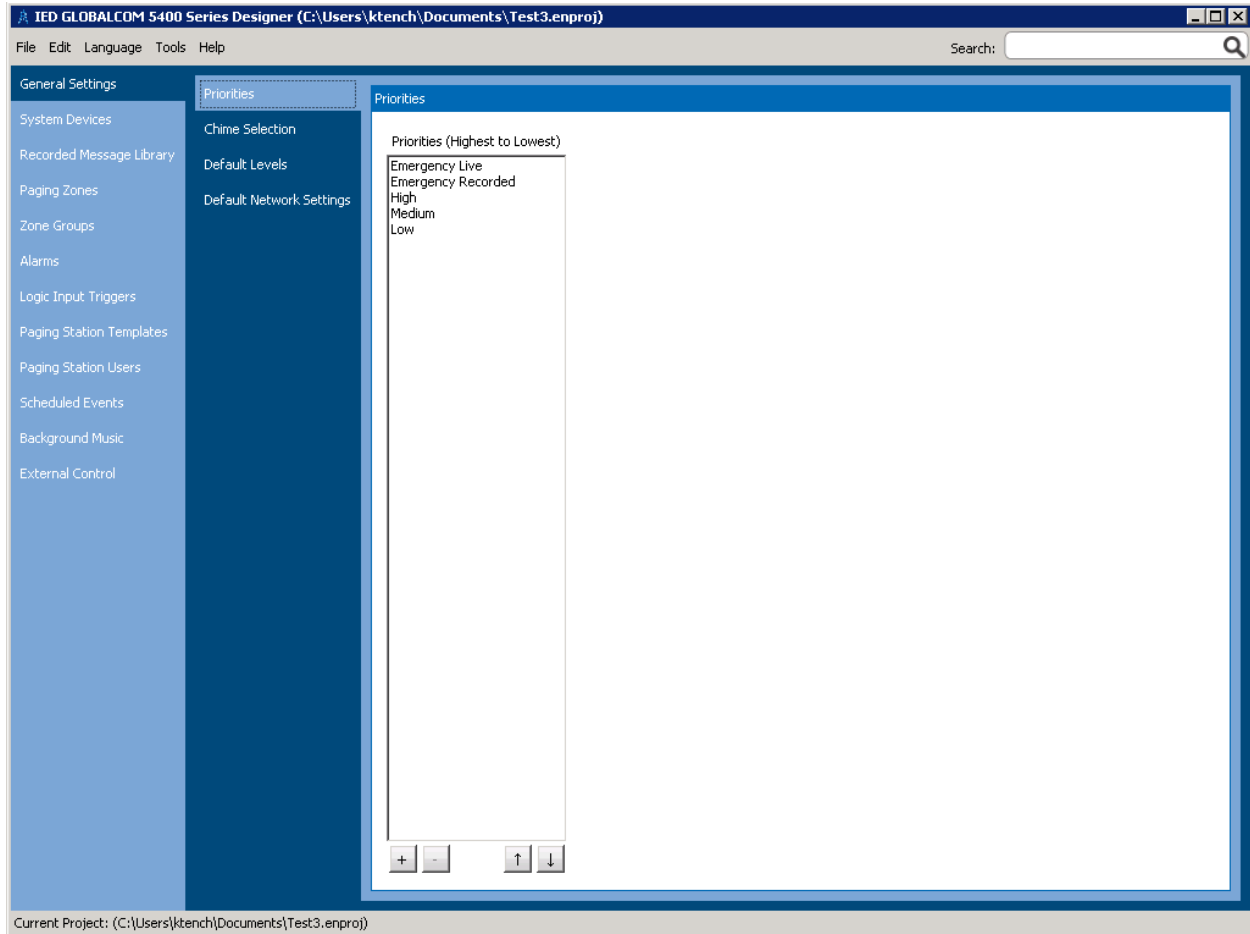
Figure 2-1:   GLOBALCOM 5400 Series Designer Main Window

Setting up a system for the first time, generally entails creating a new project file via the option on the startup window or via the menu choices. Then, one works through all the sections that apply to this installation in the order listed on the left-hand side in Figure 4-1. Details of all these functions and pages are covered in the sections which follow.

2.2   Startup Window

When the GLOBLACOM-en Designer is first launched, it shows the Startup window such as in the example in Figure 2-2 below. In the example, shown there was only one recent file. If there were multiple recent files, up to 5, these will all be displayed under the "Recent Files" heading. Of course, if

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there are no recent files (e.g., Designer was just installed on the system), then nothing will display beneath the "Recent Files" heading. One can select the desired language for the 5400 Designer application in the drop list box at lower right. For example, selecting Deutsch changes the appearance as shown at right.

Figure 2-2:   Designer Startup Window

One may either select one of the recent files or click on the other three options listed (**Create New Project**, **Open Existing from Disk** and **Open Project from Controller**). The **Create New Project** option will first prompt for baseline project network settings via the Baseline Information pop-up as shown in Figure 2-3. One must fill in the starting and ending IP address range as well as the Subnet Mask at a minimum. The gateway (default router) property is optional, and is only required if one must span routers or virtual private networks (e.g., for multi-controller systems).
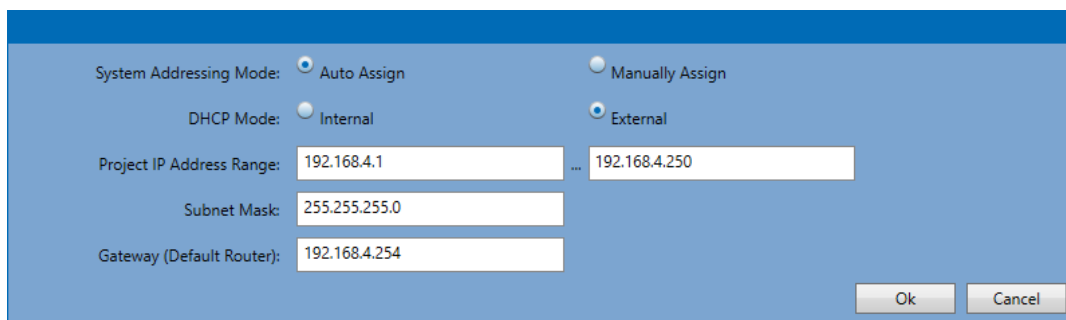
Figure 2-3:   Baseline Information Window

The system always uses fixed addressing, however there are two System Addressing Modes available in Designer that determine how the fixed addresses are assigned to devices:

- **Auto Assign mode** – in this mode, the software will assign all the IP addresses, generally to the same value that was dynamically assigned by a DHCP server on the network.

- **Manually Assign** – the user must select all IP addresses. When in this mode the "Project IP Address Range" setting changes to "DHCP Provisioning Range". This range should be set to a range of temporary addresses which may be used to attain communications with the device. This range *should not overlap* with the permanent address range used for the manual assignments, or conflicts can arise.

Also, some installations may be on an existing network that already has a DHCP server for the dynamic addresses. In this case the External DHCP Mode should be selected. Otherwise, one should select Internal DHCP Mode to enable the 5400ACS internal DHCP server.

Selecting the **Open Project from Disk** option will open a Windows standard file open dialog box for selecting the file and its location on the system storage. Selecting the **Open Project from Controller** option will first prompt for an IP address of the Controller to upload data from, as shown in the pop-up at right. After entering an IP address, Designer will attempt to upload a project and will then prompt for a filename to save it under.
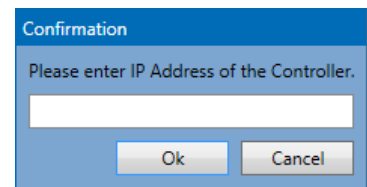
2.3   Main Menu Functions

The menu bar in Designer appears as in Figure 2-4.
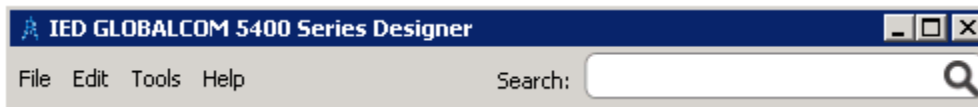
Figure 2-4:   Designer Menu Bar

The search function is where one can type either a term like "zone" or a word that appears in the description of any device, zone, zone group or other entity in a project and be presented with options to jump to the relevant section of the Designer tool to view or edit. Each of the menus and their functions are described in more detail in the subsections which follow. Figure 2-5 below shows an example where the user has loaded a project dealing with a factory installation and has started to type the word "factory". Just like search engines on the Internet, Designer matches text to what has been typed so far (in this case, just "fac") and shows the options. The user can click on one of the listed search options to be taken directly to the page and device/zone for viewing or editing.
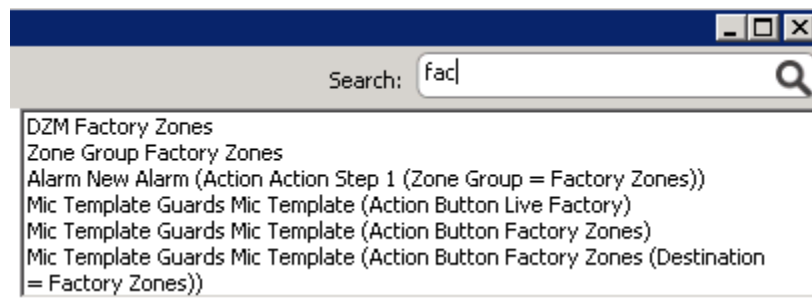
Figure 2-5:   Designer Search Example

2.3.1   File Menu Functions

The choices for functions under the File Menu are shown in Figure 2-6 and are described in the text below. In these descriptions keyboard shortcuts are listed. A shortcut of "Ctrl+N" means press and hold down the Ctrl key (usually below the shift key on a keyboard) and then press the "N" key.
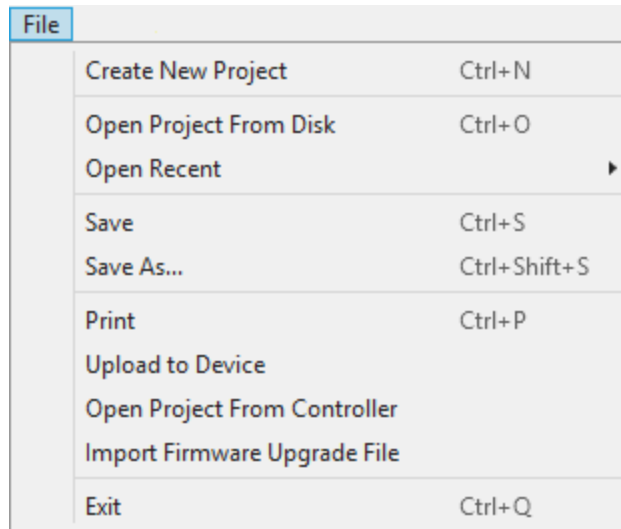
Figure 2-6:   Designer File Menu

Create New Project   Create a new project from scratch. Keyboard shortcut is Ctrl+N.

Open Project From Disk   Open an existing project. Keyboard shortcut is Ctrl+O.

Open Recent   Open a recently opened project. These are listed in a sub-menu that appears to the right of the File menu.

Save   Save the currently open project to its designated file. Keyboard shortcut is Ctrl+S.

Save As…   Save the currently open project in a different file, i.e., make a copy. Keyboard shortcut is Ctrl+Shift+S.

Print   Print the complete system definition. Keyboard shortcut is Ctrl+P. When selected, this brings up a Print System preview window such as the example below. From this preview window one may press **Print** to actually print it, **Save** to save it as an .XPS file for printing later or elsewhere, or **Cancel** to close the preview window.
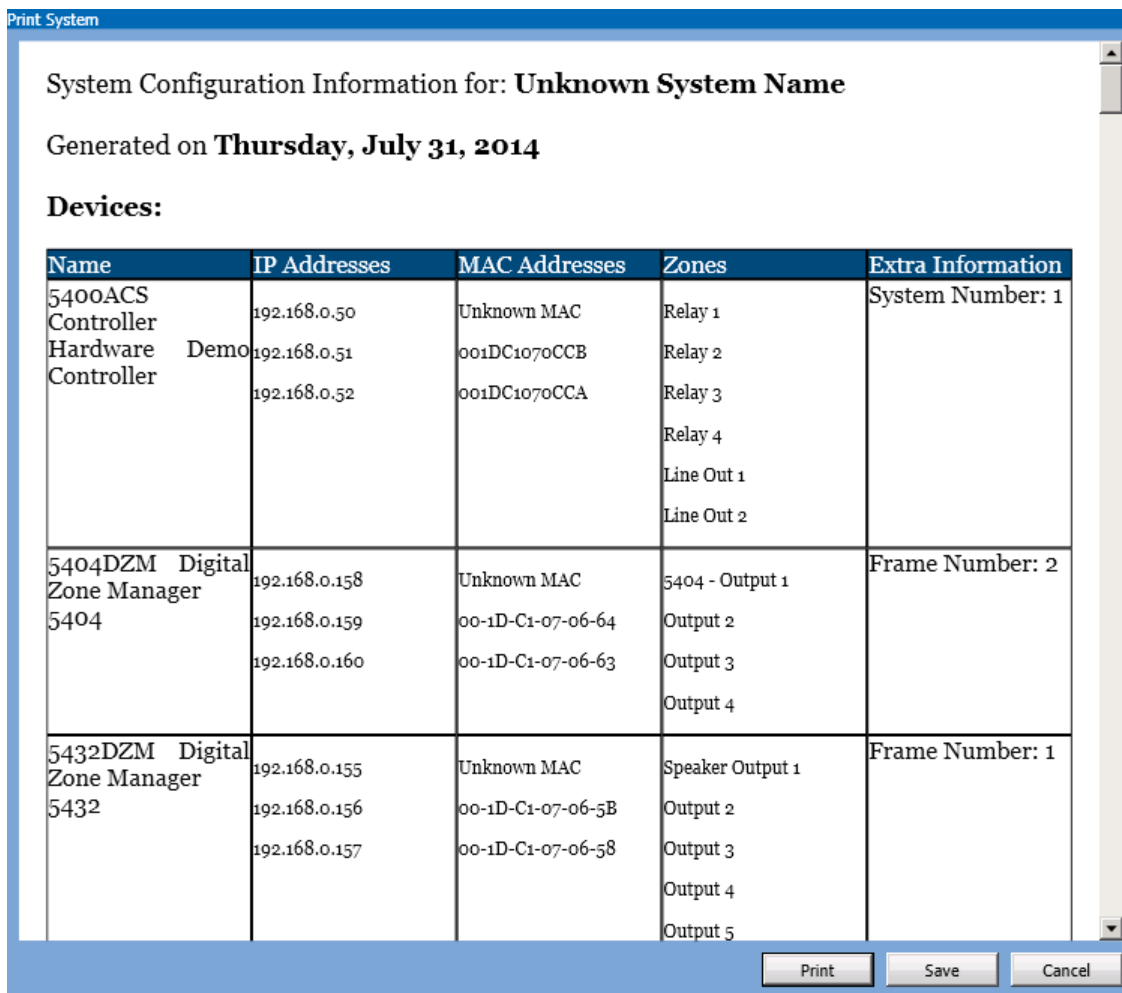
Figure 2-7:   Sample Print Preview Window

Upload to Device   Upload the current project to the 5400ACS controller. When pressed, the program verifies that all settings needed are provided and that there are no conflicts between settings, such as defined multiple devices to be the same device ID or same network address. If any such error condition is found, error pop-ups such as those shown below may appear.
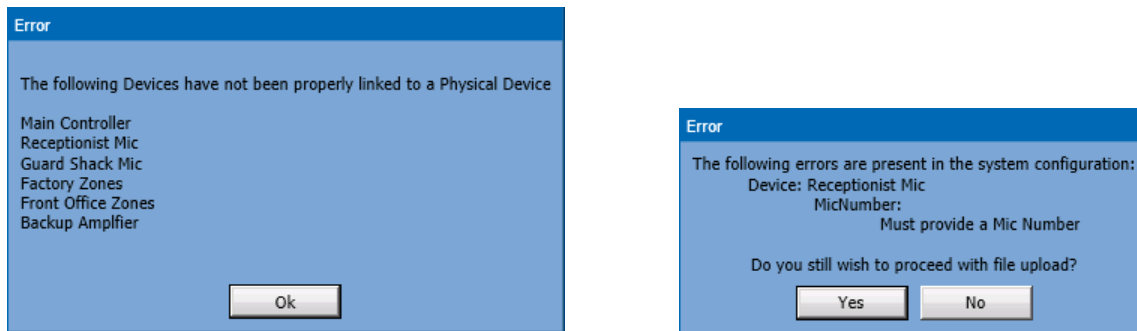
Figure 2-8:   Designer Upload Error Message Examples

Any errors such as those shown at right will have red error boxes on the affected property such as the example shown below (Mic Number is zero/blank).
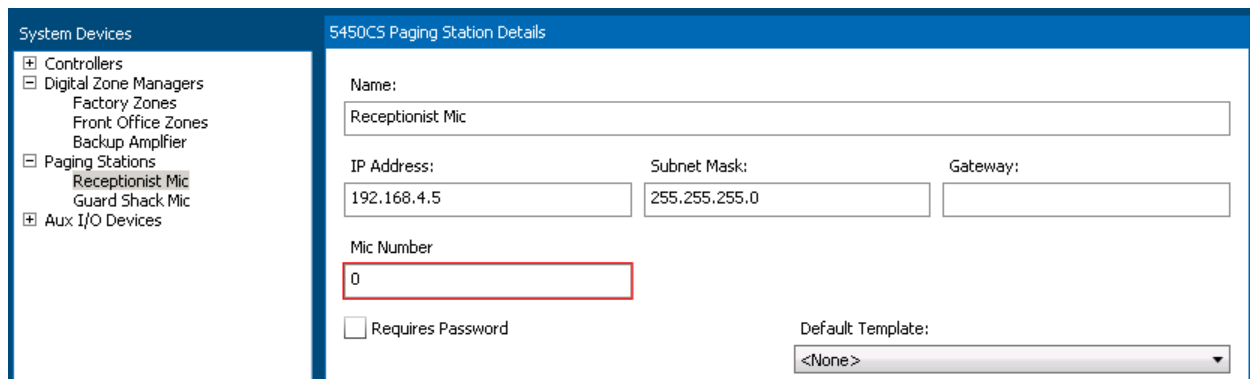
Figure 2-9:   Designer Error Indication on Edit Box

If the upload operation is successful or not, the result will be shown in another pop-up box such as the one below.
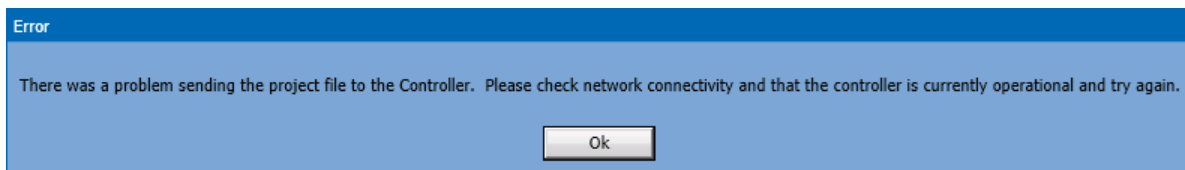
Figure 2-10:   Designer Upload Failure Example

Open Project from Controller Download from the 5400ACS controller and populate the current project with data from the device. This is a way of recovering the project file, should it be lost.

Import Firmware File   Load an updated firmware file for a type of device into the Designers library area.

Exit   Close the Designer application. If the changes to the open project have not be saved, the user will be prompted to save first. Keyboard shortcut is Ctrl+Q.

2.3.2   Edit Menu Functions

The choices for functions under the Edit Menu are shown in Figure 2-11 and are described in the text below. In practice, not all Edit Menu functions will be enabled at the same time. Disabled functions will be shown in gray text rather than black as seen in the figure. For example, if no changes have been made, Undo will not be enabled; if no text/numbers are selected in any of the properties, then Cut and Copy will not be enabled; if nothing is on the clipboard, then Paste will not be enabled, etc.

The most important distinction is that Delete and Duplicate options only apply at a whole item level. That is, when something is selected in one of the tree views, like a device or a zones or zone group. These functions can then be used to remove the item (e.g., device) or create a duplicate one.
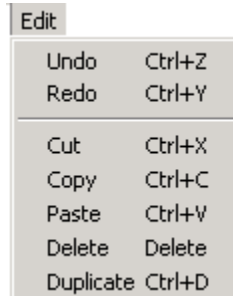
Figure 2-11:   Designer Edit Menu

Undo   Reverse the last edit action (keystrokes, cut, paste) and put the property field back to the way it was before any edits. Keyboard shortcut is Ctrl+Z.

Redo   Undo the last Undo action. Keyboard shortcut is Ctrl+Y.

Cut   Send the selected text to the Windows clipboard and remove it from the property. Keyboard shortcut is Ctrl+X.

Copy   Copy the selected text to the Windows clipboard. Keyboard shortcut is Ctrl+C.

Paste   Paste the current Windows clipboard contents into the property field at the current cursor location. Keyboard shortcut is Ctrl+V.

Delete   Delete the currently selected item in the list view. Keyboard shortcut is the [Del] key. Designer will prompt with a Yes/No confirmation dialog box before actually deleting the item.

Duplicate   Make a copy of the selected item in the list view. This new item will be given a slightly different name by appending an instance counter, e.g., a duplicate of "Factory Zones" would appear as "Factory Zones (2)". Keyboard shortcut is Ctrl+D.

2.3.3   Tools Menu Functions

The Tools Menu has the functions shown in Figure 2-13 and explained in the text which follows.
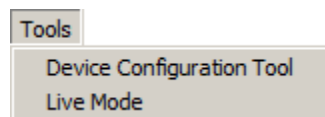
Figure 2-13:   Designer Tools Menu

Device Configuration Tool   Call up the Device Configuration Tool (covered in Appendix C).

Live Mode   While the system is in this mode, changes to such things as volume levels are immediately sent to the devices so that one may hear the effects before saving settings as defaults in the project file.

2.3.4   Help Menu Functions

The Help Menu functions are shown in Figure 2-14 and are explained in the text which follows.
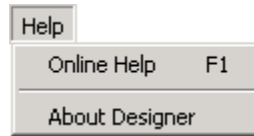
Figure 2-14:   Designer Help Menu

Online Help   Calls up an electronic version of this portion of the Users Manual. Keyboard shortcut is function key F1.

About Designer   Call up the About Dialog box which displays version information, such as in the example shown below in Figure 2-15.

Figure 2-15:   Designer About Dialog Box

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3.   Action Types (Action Definition)

A capability common to many configuration pages are defining actions to be taken in response to a stimulus like a contract closure or paging station button press. Alarms and Scheduled Events are also actions or particular types. This section defines the full capabilities of the 5400 system in handling different action types. Certain action types are not available for all stimuli conditions, so what one will see on a particular configuration page may be a subset of what is described below.

Defining an action begins with selecting the **Action Type** property for a device or stimulus condition on a configuration page. Action Type is always presented as a drop list that allows selection of the type of action, such as that shown in Figure 3-1.
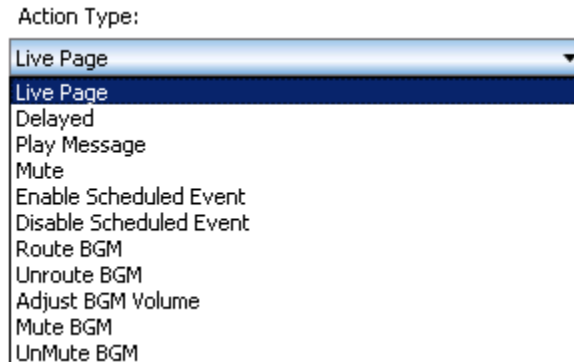
Figure 3-1:   Action Type Drop list

The possible action types available are:

- **Live Page** – Route audio from a source to designated zone group.

- **Delayed** – Record from the paging station and playback to designated zone group, optionally with repeats.

- **Play Message** – Play a pre-recorded message to designated zone group.

- **Mute** – Mute all audio in the zones of the designated zone group

- **Enable Scheduled Event** – Allow a scheduled event to run.

- **Disable Scheduled Event** – Block a scheduled event from running.

- **Route BGM** – Route a background music source to one or more zones.

- **Unroute BGM** – Disconnect background music from one or more zones.

- **Adjust BGM Volume** – Increase or decrease the volume level of background music on one or more zones.

- **Mute BGM** – Mute background music on one or more zones.

- **UnMute BGM** – UnMute background music on one or more zones.

Depending on the choice of action, the other controls/properties may change. The sections which follow describe these action types and what controls/properties are presented for each.

3.1   Live Page Action

A live page is when a source such as a paging station microphone is routed to the desired destination zones.

Figure 3-2:   Live Page Action Controls

Priority   This drop list is used to select the priority level for this action. These are defined under the General Settings page.

Destination   Select the destination for this action from this drop list.

Chime   Sound to use for the pre-announce chime. (Supported by 5450CS and 5416CS paging stations only.)

Post Chime   If checked, the pre-announce chime will be played after the live page *also.*

Audio Source   The audio source to route from. If the device itself can be an audio source, such as a paging station, then selecting <Self> means from itself. If instead, one is trying to route audio from another source, e.g., an aux input on the 5400ACS, then select that input as the Audio Source here.

3.2   Delayed Action

A delayed action is recorded at a paging station and then is played back when the recording is complete and the desired destination zones are available. Optionally, the playback can be repeated.

Figure 3-3:   Delayed Action Controls

Priority   This drop list is used to select the priority level for this action. These are defined under the General Settings page.

Destination   Select the destination for this action from this drop list.

Chime   Sound to use for the pre-announce chime before playing the page.

Post Chime   If checked, the pre-announce chime will be played after the page *also.*

Repeats   Number of times to repeat the playback. Zero indicates that the recording will only play once.

Repeat Interval   The time between repeats in minutes. The controls allow selection of whole and half minutes.

3.3   Mute Action

A Mute action will suppress audio below a certain priority level. It can be thought of as a live page with no audio source.
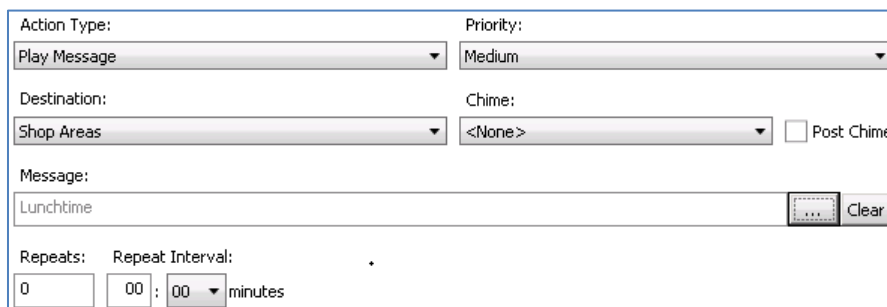
Figure 3-4:   Mute Action Controls

Priority   This drop list is used to select the priority level for this action. These are defined under the General Settings page.

Destination   Select the destination for this action from this drop list.

3.4   Play Message Action

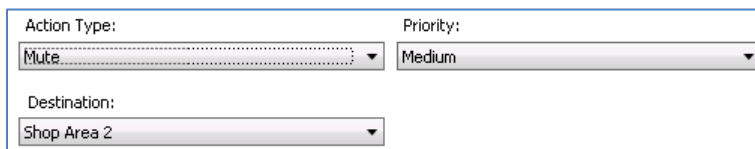The Play Message action is used to play a WAV file, optionally with repeats.

Figure 3-5:   Play Message Controls

Priority   This drop list is used to select the priority level for this action. These are defined under the General Settings page.

Destination   Select the destination for this action from this drop list.
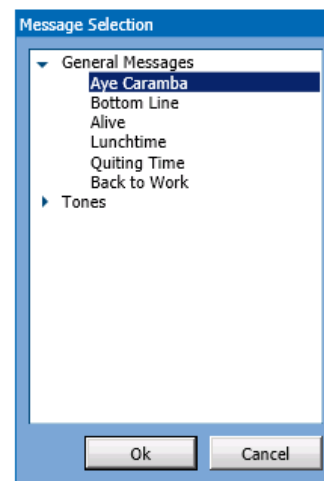
Chime   Sound to use for the pre-announce chime before playing the message file.

Post Chime   If checked, the pre-announce chime will be played after the message *also.*

Message   The message to play. Clicking on the […] button brings up a selector window such as is shown at right

Repeats   Number of times to repeat the playback. Zero indicates that the message will only play once.

Repeat Interval   The time between repeats in minutes. The controls allow selection of whole and half minutes.

Figure 3-6:   Message Selector Window

3.5   Enable/Disable Scheduled Event Action

The controls for enable and disable scheduled event appear the same, such as shown in the figure below.
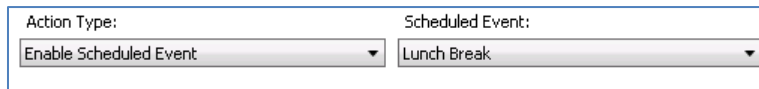
Figure 3-7:   Enable Schedule Event Action Controls

Scheduled Event   The event to enable/disable, selected from a drop list of defined scheduled
                    events.

3.6   Route BGM Action

The Route BGM Action type is used to connect a particular background music source to selected
destination zones.
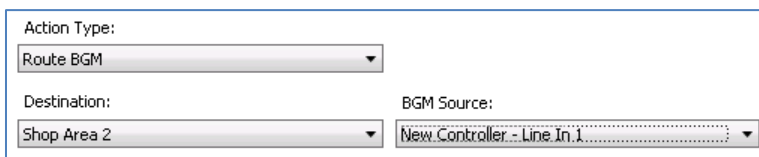
Figure 3-8:   Route BGM Action Controls

Zone Group   Select the destination for this action from this drop list.

BGM Source   Select the background music source to route from this drop list.

3.7   Unroute BGM Action

The Unroute BGM Action type is used to disconnect any background music source from selected
destination zones.
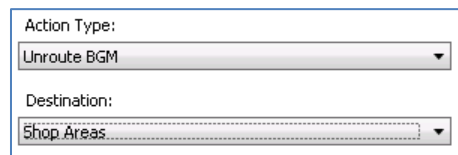
Figure 3-9:   Route BGM Action Controls

Zone Group   Select the destination for this action from this drop list.

3.8   Adjust BGM Volume Action

One may control the volume level of the background music in selected zones via this action.
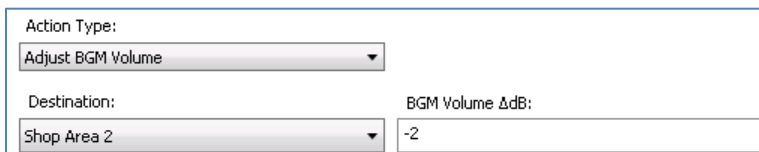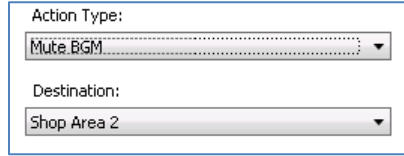
Figure 3-10:   Adjust BGM Volume Action Controls

Zone Group   Select the destination for this action from this drop list.

BGM Volume Δ   How much to adjust the volume by in dB (decibels).   This may be a negative or positive value.

3.9   Mute/UnMute BGM Action

The controls for mute and unmute BGM appear the same, such as shown in the figure below.

Figure 3-11:   Mute BGM Action Controls

Zone Group   Select the destination for this action.

4.   Configuration Pages

The configuration is divided into pages as shown along the left-hand side: General Settings, System Devices, etc. The sections below describe each of these configuration pages.

4.1   General Settings Page

There are three sections to the General Settings page: Announcement Priorities (see Figure 4-1), Pre-Announcement Chimes (see Figure 4-2), Default Levels (see Figure 4-4) and Network Settings (see Figure 4-5). Descriptions for fields in each of these sections are provided in the text below each figure.
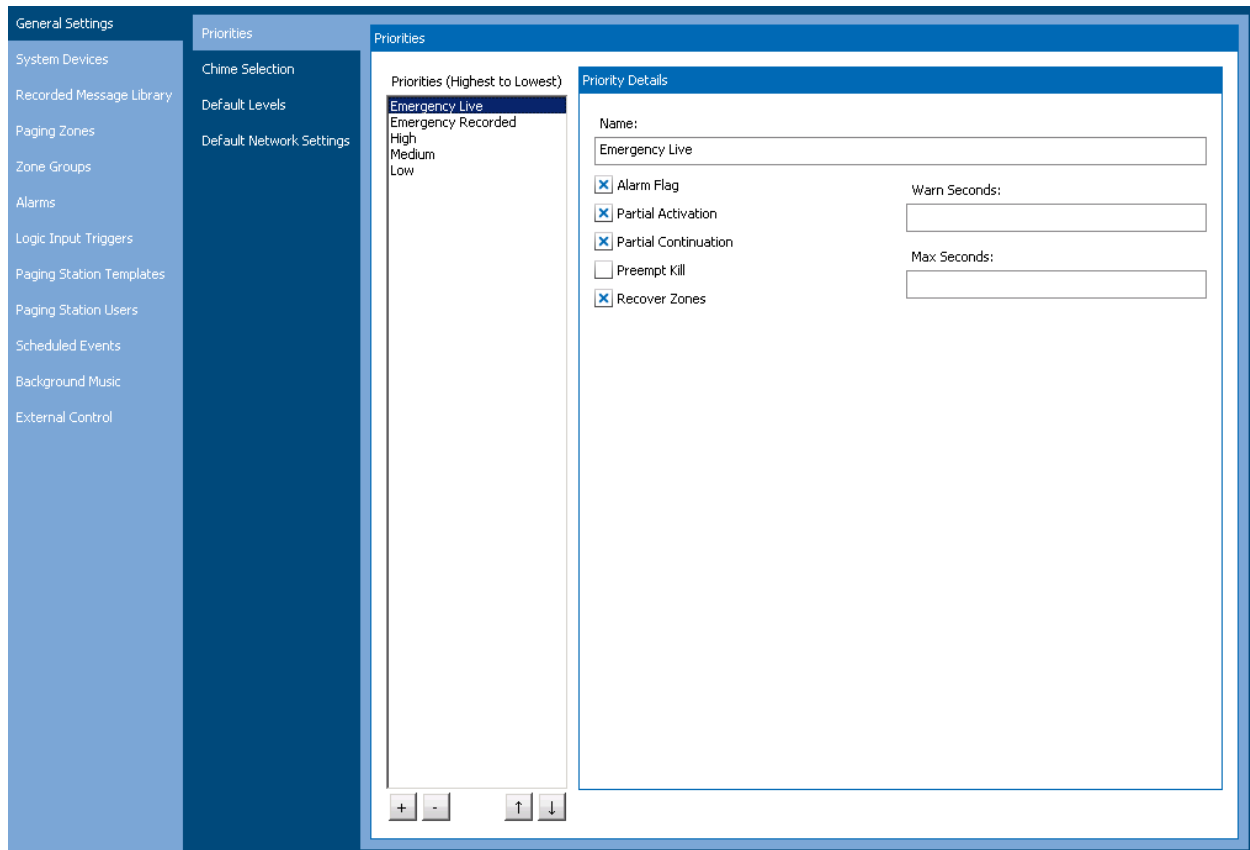
Figure 4-1:   General Settings – Announcement Priorities Section

The Priorities are shown in the list box in order with the highest priority on top. Priorities may be added or deleted and moved around via the following controls shown on the four buttons at the bottom of the list box.

[+] Click to add a priority to the list. By default the priority will be added to the bottom of the list with the name "New Priority". It can be renamed and moved up in the priority list via the other controls.

[-] Delete the currently selected priority level, after confirming this operation via a yes/no prompt box.

[↑] Move the currently selected priority level up one level higher (unless already at the top).

[↓] Move the currently selected priority level down one level (unless already at the bottom)

When a Priority is selected in the list box, its properties may be edited via the controls on the right, as described below.

Name   Name/Description to refer to this priority level.

Alarm Flag Whether this priority is for alarm type actions/events or not.

Partial Activation   A flag that indicates whether an announcement of this priority can start if not all its zones are currently available (e.g., in use by a higher priority announcement or alarm.

Partial Continuation   A flag that indicates whether an announcement of this priority can continue if some of its zones are preempted by a higher priority announcement or alarm.

Preempt Kill   A flag that indicates whether an announcement of this priority should completely stop when preempted or not (i.e., go back into the busy queue to wait for zones to become available again and then re-play).

Recover Zones   A flag that indicates whether zones lost by an announcement of this priority should be re-claimed by the announcement or not. This would only apply if the Partial Continuation flag is set.

Max Seconds   This is the maximum time for an announcement of this priority to be allowed to be active. This is a safe guard such as for externally signaled announcements where the communication link may fail and an announcement completion signal not be received.

Warn Seconds   For an announcement of this priority with a non-zero Max Seconds. This is the number of seconds before the end of the announcement to start warning a mic station operator (via blinking Ready LED) that the announcement time limit is close.
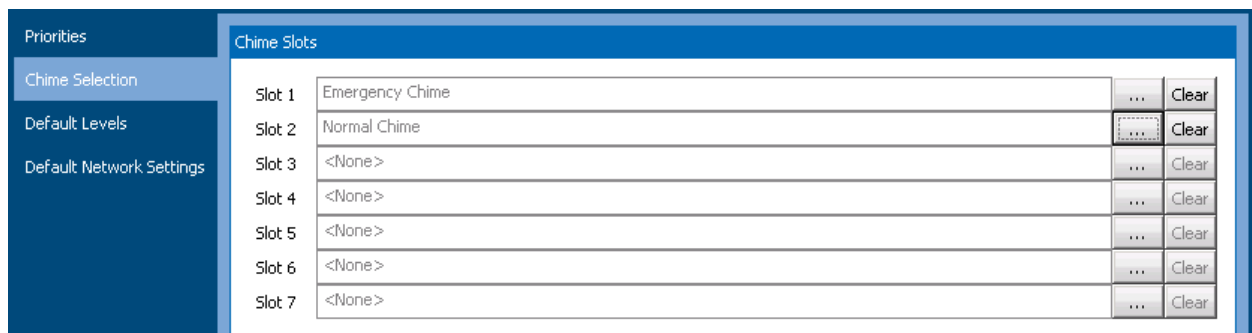
Figure 4-2:   General Settings – Pre-Announcement Chimes Section

There are seven chime slots that may be defined in the system. These chimes will then be available for assigning to announcements and alarms. One defines the contents of a slot by clicking on the **[…]** button to the right of each slot. The slot is cleared via the **[Clear]** button beside it. To fill in a slot, one clicks on the **[…]** button and this brings up the Take Selection pop-up shown in Figure 4-3.
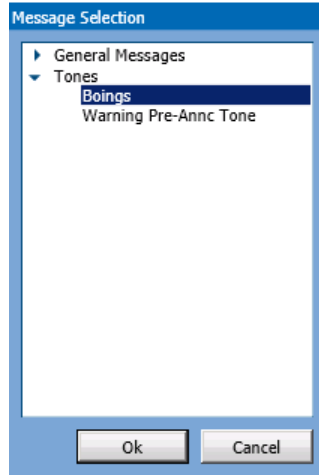
Figure 4-3:   General Settings – Take Selection Pop-up

One finds the desired Take by first expanding the group it is in by clicking on the ► icon beside the group name. (The group "Tones" is expanded in the example in Figure 4-3). Then, click on the desired Take ("Boings" in the example) and finally click on the **[OK]** button. A group can be collapsed by clicking on the ▼ icon beside the group name.
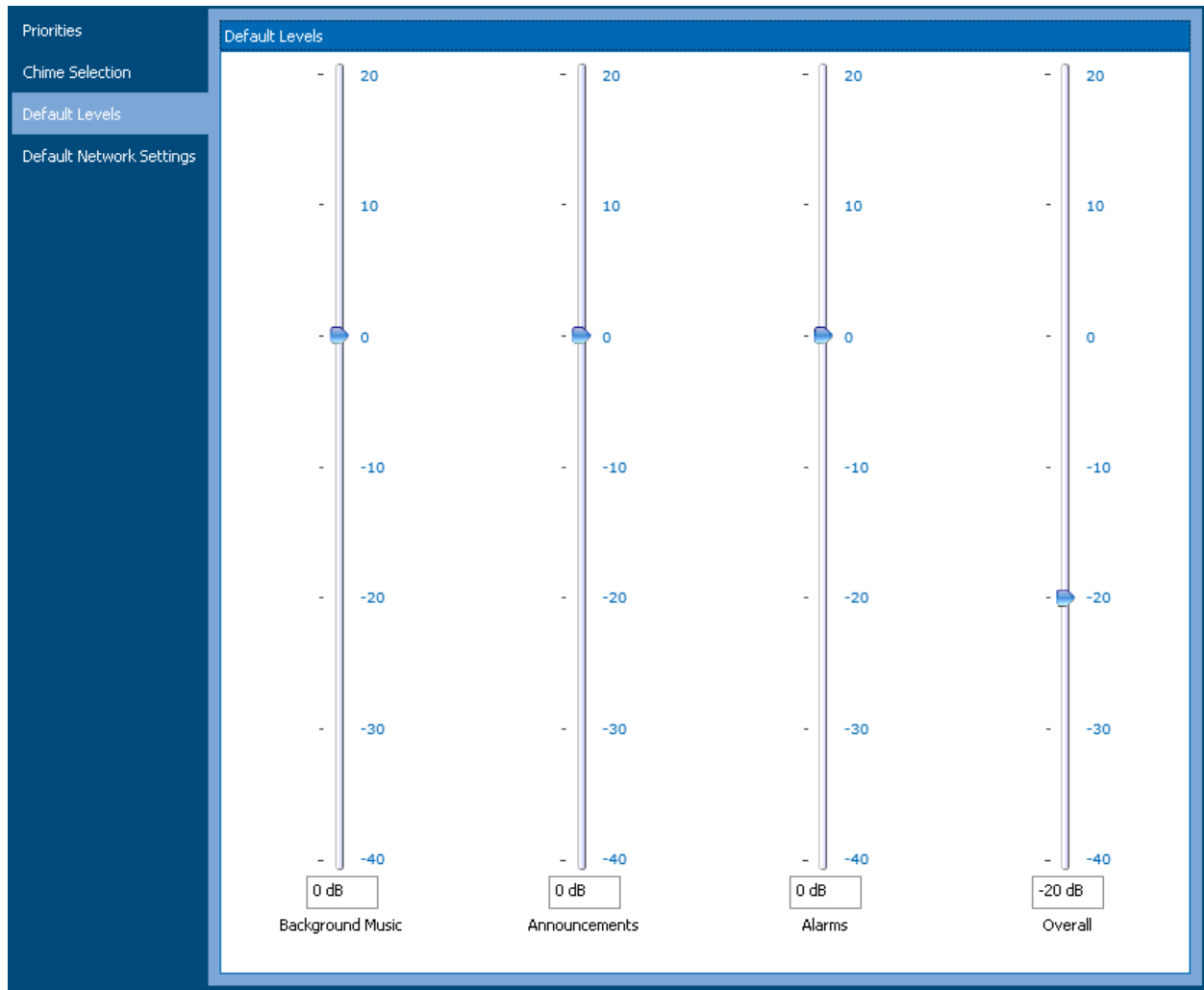
Figure 4-4:   General Settings – Default Levels Section

If the default levels are configured prior to adding any devices with zones to the project, then the levels defined here will be automatically applied to the new zones, possibly saving some tedious work of configuring every level on every zone. *Also, as long as zones are not changed from the defaults, coming back to this window and changing a level will change all zones currently "tied" to default levels.* The levels defined here are as follows. Levels may be changed either by dragging the slider up or down, or by entering a value in the edit box beneath each slider.

Background Music   The relative level of the background music input to a zone.

Announcements   The relative level of any non-alarm (non-emergency) announcements played to a zone.

Alarms   The relative level of alarms played to a zone (e.g., perhaps 6 dB higher than announcements)

Overall   The overall level for a zone before ambient compensation, if a zone has this feature enabled. Generally the gain structure is configured so that 0 dB on this level is max output of the power amp associated with this zone.

A zone's level is "tied" to the default level if on its slider display, the **Default** button is disabled (i.e.,

grayed out such as this [Default]). Every zone that is tied to the default levels will move when a

default level button slider is adjusted. If a zone is changed from the default, it becomes untied and the **Default** button will become enabled. If pressed, the level will change to the current default level *and* become tied to the level again.
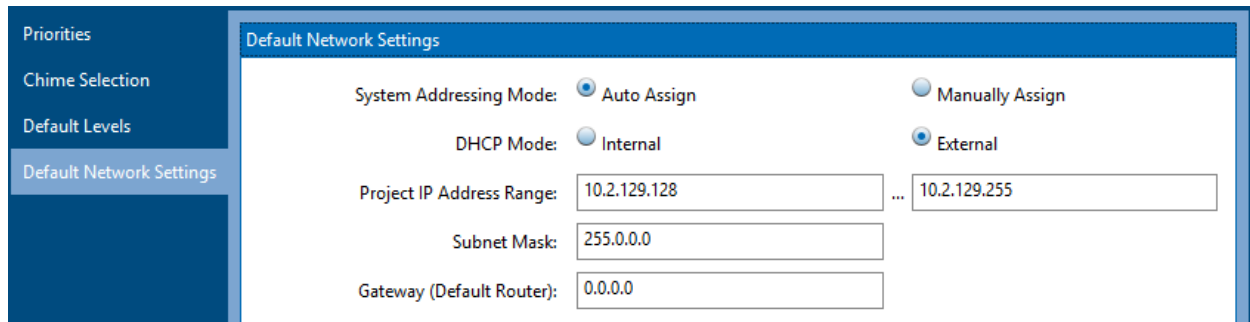
Figure 4-5:   Default Network Settings

These are the same settings that are prompted for when creating a new project. The settings available here are as follows:

System Addressing Mode   Whether the software auto assigns or the user manually assigns IP addresses to devices in the system.

DHCP Mode   Whether dynamic (temporary) addresses should be be assigned by a DHCP server internal to the Designer software or by an external one.

Project IP Address Range (1)   Starting IP address of those that may be assigned to devices in the system as permanent addresses.

Project IP Address Range (2)   Ending IP address of those that may be assigned to devices in the system as permanent addresses.

> Note: If **Manually Assign** addressing mode is selected, the above change to **DHCP Provisioning Range**, which is the range for temporary addressing, which should not overlap with the manually assigned IP address range to be used.

Subnet Mask   The subnet mask to assign to devices in the system

Gateway (Default Router)   The optional gateway (router) IP address to assign to devices in the system.

Innovative Electronic Designs, LLC   +1.502.267.7436 phone
9701 Taylorsville Road   +1.502.267.9070 fax
Louisville, KY 40299, USA   www.iedaudio.com
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4.2   System Devices Page

4.2.1   Introduction

The Systems Devices page is where all of the various pieces of equipment that make up a system (project file) are defined and configured. A key feature of this page is the System Devices list box as shown (truncated) in Figure 4-6.
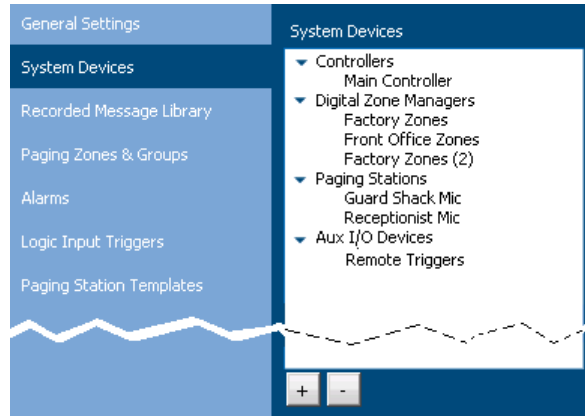
Figure 4-6:   System Devices List Box

There are four categories of devices:

- **Controllers** – The 5400ACS and optional 5400ACS Lifeline (backup controller). In addition, this is where one defines any remote controllers that communicate with this controller for multi-controller announcements.

- **Digital Zone Managers** – These are the devices that interface (analog) power amps into the digital audio system and supervise their outputs and speaker lines. Both main and backup DZMs are added to this group.

- **Paging Stations** – These are the operator interfaces devices for launching messages and making live pages in the system.

- **Aux I/O Devices** – These are auxiliary logic input and relay output type devices.

Devices are added and deleted via the **[+]** and **[-]** buttons at the bottom of the list box. Pressing the **[+]** button brings up an Add Device pop-up such as is shown in Figure 4-7.
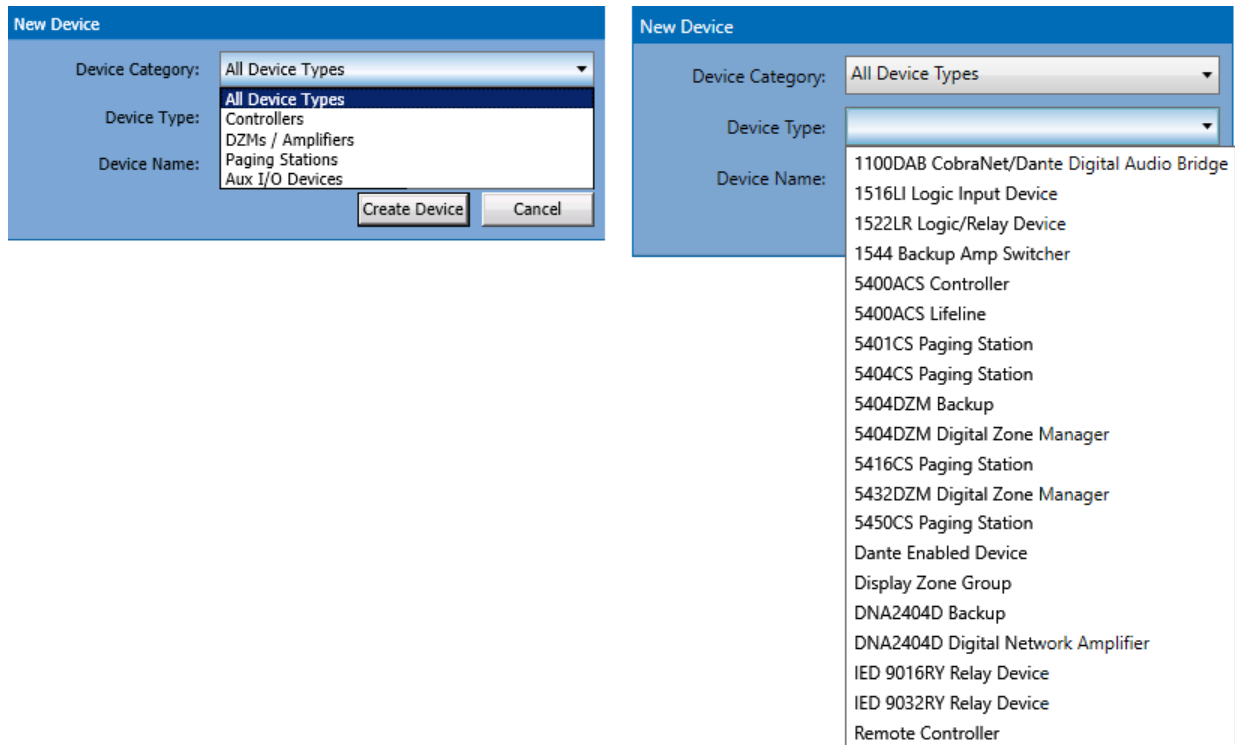
(with Device Category drop list open)   (with Device Type drop list open)

Figure 4-7:   New System Device Popup

One first selects which type of category of device via the top drop list (or All Device Types). By default, this will come up with the category that is currently selected in the list box. Then one selects the device type via the drop list "Device Type" and then fills in a name for the device in the "Device Name" edit box. When complete, click on the "Create Device" button to add this device to the system/project. The device will be added into the appropriate group in the System Devices list box.

Each device has its own set of properties that may be filled in as described in the following subsections.

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4.2.2   5400ACS Controller Details Page

The details page for a 5400ACS controller appears as in Figure 4-8. The fields/controls on this page are described below.

Figure 4-8:   5400ACS Controller Details Page

Name   Name/Description for this device.

IP Address Network address for this device

Audio IP 1/2   Network addresses of the two digital audio chips in the unit (read-only, assigned in Device Configuration Tool)

If Auto Assign mode applies to this system, then the IP address edit boxes are grayed out and are read-only. In Manually Assign mode, they are enabled.

System Number   The group number for this controller and all of its assigned peripherals/equipment. If more than one controller is on the same Local Area Network (LAN) these numbers must be unique between all controllers. Values can range between 1 and 32.

LCD Password   Numeric password to use to access Level 2 functions on the 5400ACS front panel LCD panel.

Fault Alert Tone Re-sound Time   How many hours after the fault alert tone is silenced will it resound (max 24 hrs).

Default Alarm Delay   For those zones without a specific/special alarm delay

defined, this is the delay value to use for zones in alarm delay.

Relay Output Functions   For each of the four available relay outputs of the 5400ACS, this control allows them to be configured as zone outputs (triggered with an announcement or alarm) or used to indicate controller/system status. The list of available options is shown below in Figure 4-9.
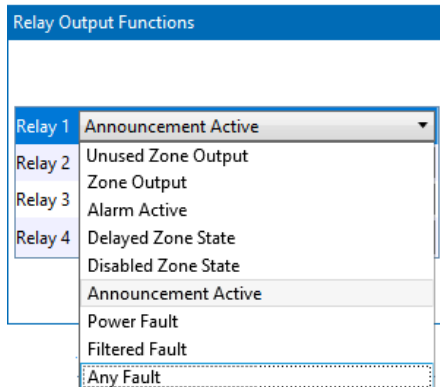

Figure 4-8b: Relay Output Options

The choices for Relay Output Options are:

- **Zone Output** – Use in an alarm or announcement like any other zone. Maybe added to Zone Groups.

- **Alarm Active** – Relay energized when an alarm is active in the system.

- **Delayed Zone State** – Relay energized when an alarm is active and is not yet playing to all zones due to delay state of some zones.

- **Disabled Zone State** – Relay energized when one or more zones are disabled.

- **Announcement Active** – Relay energized when one or more non-alarm announcements are active.

- **Power Fault** – Relay energized when there is a fault related to system power such as loss of mains power or an issue with the batteries.

- **Filtered Fault** – Relay energizes when the defined fault conditions occur. See below for more details on configuring this option.

- **Any Fault –** Relay energizes when there is any fault in the system. This is redundant with the dedicated fault relay, but may be necessary if one needs to signal to separate external systems

Supervised Logic Inputs   The checkbox for each of the eight available logic inputs determines whether the input is fully supervised for shorts and opens. This requires extra external components (resistors) as described in the Connections subsection of the 5400ACS.
Beside the checkbox is the name (label) for the logic input, which can be edited here to make it clearer elsewhere in the configuration what this input is intended for.

IEDNet+ Transmitters In multi-controller systems this defines the layer 3 audio transport channels to use when sending multicast audio data from this controller. These items are entered in-situ in the grid area shown.

If one designates a relay output for Filtered Faults, a new "Triggers" button appears as shown at right. Clicking on this on this brings up a pop-up window for defining which fault conditions will trigger this relay as shown in Figure 4-8c below.

One can define multiple filters for faults to trigger a relay via the selections at the top. One can either *either* the Device Type or the specific Device. (Selecting one will reset the other condition to <Any>. And, then one can further filter by selecting specific fault conditions for the selected Device Type or specific Device. The filter condition is added to this relay via the **Add** button at top right. In the example shown, the triggers are microphone element faults on either the touch screen or 16-button type mic stations. Filter conditions can be deleted by selecting them

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in the list and then pressing the [-] delete button at the bottom left of the list box. Pressing the **OK** button saves the filter conditions and closes the pop-up window.

Figure 4-8c: Filtered Fault Definition Window

If one adds a lifeline controller to the system, the only properties available for edit is the Name (which could be a description, where the frame is located in the facility, etc.) and if IP Address information is Manually Assign mode is in effect for this project. This placeholder device is used in Device Discovery Tool to match up to an actual 5400ACS controller that will serve as the backup. All the settings for the main controller (relay functions, logic input functions, etc.) will be applied to the Lifeline controller when it takes over for the main controller.
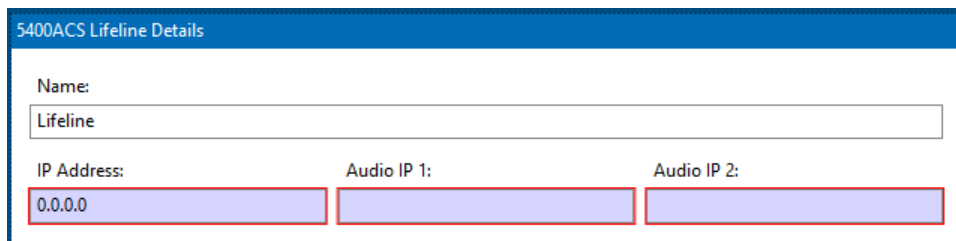
Note: The assumed mapping of all logic input functions to the Lifeline controller means that if these inputs are supervised and are <u>not</u> connected to actual devices, then appropriate resistors should be applied to the inputs so as to not get any open-circuit faults when the Lifeline takes over. (Or perhaps the presence of these faults is OK as a reminder that the system is not running in a fully operational state, and logic input trigger functions will not work presently.)

4.2.3　Remote Controller Details

The 5400ACS can be configured to communicate with either another 5400ACS or with a GLOBALCOM.IP controller such as a 1200ACS or IP10x series controller. In order to communicate with a remote controller, *this* controller needs to know a little bit about the remote controller. This information is provided on the details window as shown below in Figure 4-9.

Figure 4-9:　Remote Controller Details Page

Name　Name/Description for this device.

Primary IP　Network address for this device.

Backup IP　Address of device's lifeline controller.

Audio Transport Type　How audio gets from this remote system to our controller. The choices are:

- Dante – A Dante bridge (e.g., 1100DAB) device is used to pass audio from one network to another.

- IEDNet+ Multicast – When audio is sent to this remote controller, it is done via layer 3 Real-Time Protocol using the settings in *this controller*'s IEDNet+ Transmitters section.

- IEDNet+ Unicast – When audio is sent to this remote controller, it is done via layer 3 Real-Time Protocol using the only the ports defined in *this controller's* IEDNet+ Transmitters section, but the IP address of the remote controller (primary or secondary)

Note: IEDNet+ transport is bi-directional, but the Dante transport is one-way only, from the remote controller to this controller, and can only be used when connecting a GLOBALCOM.IP controller. Its use case is where non-emergency messages like flight announcements are provided by a GLOBALCOM.IP controller to the life-safety 5400ACS system.

IEDNet+ Transmitters The transmitter channels used by this remote system when transmitting audio via IEDNet+ layer 3 audio transport. Note, the Audio IP should be a multicast address that is different from those used by other controllers in a system (and allowed by the network administrator). These are edited in-situ in the grid area.

Priority Mapping   When sending requests to this remote system, how to map internal priorities (on the left) to values in the message to the remote system.

Remote Zone Groups Available zone groups that can be used in remote announcement requests to this remote controller. These are used in the definition of this controller's local zone groups.

If Audio Transport Type is Dante, then some of the fields change slightly as shown below.

Primary IP:	Backup IP:	Audio Transport Type:
192.168.3.1	192.168.3.101	Dante

Dante Bridge Device:	Backup Dante Bridge Device:
My DAB	My DAB Backup

The IEDNet+ Transmitters table goes away, and in its place are some Dante Bridge device configuration properties.

Dante Bridge Device   Use to select the device in the system that serves as the Dante audio bridge. List presents all 1100DAB devices in the system.

Backup Dante Bridge Device Use to select the device in the system that serves as the backup Dante audio bridge. List presents all 1100DAB devices in the system..

4.2.4   Digital Zone Manager and Amplifiers Pages

The 54xxDZM Digital Zone Manager Details page appears as in Figure 4-10 below. Fields on this page are described in the text which follows. The only difference between the 5404DZM and 5432DZM pages are the captions at the top with the number of zones (4 or 32).

5404DZM Digital Zone Manager Details

Name:

Shop Floor Zones

IP Address:	Audio IP 1:	Audio IP 2:
0.0.0.0	0.0.0.0	0.0.0.0

Backup DZM:

<None>   ☐ Backup Self

Figure 4-10:   54xxDZM Details Page

Name   Name/Description for this device.

IP Address   Network address for this device

Audio IP 1/2   Network addresses of the two digital audio chips in the unit (read-

only, assigned in Device
Configuration Tool)

If Auto Assign mode applies to this system, then the IP address edit boxes are grayed out and are read-only. In Manually Assign mode, they are enabled.

Backup DZM   Which, if any, 5404DZM Backup serves to backup this DZM's power amps.

Backup Self   When checked this DZM is wired to two power amps, one that backs up the other. Can only be used for one-to-one backup. (Note, if a selection other than <None> is selected in the Backup DZM drop list, this checkbox does not appear.)

The DNA2404D Digital Network Amplifier Details page appears as in Figure 4-10a below. Fields on this page are described in the text which follows.

Figure 4-10a: DNA2404D Details Page

Name   Name/Description for this device.

IP Address   Network address for this device

Audio IP 1/2   Network addresses of the two digital audio chips in the unit (read-only, assigned in Device Configuration Tool)

Backup Amp   Which DNA2404D Backup is backing up this digital amplifier, if any. This list presents all

DNA2404D Backup devices in the system.

Backup Amp Switcher   Which 1544BAS (Backup Amp Switcher) device is doing the speaker line switching for the amp backup function. This list presents all 1544BAS devices defined in the system.

The Backup DNA's have only the basic properties as shown in the figure below.

Figure 4-10b: DNA2404D Details Page

Name   Name/Description for this device.

IP Address   Network address for this device

Audio IP 1/2   Network addresses of the two digital audio chips in the unit (read-only, assigned in Device Configuration Tool)

Innovative Electronic Designs, LLC   +1.502.267.7436 phone
9701 Taylorsville Road   +1.502.267.9070 fax
Louisville, KY 40299, USA   www.iedaudio.com
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The figures below show how DNA2404's, Backup DNA2404's and 1544BAS units should be wired for 1-to-1 and 4-to-1 backup use cases. The Logic connections shown are not required when the backup and the 1544BAS are all defined in the 5400 Designer project. In this case, backup is handled via network commands to the 1544BAS.
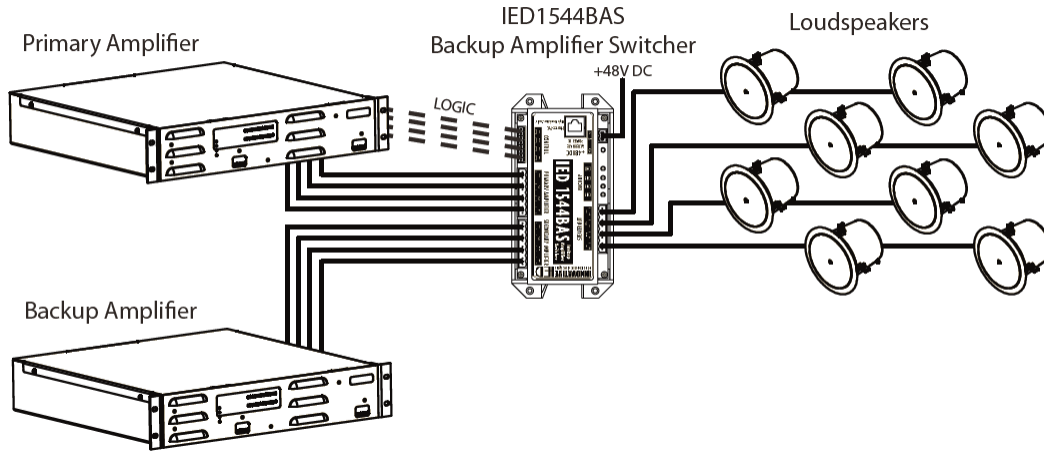

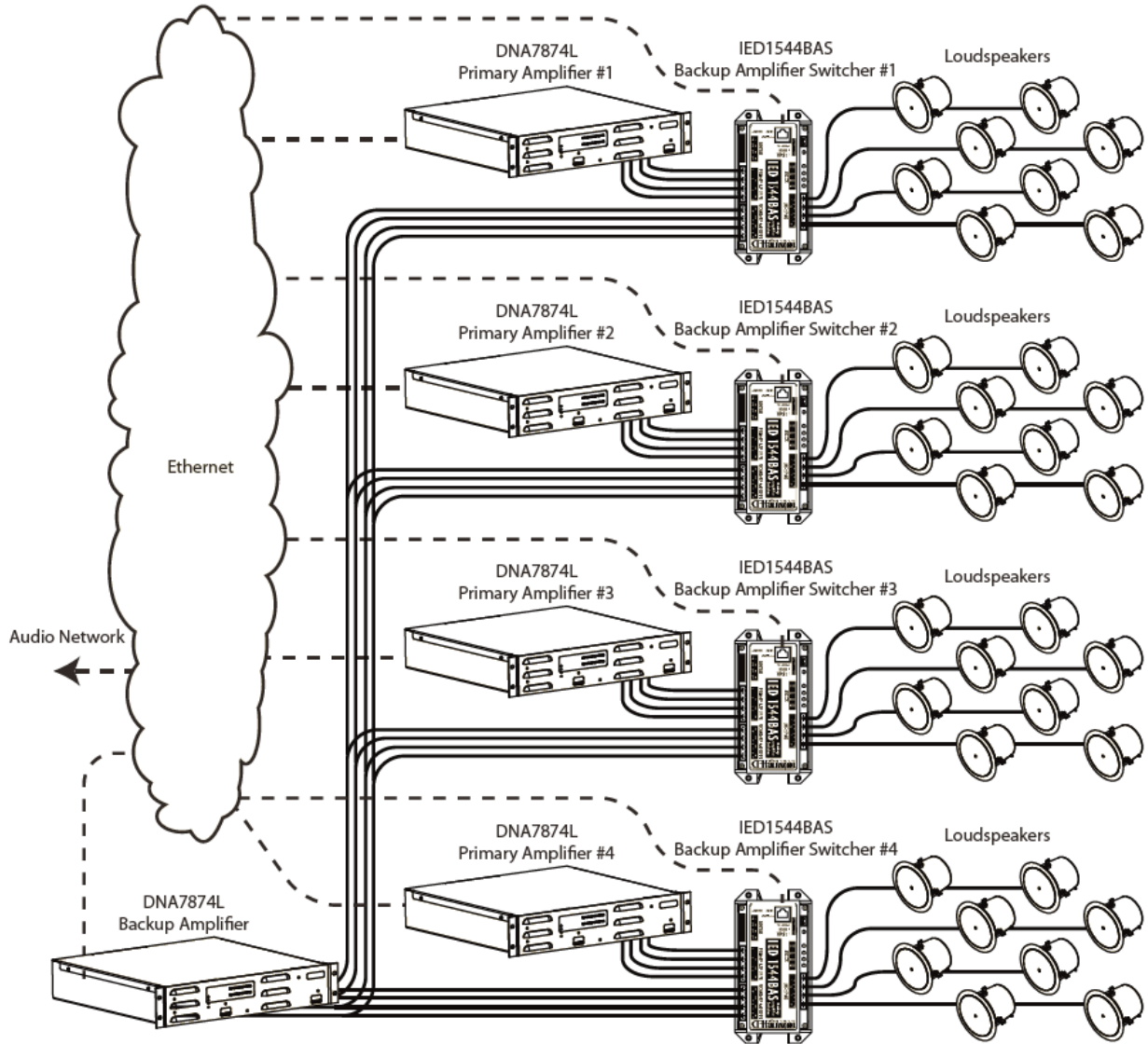**Figure 4-10c: DNA2404D Backup 1-to-1 Scenario**

Figure 4-10d: DNA2404D Backup 4-to-1 Scenario

4.2.5   Paging Station Details Page

The Paging Station Details page appears as in the figures below for the four types of paging stations: 5450CS, 5416CS, 5401CS and 5404CS (Figure 4-11 through 4-14).
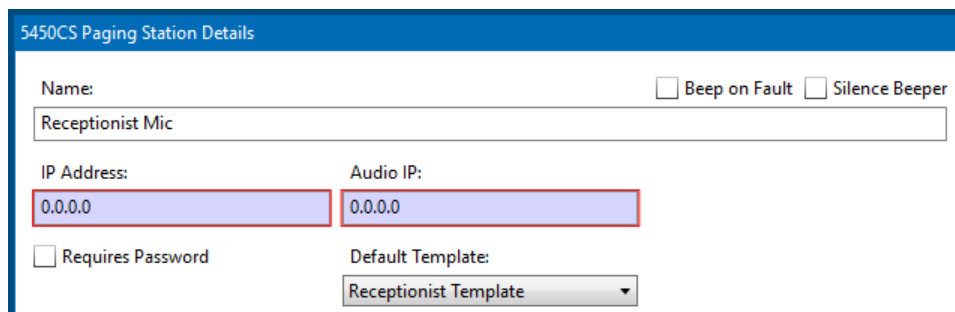

Figure 4-11:   5450CS Details Page

Name   Name/Description for this device.

IP Address Network address for this device

Audio IP   Network addresses of the two digital audio chips in the unit (read-only, assigned in Device Configuration Tool)

If Auto Assign mode applies to this system, then the IP address edit boxes are grayed out and are read-only. In Manually Assign mode, they are enabled.

Beep on Fault   When checked, the beeper on this mic station will sound when there is a new fault in the system. See the appropriate mic station section for instructions on how to silence this alert tone.

Silence Beeper   When checked, the normal beeper function for such things as Ready status are suppressed.

Requires Password   (5450CS only) Flag that indicates whether this mic station should normally be locked, and require a user to enter a password to access any of its functions.

Default Template   If password not required, then this is the template of buttons to present on the 5405CS touch screen.
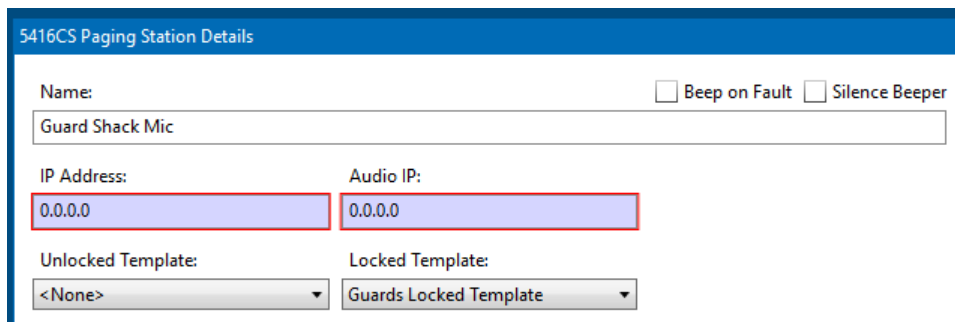
Figure 4-12:   5416CS Details Page

Name   Name/Description for this device.

IP Address Network address for this device

Audio IP   Network addresses of the two digital audio chips in the unit (read-only, assigned in Device Configuration Tool)

If Auto Assign mode applies to this system, then the IP address edit boxes are grayed out and are read-only. In Manually Assign mode, they are enabled.

Beep on Fault   When checked, the beeper on this mic station will sound

when there is a new fault in the system. See the appropriate mic station section for instructions on how to silence this alert tone.

Silence Beeper   When checked, the normal beeper function for such things as Ready status are suppressed.

Unlocked Template   The template of button functions to apply when the key switch is in the unlocked position.

Locked Template   The template of button functions to apply when the key switch is in the locked position.

Note: settings such as IP address are automatically handled by the Device Configuration Tool when the devices are discovered and linked to the project.

Figure 4-13:   5401CS Details Page

Name   Name/Description for this device.

IP Address Network address for this device

If Auto Assign mode applies to this system, then the IP address edit box is grayed out and is read-only. In Manually Assign mode, it is enabled.

Silence Beeper   When checked, the normal beeper function for such things as Ready status are suppressed.

In addition, on this page is where one defines the action to be taken when the push-to-talk (PTT) switch is pressed. See the section on Action Types for more details on this.

Copy Action/Paste Action   As a convenience for creating actions which are similar to other actions, one may copy an action to the clipboard and then paste it back on another button.

Figure 4-14:   5404CS Details Page

Name   Name/Description for this device.

IP Address Network address for this device

If Auto Assign mode applies to this system, then the IP address edit box is grayed out and is read-only. In Manually Assign mode, it is enabled.

Silence Beeper   When checked, the normal beeper function for such things as Ready status are suppressed.

One defines the actions for the push-to-talk (PTT) switch as well as the four buttons (A – D) by first selecting them on the left. Then fill in the definition for the action on the right. See the section on Action Types for more details on this. Note, for these devices the Audio Source property will always be <Self> (this paging station).

Copy Action/Paste Action   As a convenience for creating actions which are similar to other actions, one may copy an action to the clipboard and then paste it back on another button.

4.2.6   Aux I/O Device Details Page

The Aux I/O Device Details page appears as in Figure 4-15 for the 1516LI, Figure 4-16 for the 1522LR and Figure 4-17 for the Generic Dante device, and Figure 4-18 for the Display Zone Group device. To support CobraNet to Dante bridging in multi-ACS applications, there is also a DAB (Digital Audio Bridge) device as defined in Figure 4-18c. Fields on this page are described in the text which follows the figure.

Figure 4-15:   1516LI Details Page

Name   Name/Description for this device.

IP Address Network address for this device

If Auto Assign mode applies to this system, then the IP address edit box is grayed out and is read-only. In Manually Assign mode, it is enabled.

Has LI-E Expansion   Flag indicating whether the 1516LI has the expansion 1516LI-E, increasing its logic input count from 16 to 32.

Logic Input Names   Labels to associate with the logic inputs. These appear in places where inputs are used in Designer for ease of configuration and documentation.

Figure 4-16:   1522LR Details Page

Name   Name/Description for this device.

IP Address Network address for this device

If Auto Assign mode applies to this system, then the IP address edit box is grayed out and is read-only. In Manually Assign mode, it is enabled.

Relay Output Types   (1522LR only) Settings for each of the two available relay outputs indicating is function. Available options are:

- **Zone Output** – Use in an alarm or announcement like any other zone. Maybe added to Zone Groups.

- **Alarm Active** – Relay energized when an alarm is active in the system.

- **Delayed Zone State** – Relay energized when an alarm is active and is not yet playing to all zones due to delay state of some zones.

- **Disabled Zone State** – Relay energized when one or more zones are disabled.

- **Announcement Active** – Relay energized when one or more non-alarm announcements are active.

- **Power Fault** – Relay energized when there is a fault related to system power

such as loss of mains power or an issue with the batteries.

- **Any Fault –** Relay energizes when there is any fault in the system. This is redundant with the dedicated fault relay, but may be necessary if one needs to signal to separate external systems.

Logic Input Names   Labels to associate with the logic inputs. These appear in places where inputs are used in Designer for ease of configuration and documentation.

Figure 4-17:   Generic Dante Device Details Page

Name   Name/Description for this device.

IP Address Network address for this device

If Auto Assign mode applies to this system, then the IP address edit box is grayed out and is read-only. In Manually Assign mode, it is enabled.

Supervised   Whether to monitor this device on the network and report faults on it.

Dante Node Name   The name of the Dante device node.

Number of Inputs   The number of transmitter channels defined for this device. The size of the Transmitter Channel Names list box will change to reflect this value.

Number of Zones   The number of receiver channels defined for this device. The size of the Receiver Channel Names list box will change to reflect this value.

Transmitter Channel Names   A list of the channel names. The defaults supplied *must* be changed to the actual channel names (e.g., discovered with the Dante Controller utility).

Receiver Channel Names   A list of the channel names. The defaults supplied *must* be changed to the actual channel names (e.g., discovered with the Dante Controller utility).

Figure 4-18:   Display Zone Group Details Page

Name   Name/Description for this device.

Group IP Address   The (broadcast) address used to reach the displays in the display group.

Number of Displays   How many displays (visual zones) are in this display group.

Figure 4-18a: IED 9016RY Relay Device Details

The 9032RY relay device is very similar to the 9016RY device page, simply with twice the number of relays which may be defined. The fields here are:

Name   Name/Description for this device.

IP Address Network address for this device

If Auto Assign mode applies to this system, then the IP address edit box is grayed out and is read-only. In Manually Assign mode, it is enabled.

Relay Output Functions   For each of the four available relay outputs of the 5400ACS, this control allows them to be configured as zone outputs (triggered with an announcement or alarm) or used to indicate controller/system status. The list of available options is shown below in Figure 4-18b.
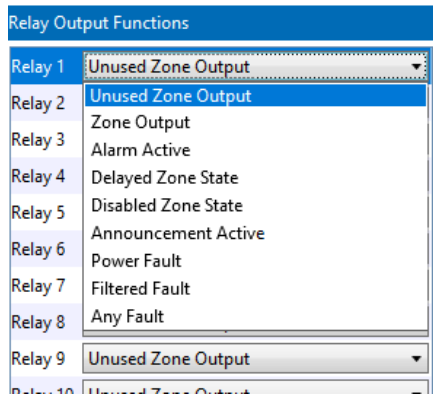
Figure 4-18b: Relay Output Options

The choices for Relay Output Options are:

- **Zone Output** – Use in an alarm or announcement like any other zone. Maybe added to Zone Groups.

- **Alarm Active** – Relay energized when an alarm is active in the system.

- **Delayed Zone State** – Relay energized when an alarm is active and is not yet playing to all zones due to delay state of some zones.

- **Disabled Zone State** – Relay energized when one or more zones are disabled.

- **Announcement Active** – Relay energized when one or more non-alarm announcements are active.

- **Power Fault** – Relay energized when there is a fault related to system power such as loss of mains power or an issue with the batteries.

- **Filtered Fault** – Relay energized when there is a fault that matches the defined filter conditions. See below for more details.

- **Any Fault –** Relay energizes when there is any fault in the system. This is redundant with the dedicated fault relay, but may be necessary if one needs to signal to separate external systems

If one designates a relay output for Filtered Faults, a new "Triggers" button appears as shown at right. Clicking on this on this brings up a pop-up window for defining which fault conditions will trigger this relay as shown in Figure 4-18c below.

One can define multiple filters for faults to trigger a relay via the selections at the top. One can either *either* the Device Type or the specific Device. (Selecting one will reset the other condition to <Any>. And, then one can further filter by selecting specific fault conditions for the selected Device Type or specific Device. The filter condition is added to this relay via the **Add** button at top right. In the example shown, the triggers are microphone element faults on either the touch screen or 16-button type mic stations. Filter conditions can be deleted by selecting them in the list and

then pressing the [-] delete button at the bottom left of the list box. Pressing the **OK** button saves the filter conditions and closes the pop-up window.

Figure 4-18c: Filtered Fault Definition Window
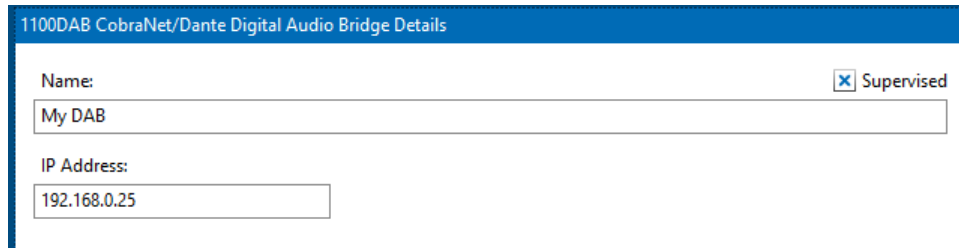
Figure 4-18d: 1100DAB Device Details

The fields here are:

Name   Name/Description for this device.

Supervised   Whether to monitor this device on the network and report faults for it.

IP Address   Network address for the Dante side of this device. The 5400ACS does not care or talk to the CobraNet side of the DAB and so that IP is irrelevant to configure.

Figure 4-18e: 1544BAS Device Details

The fields here are:

Name   Name/Description for this device.

IP Address   Network address for the device.

4.3   Recorded Message Library Page

The Recorded Message Library page appears as in Figure 4-19. This page is where new WAV files are added to the message library and organized by groups for ease of look-up for other configuration operations.
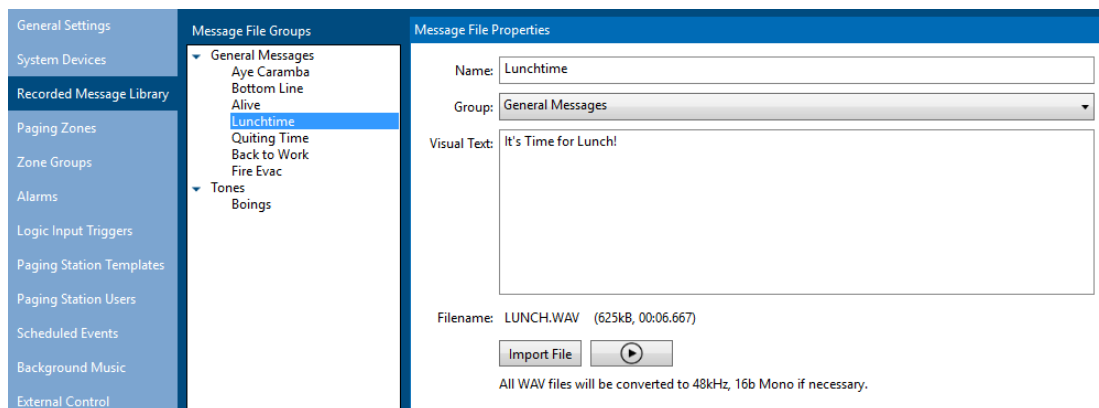

Figure 4-19:   Recorded Message Library Page

The Message are shown in the list box, with Messages in each group visible by clicking on the [+] icon next to the group name to expand it.. At the bottom of the list box are Add ([+]) and delete ([-]) buttons

which may be used to add new Messages, New Message Groups or to delete Messages or Message Groups from the library. The New Message/Group Pop-up appears as in Figure 4-20. Messages are added in the group that is currently selected. New Message Groups are added to the end of the library. Messages may be moved between groups by dragging them in the list box to the new group and then releasing the mouse button.
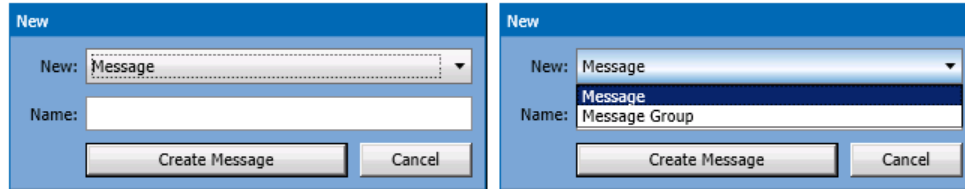
(with New drop list open)

Figure 4-20:   New Message/Group Pop-up

When deleting Messages, one must confirm deleting via a Yes/No prompt. One cannot delete a Message Group when there are any Messages still in it. An error pop-up will be displayed if one attempts this action. The fields and controls for each message are described below.

Name   Name for this Message.

Group   Which Message Group this Message is in. Changing this via the drop list will move the Message to the new group as an alternate approach to dragging the in the list box.

Visual Text The text that should be displayed on a visual display, or ia good place to document the full content of the message.

Import File Brings up the Windows standard file open dialog box to locate and import the actual WAV file to play for this message.

[►] (Play button)   Click to preview the WAV file on the local computer's default sound device.

4.4   Paging Zones Page

4.4.1   Introduction

The bulk of the work setting up a new system is configuring the various zones (outputs) of the system devices (this section), and defining meaningful groups of these zones for use in alarms and announcements (see the next section). The list box of Zones that appears may be as in the example in Figure 4-21. The first level are the system devices that have zones available. In some cases, the zones (outputs) are listed directly under the device. In the case of the 5432DZM, sets of eight outputs are associated with each of four amplifier channels. Since some controls (e.g., level and EQ) can only be done at a channel level, there are setup controls available at this level as well. Each section of the list view may be expanded or contracted via the ► and ▼ icons that appear next to the names.
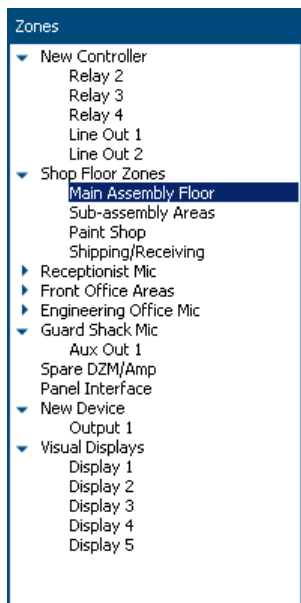
Figure 4-21:   Paging Zones List Box

The setup pages differ for the difference types of devices the zones belong to. Each of these types is described in a subsection which follows.

There are a few fields that are used one every zone no matter its type. These are described once below rather than in each subsection.

Physical Device/Output   Read-only field showing which device and, when appropriate, which output or channel of that device is affected by the setup on this page.

Name   Name/Description for this zone.

Used in System   Flag as to whether this zone is enabled in the system/project.

Delay Alarm to This Zone by   Value (in minutes) to delay alarms playing to this zone. The user may select <Default> in which case it is delayed by the value defined overall for the main controller. But, if the user wishes to phase in an alarm with different delays to different areas, then individual zones values may be supplied via this setting in each zone.

Enable Delay on Startup   Whether the alarm delay is enabled at system startup or not.

4.4.2   Main Controller Zone Setup Pages

The main (5400ACS) controller has two types of zones possible: relays (if not used for status outputs) and two auxiliary audio zones (line level outputs). Each of these is configured via the details shown below in Figures 4-22 and 4-23. The fields which are unique to these zone types are explained in the text that follows.

Figure 4-22:   Relay Zone Setup Page

Figure 4-23:   Aux Audio Out Setup Page

Overall Level   Output level for this zone in dB. Adjust either by dragging the slider or by entering a value in the edit box.

Default   Reset the level to the default value.

4.4.3   5404DZM Zone Setup Pages

There are two setup pages for the 5404DZM, an auto test setup page for the whole frame as shown in Figure 4-24 and as explained in the text which follows, and a channel/output setup page as shown in Figure 4-26 and as explained in the text below that.
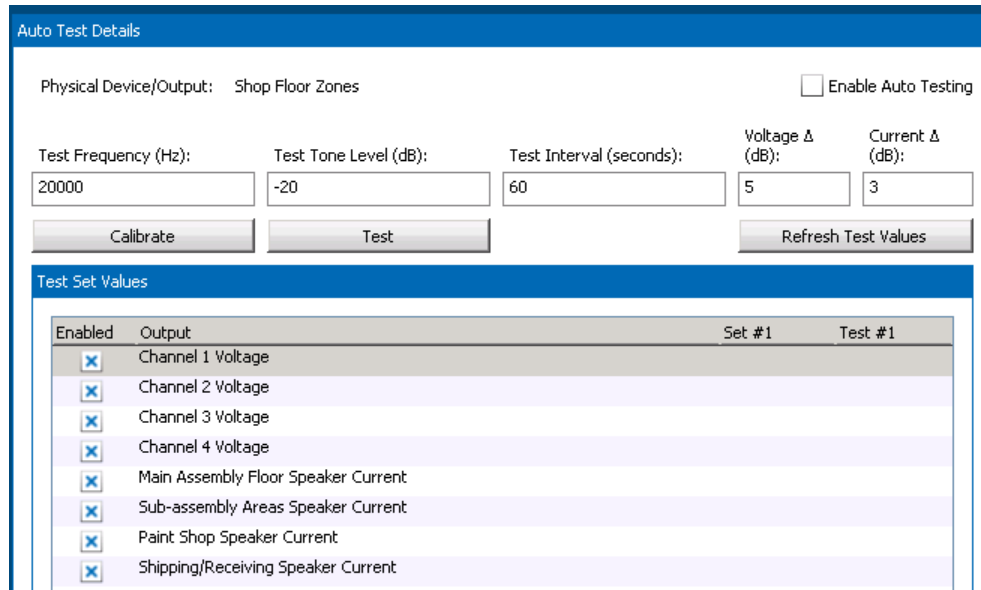

Figure 4-24:   5404DZM Auto Test Setup Page

Enable Auto Testing   Turn on auto testing for this DZM frame. This should not be enabled until after a calibration of the system is performed, otherwise there can be inappropriate faults declared.

Test Frequency   The frequency of the auto test tone, typically 20 kHz, but could be other values in special cases.

Test Tone Level   The level in dB for the test tone signal. The recommended values are in the -20 to -30 dB range.

Test Interval   The time between auto test cycles, typically in the 60-80 second range to allow for detection and reporting of faults within the EN 54-16 standard of 100 seconds.

Voltage Δ   The allowable delta/variation in amp voltage test readings that are consider OK.

Current Δ   The allowable delta/variation in current test readings that are considered OK for the speaker line

tests. Readings below this variance will be declared as faults.

Calibrate   Run a calibration of all auto test points now. The system should be in ideal working condition at the time the calibration is done. The readings for each test point will be saved as "Test Set Values" and used in the future along with the Test Variance to determine faulted points.

Test   Run a test of all auto test points now, and retrieve test/set values.

Refresh Test Values   Retrieve test/set values from the hardware (e.g., from last auto run test).

Enabled Checkboxes Whether to enable testing of this speaker line or not. If a zone is not enabled, its test point is not enabled or even shown in this grid. If a speaker line (zone) is enabled (for paging), but one does not want to have it supervised/tested, then this can be disabled by un-checking this box.

Set #1/Test#1 Values   After a calibration or test has been run (or the Refresh Test Values button pressed), the Set #1 and Test #1 values will be displayed in this list box. It is prudent to do a manual "sanity check" of these values. For example, if two zones in the system are wired up in very similar manner (e.g., about the same speaker load and wiring run) then they should get about the same Test Set Values. If not, one may want to check the installation/wiring and re-run the calibration.

The top four values displayed are the voltage readings from the power amp output. The second four values are the speaker line current readings.
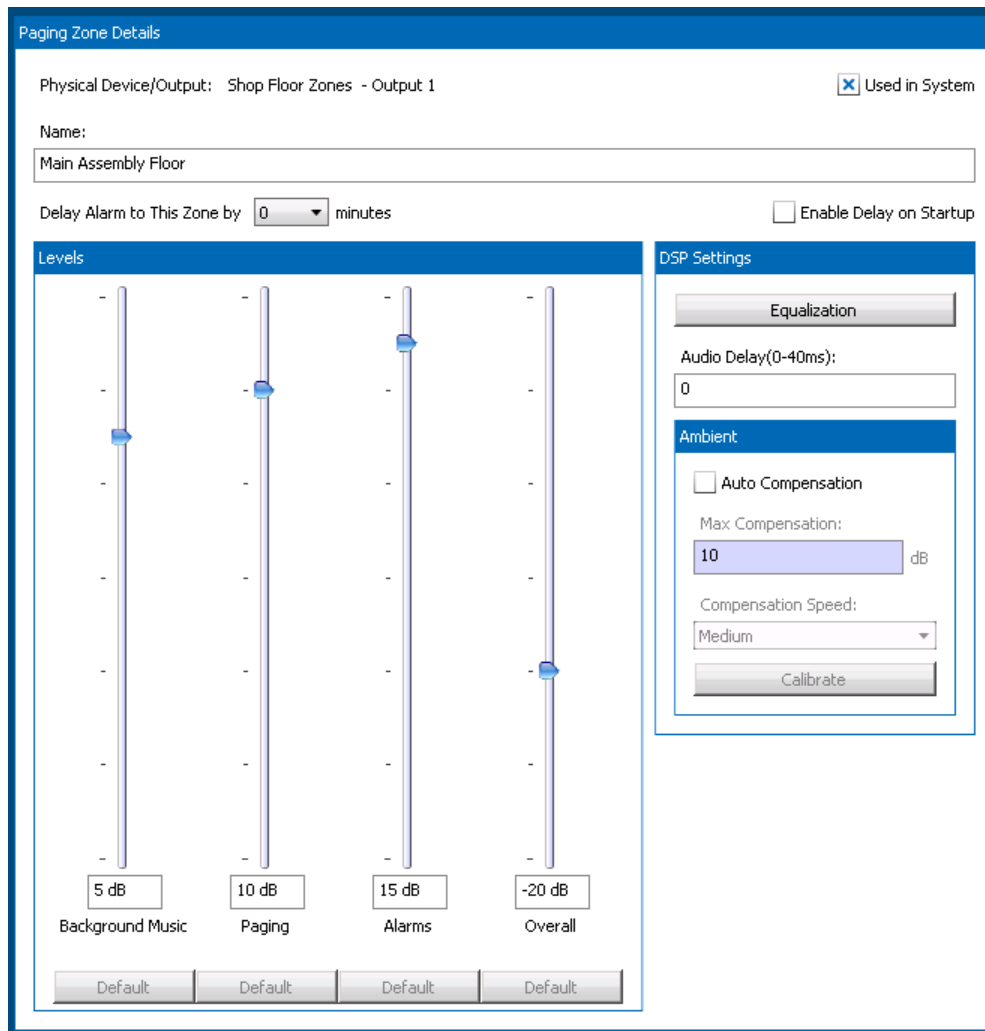

Figure 4-26:   5404DZM Zone Setup Page

Levels   Levels for Background Music, Announcement, Alarms and Overall for the zone in dB. Adjust via slider or edit box.

Equalization   Call up the equalization setup window for this zone. See Figure 4- 27 and text that follows for more on this window.

Audio Delay   The audio delay, if any, for this zone/output; range 0..40 msec.

Auto Compensation   Whether to do ambient analysis automatic level adjustment or not for this zone.

Max Compensation   The maximum to adjust the level by in dB.

Default   Set this value to the default defined in General Settings.

Compensation Speed   How quickly to make auto adjustments to the level. The choices are slow, medium and fast. Fast is most appropriate if it is desired to compensate for short term events like a subway train passing. Slow is most appropriate to compensate for general crowd level changes over the course of the day.

Calibrate   Run a calibration of the ambient analysis auto compensation now. This should be done during a relatively quiet time in the space the zone feeds, so that any detected audio is known to come from the system.
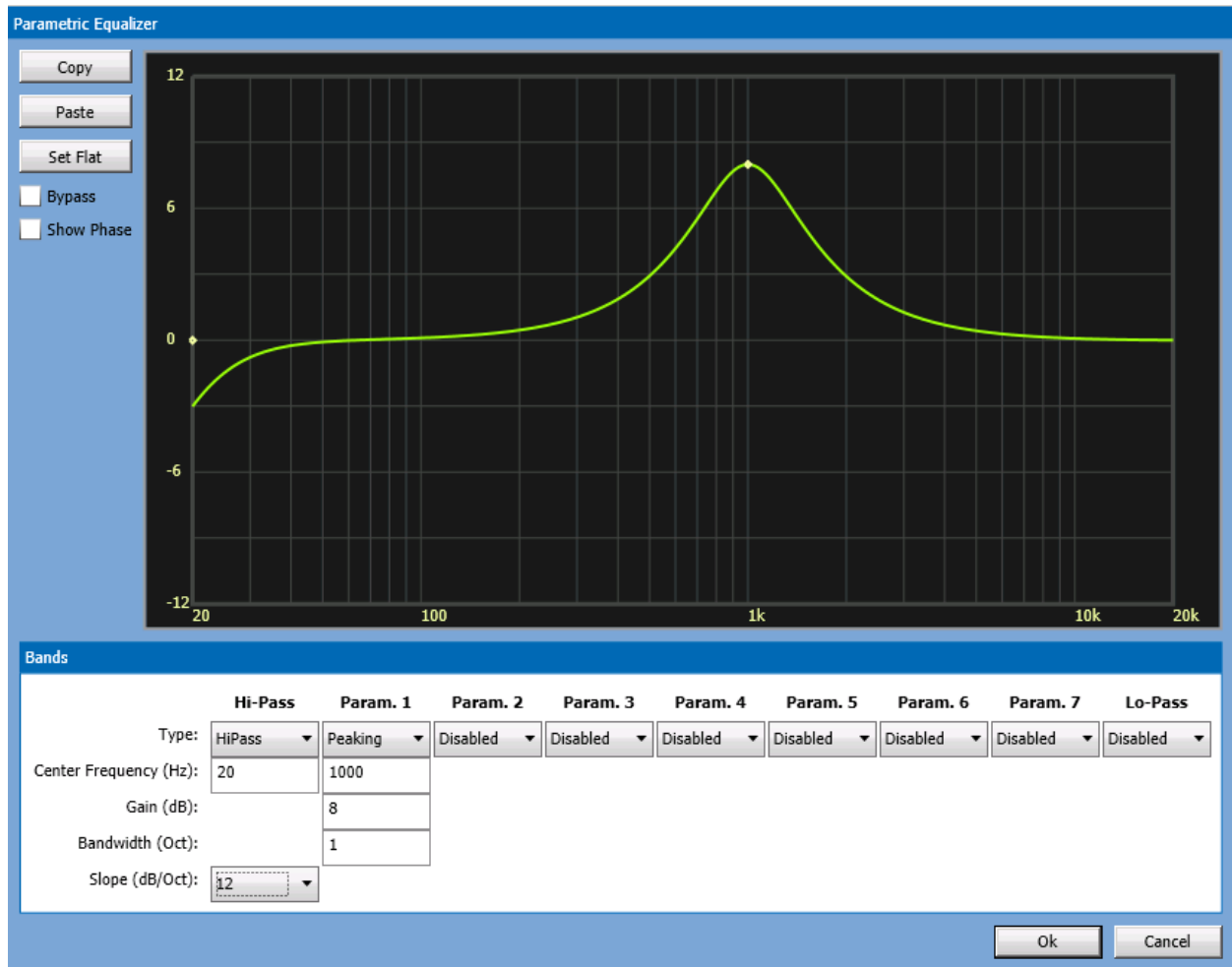

Figure 4-27:   5404DZM Equalization Setup Window

Set Flat   Disable all parametric bands, hi-pass and lo-pass filters.

Copy/Paste   Copy all EQ settings to the clipboard, so it may be pasted into another channel/zone via the Paste button.

Type drop list For Parametric bands, these are selectable between Peaking, Notch and Disabled choices. For the Hi-Pass and Lo-Pass bands, the choices are the pass type and Disabled.

Center Frequency   The center of a parametric type band, or the "knee" frequency of the Hi-Pass and Lo-Pass bands.

Gain   (Parametric only) The boost or cut for this filter band in the range of -24 to +24 dB
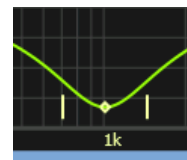
Bandwidth   (Parametric only) The bandwidth in Octaves. This value may be fractional for narrowband or notch filter applications.

Slope   **(**Hi-/Lo-Pass only) The slope of the filter (based on filter order). The options are 6 and 12 dB per octave.

Graph Area   Besides displaying the filter response, the filters can also be manipulated in this area as an alternative to entering data in the edit boxes under the band. To get into interactive graphics mode, one either clicks on the dot in the graph that represents a band or clicks on the heading label "Param. 1", "Param. 2", etc. When in this mode, the band will have a light blue background as shown at right.

Also, while in this mode, the dot at the center frequency for the selected band will become solid and little vertical bars representing the bandwidth of the band will appear as shown at right.

One can manipulated the properties of a peaking band via the following operations in the graphics area:

- Drag the center frequency dot left or right to change the Center Frequency value.

- Drag the center frequency dot up or down to change the Gain value.

- Drag either of the bandwidth lines left or right to change the Bandwidth.

As changes are made in the graphics area, the values will change automatically under the selected band in the lower portion.

Show Phase   Enable display of the phase plot or not. When enabled, it appears as a red plot such as in Figure 4-33 below.
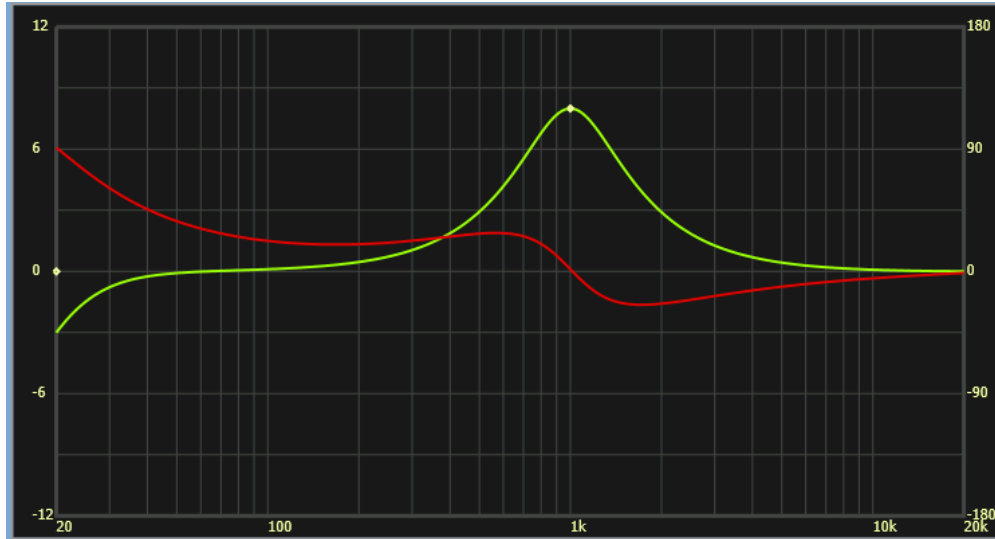
Figure 4-28:   Equalization with Show Phase Selected

4.4.4   5432DZM Zone Setup Pages

There are three setup pages for the 5432DZM, an auto test setup page as shown in Figure 4-29, a channel setup page as shown in Figure 4-31 and as explained in the text below that, and an output setup page as shown in Figure 4-35.

The only difference between the 5432DZM auto test setup page and the one for the 5404DZM is that there are two Set values computed for each test point, plus there are more test points. The two Set values come from running the test using the external associated amplifier (just like the 5404DZM) and the other from using the internal test amps. If a zone is not connected to the external amp because it does not get background music or is not involved in an announcement or alarm, then it must be tested (at that time) using the internal test amp. To be prepared for testing outputs in either configuration, two Set values are collected during the calibration step.
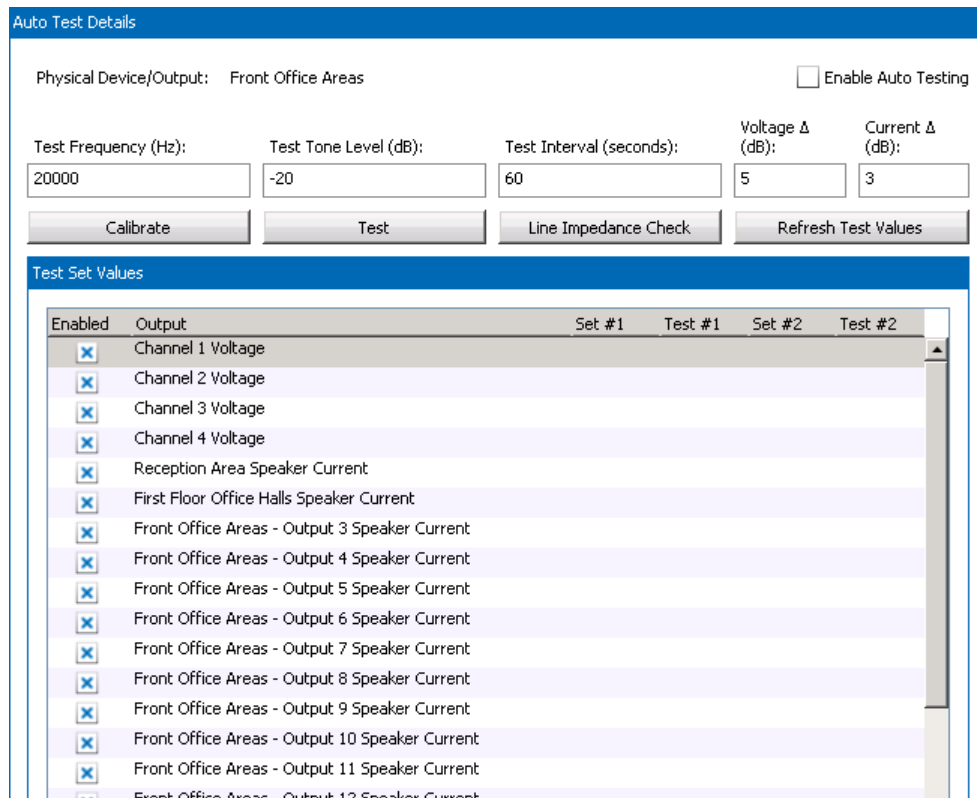

Figure 4-29:   5432DZM Auto Test Setup Page

Enable Auto Testing   Turn on auto testing for this DZM frame. This should not be enabled until after a calibration of the system is performed, otherwise there can be inappropriate faults declared.

Test Frequency   The frequency of the auto test tone, typically 20 kHz, but could be other values in special cases.

Test Tone Level   The level in dB for the test tone signal. The recommended

values are in the -20 to -30 dB range.

Test Interval   The time between auto test cycles, typically in the 60-80 second range to allow for detection and reporting of faults within the EN 54-16 standard of 100 seconds.

Voltage Δ The allowable delta/variation in amp voltage test readings that are consider OK.

Current Δ The allowable delta/variation in current test readings that are

considered OK for the speaker line tests. Readings below this variance will be declared as faults.

Calibrate   Run a calibration of all auto test points now. The system should be in ideal working condition at the time the calibration is done. The readings for each test point will be saved as "Test Set Values" and used in the future along with the Test Variance to determine faulted points.

Test   Run a test of all auto test points now, and retrieve test/set values.

Line Impedance Check   Call up the speaker line impedance check form. This is a useful installer tool shown in Figure 4-30 and described below.

Refresh Test Values   Retrieve test/set values from the hardware (e.g., from last auto run test).

Enabled Checkboxes   Whether to enable testing of this speaker line or not. If a zone is not enabled, its test point is not enabled or even shown in this grid. If a speaker line (zone) is enabled (for paging), but one does not want to have it supervised/tested, then this can be disabled by un-checking this box.

Set/Test Values   After a calibration or test has been run (or the Refresh Test Values button pressed), the Set #1/#2 and Test #1/#2 values will be displayed in this list box. It is prudent to do a manual "sanity check" of these values. For example, if two zones in the system are wired up in very similar manner (e.g., about the same speaker load and wiring run) then they should get about the same Test Set Values. If not, one may want to check the installation/wiring and re-run the calibration.

The top four values displayed are the voltage readings from the power amp output. Remaining points are the speaker line current readings.

Set/Test #1 are readings made using the main (external) power amp. Set/Test #2 are readings made using the built-in test amp in the 5432DZM. Both Set values are needed since during automatic testing any particular speaker line may be connected to the main power amp (e.g., for a page or BGM) or not, in which case the test amp is employed to test that speaker line.

The impedance check allows an installer to determine whether the speakers and end-of-line (EOL) devices attached to the 5404DZM are correctly wired up or not. For example, if one attaches 10 speakers each tapped at 8 Watts, then one should expect the impedance check to show an audible maximum power of around 80 Watts. Similarly, if there is a 5410EOL or 5411EOL device attached to a speaker line, one should see about 100 Ohms or 10 Ohms load at the inaudible (20 kHz) test frequency.

> *Note: Due to the nature of long speaker lines and slight differences in manufacturing, one should not expect an EOL reading to be exactly 100 or 10 Ohms. Nor will the speaker taps add up exactly to the observed maximum power at the audible frequency. But, the Impedance Check should find gross errors in installation and give the installer some confidence that the system is properly wired.*
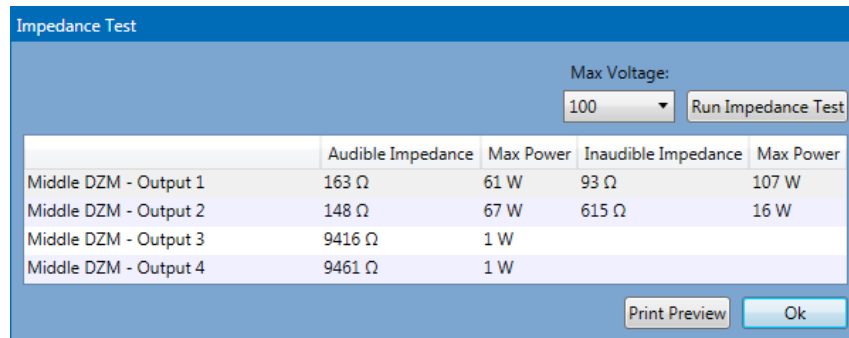
MiTek
Communications
Group

Figure 4-30:   Line Impedance Check Window (shown for 5404DZM)

Max Voltage   Amplifier rating: 100V or 70V

Run Impedance Test   Instructs the DZM to run the tests. There are two tests run back-to-back: one at an audible frequency and one at 20 kHz to test the speakers and the end-of-line (EOL) devices.

Test Results Grid   After the test completes, the values are shown in the results grid. Impedance values are in Ohms and Max Power values in Watts.

Print Preview   Open a report printout window as shown back in Figure 4-25b for the 5404DZM, from which an actual printout can be done.

OK   Close this window.

One will notice that the paging channel is similar to that for the 5404DZM except there is no Ambient Analysis section. The details for a 5432DZM channel appears as in Figure 4-31.
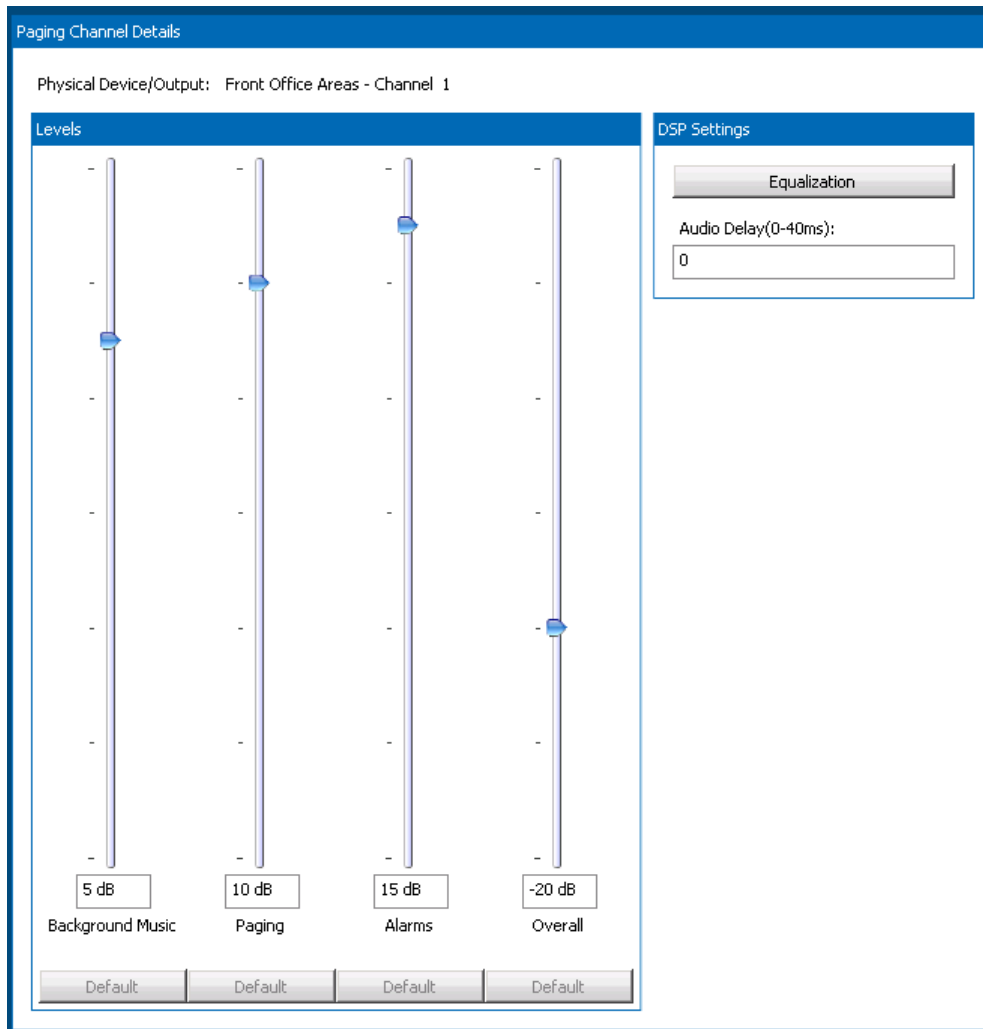
Figure 4-31:   5432DZM Channel Setup Page

Since DSP processing is only available for each amp channels, not all 32 zone outputs, the Channel Setup page mimics many of the features of the 5404DZM Zone Setup page.

Levels   Levels for Background Music, Announcement, Alarms and Overall for the zone in dB. Adjust either by dragging the slider up or down, or by entering values in the edit boxes.

Equalization   Call up the equalization setup window for this zone. See Figure 4-32 and text that follows for more on this window.

Audio Delay   The audio delay, if any, for this zone/output; range 0..40 msec.

Default   Set this value to the default defined in General Settings.
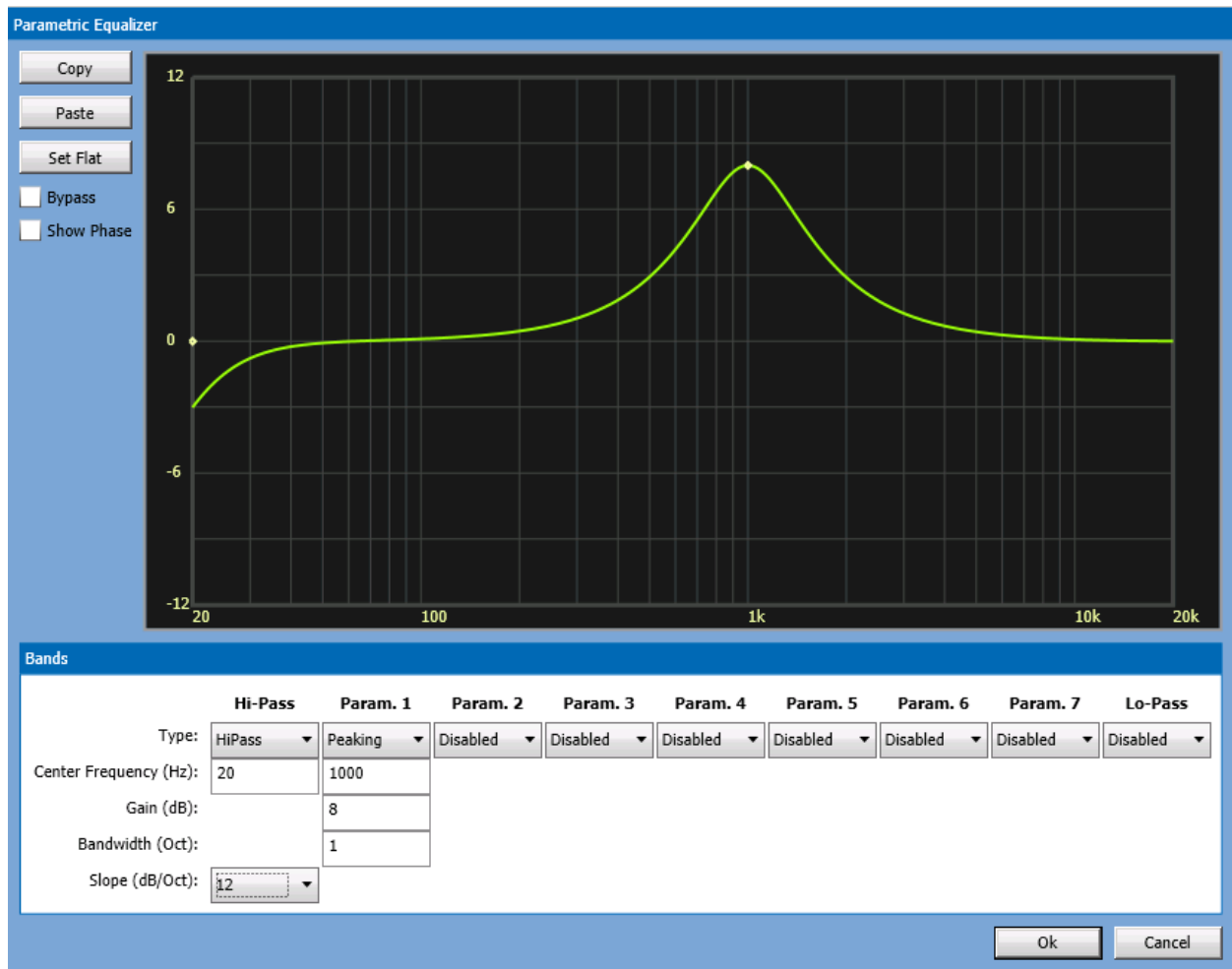
Figure 4-32:   5404DZM Equalization Setup Window

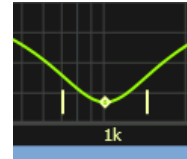**Set Flat**   Disable all parametric bands, hi-pass and lo-pass filters.

Copy/Paste   Copy all EQ settings to the clipboard, so it may be pasted into another channel/zone via the Paste button.

Type drop list For Parametric bands, these are selectable between Peaking, Notch and Disabled choices. For the Hi-Pass and Lo-Pass bands, the choices are the pass type and Disabled.

Center Frequency   The center of a parametric type band, or the "knee" frequency of the Hi-Pass and Lo-Pass bands.

Gain   (Parametric only) The boost or cut for this filter band in the range of -24 to +24 dB

Bandwidth   (Parametric only) The bandwidth in Octaves. This value may be fractional for narrowband or notch filter applications.

Slope   (Hi-/Lo-Pass only) The slope of the filter (based on filter order). The options are 6 and 12 dB per octave.

Graph Area   Besides displaying the filter response, the filters can also be manipulated in this area as an alternative to entering data in the edit boxes under the band. To get into interactive graphics mode, one either clicks on the dot in the graph that represents a band or clicks on the heading label "Param. 1", "Param. 2", etc. When in this mode, the band will have a light blue background as shown at right.

Also, while in this mode, the dot at the center frequency for the selected band will become solid and little vertical bars representing the bandwidth of the band will appear as shown at right.

One can manipulated the properties of a peaking band via the following operations in the graphics area:

- Drag the center frequency dot left or right to change the Center Frequency value.

- Drag the center frequency dot up or down to change the Gain value.

- Drag either of the bandwidth lines left or right to change the Bandwidth.

  As changes are made in the graphics area, the values will change automatically under the selected band in the lower portion.

Show Phase   Enable display of the phase plot or not. When enabled, it appears as a red plot such as in Figure 4-33 below.
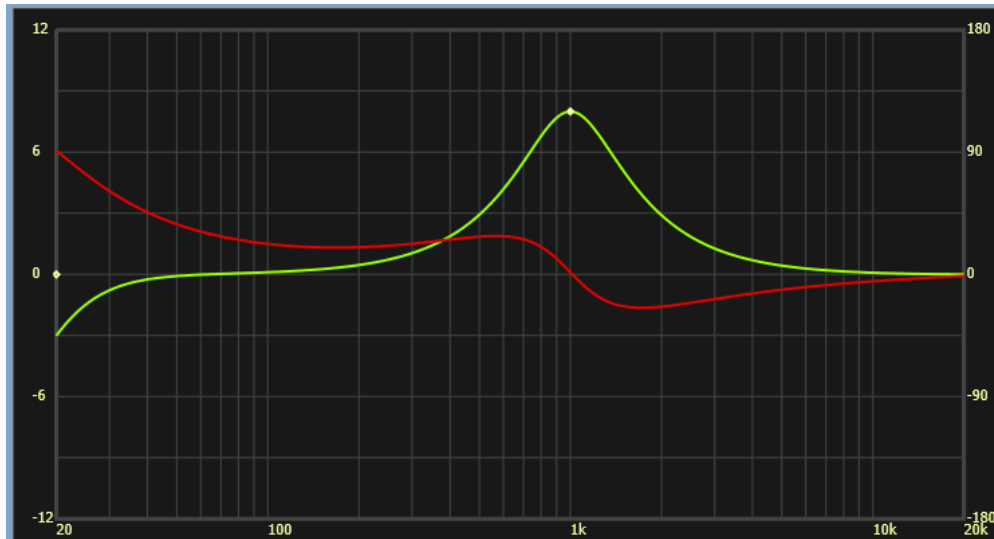

Figure 4-33:   Equalization with Show Phase Selected

Each 5432DZM channel has eight zone outputs. Each zone is configured via the details window as shown below in Figure 4-34.

Figure 4-34:   5432DZM Output Setup Page

The only properties for each output are the generic ones of Name (description), Used in System flag and Alarm Delay setting.

4.4.5   5416/5450CS Zone Setup Pages

There is a setup page for the Auxiliary Audio Output from a 5416CS or 5450CS paging station as shown in Figure 4-35. The level is an overall output level.

Figure 4-35:   Paging Station Aux Audio Output Setup Page

4.4.6   1522LR Zone Setup Pages

The 1522LR Relay Zone Setup page is as shown in Figure 4-37, which is the same as for the main controller relay outputs.
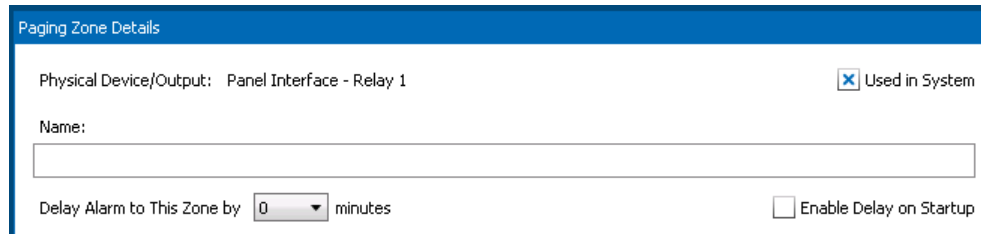

Figure 4-37:   1522LR Relay Zone Setup Page

The only properties are the same standard properties used on all zones.

4.4.7   Generic Dante Device Zone Setup Pages

The zone setup for the Generic Dante Device outputs are the same as for the Relays, as shown in Figure 4-37 above.

4.5   Zone Group Setup Page

The Zone Group configuration page has on the left a list box of all zone groups. Zone Groups may be added or deleted via the [+] and [-] buttons at the bottom of the list box.

Starting with version 2.1.7, there are two kinds of zone groups

- "Traditional" zone groups (lower section) – What have usually been define, that is, simply a fixed group of zones.

- Dynamic Zone Groups – Zone Groups whose make-up varies based on what contact closures in the group are currently active.
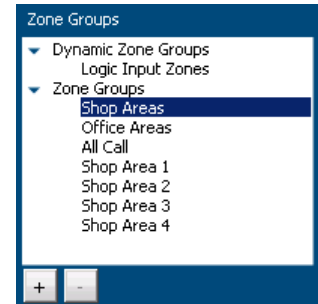
Definition of each type of zone group is described below.

When a "traditional" Zone Group is added or selected in the list box on the left, the details page to the right appears as shown in the example in Figure 4-39a.
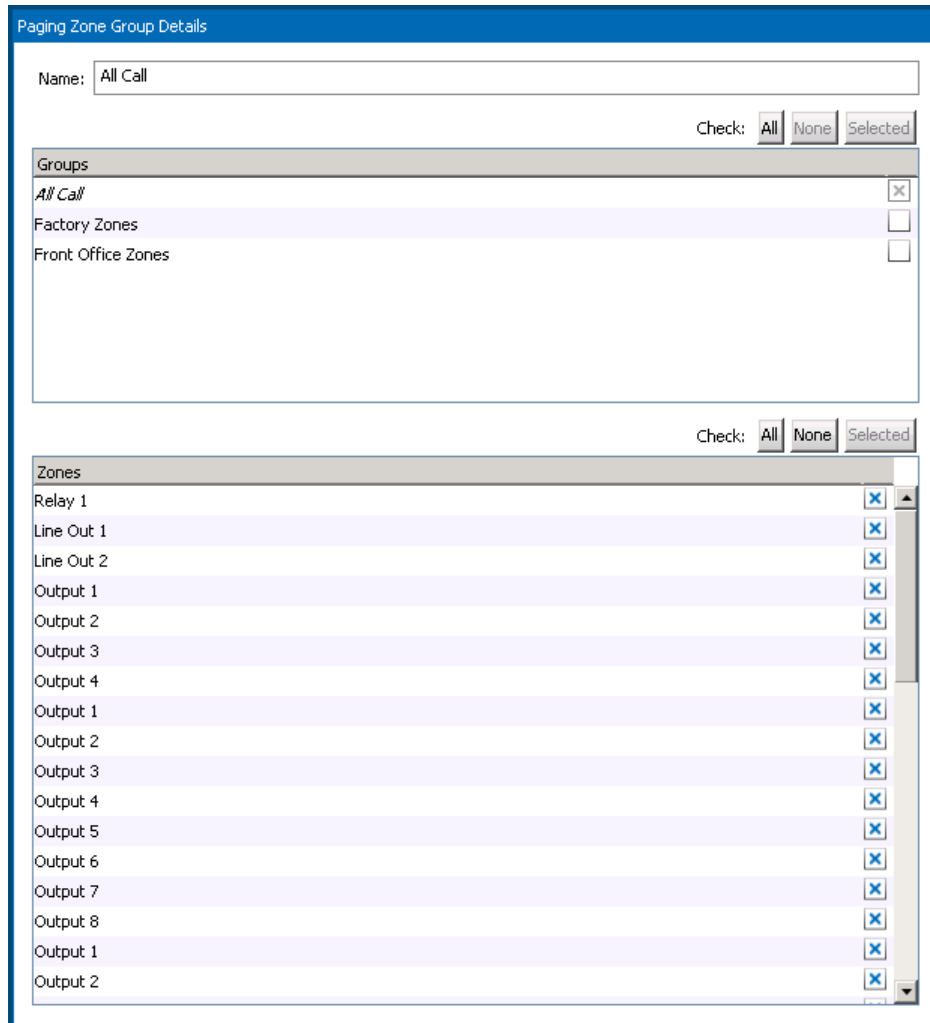
Figure 4-38:   Zone Group List Box

Figure 4-39a: Zone Group Setup Page

The Name (description) for this Zone Group is defined in the top edit box. One may define a zone group as being a set of zones, a set of other zone groups or both. For example, if one has defined zone groups

East Wing and West Wing, and wants to create a zone group "Both Wings", this can be done by simply selecting the two zone groups from the list, not all the zones in both groups.

A zone or zone group is part of the zone group shown in the details page if its checkbox off to the right is checked (has an X in it). The buttons above each list box are handy shortcuts.

- **All** – Check all items in the list below
- **None** – Un-check all items in the list below
- **Selected** – Check all items that are selected via mouse Click, Ctrl-Click and Shift-Click multi-item selection methods (standard Windows procedure to pick multiple items).

When a Dynamic Zone Group is added or selected in the list box on the left, the details page to the right appears as shown in the example in Figure 4-39b.

Figure 4-39b: Dynamic Zone Group Setup Page

Properties that appear in this area are as follows:

Name   The name/description of this Dynamic Zone Group. This is the name that appears in the Zone Group list box and in Destination drop lists.
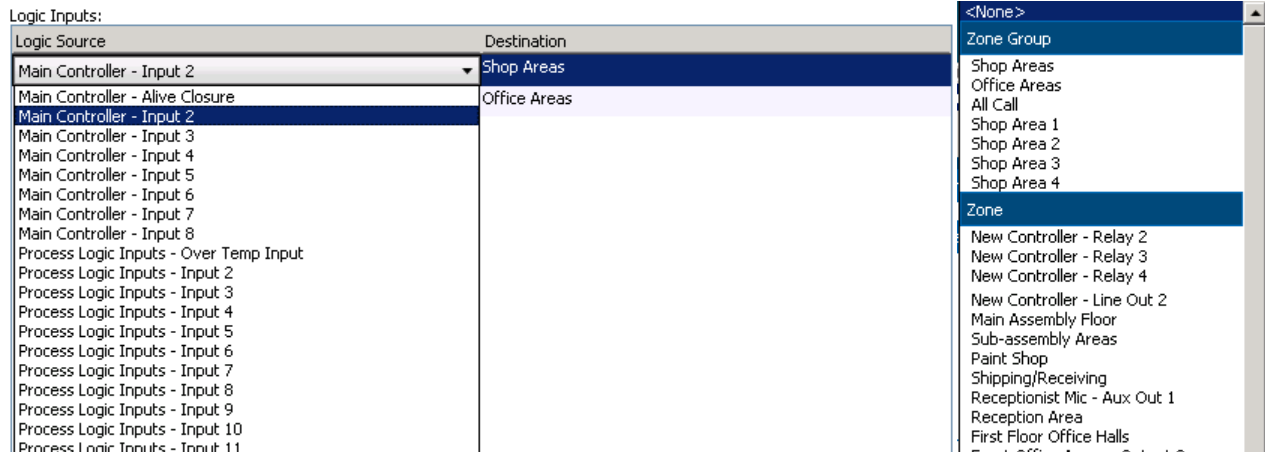
Input Type   How each input source should respond to external stimuli. Choices here are:

- **Momentary** – Select the Destination when the input state is met, and de-select it when the state reverses.
- **Toggle** – Alternately select or de-select the destination when the input state is met consecutive times. For example, if connected to push button, select the destination on the first press, de-select the destination on the second press, select the destination again on the third press, etc.

Input State   What condition of the external stimuli is the triggering state: Open (high voltage) or Closed (low voltage or switch closure across the inputs).

Logic Inputs This list box displays one or more logic inputs that are assigned to this dynamic zone group. Each logic input is mapped to a destination (zone group or zone) in this list box. Logic Inputs are added or deleted via the [+] and [-] buttons beneath the Logic Inputs list box.

When an Input Trigger is added, a new row is added to the list box area. The Trigger can then be defined by clicking twice in the first column and selecting the logic input from the drop list as shown below at left. To change the destination, one clicks twice on the destination cell and then opens the drop list box. This presents a list of zone groups and zones such as the example at right.

If one selects a logic inputs that has already been used in a trigger or in a dynamic zone then the selection will be highlighted with a red box indicating the selection is invalid. For the Destination, one may select any *one* zone group or zone from that drop list. Once a logic input has been added, it may be edited in place in the grid in the same way by clicking twice on either the Input cell or Destination cell in the grid, such as is shown below.

Edit Logic Source

Edit Destination
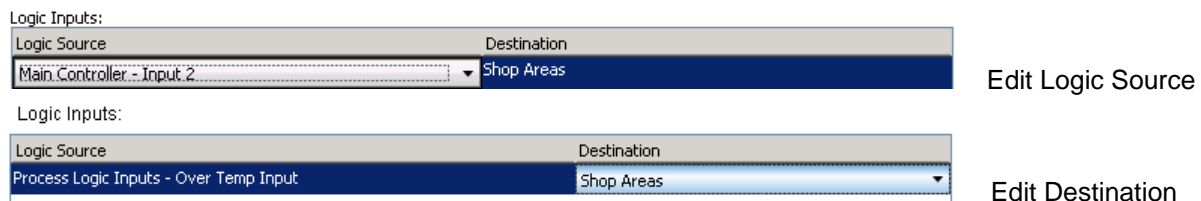
When there are remote controllers defined in the project, their zone groups appear in the Groups list box, as in the example below. The name between the asterisks (*) is whatever was given as the name of this controller, followed by the name given to the zone group defined in it.
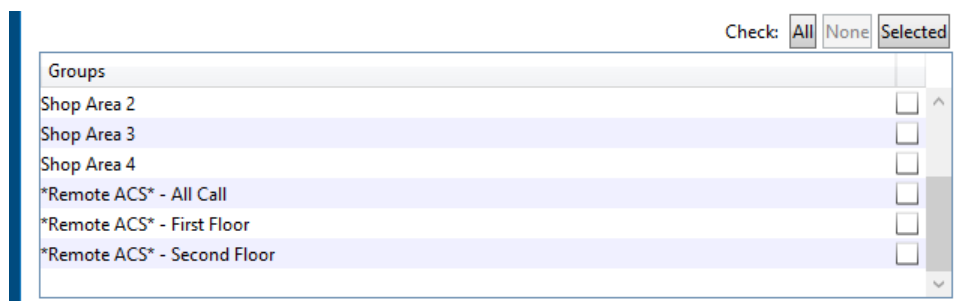
4.6   Alarms Page

An alarm is a combination of one or more actions. Alarms are defined via the Alarms page shown in Figure 4-40 and described in the text that follows.

Figure 4-40:   Alarm Details Page

Alarms List Box   This shows all defined alarms in the system. Alarms are added to this list via the Add ([+]) button below the list box, or are deleted via the Delete ([-]) button, following a yes/no confirmation prompt. Selecting an alarm in the list, shows its details to the right.

Name   The name or description of this alarm, i.e., what appears in the list box and in controls used elsewhere to select this alarm, such as to assign it to a logic input trigger.

Alarm Actions This area lists all the actions associated with the selected alarm. The list box to the left shows all the actions (in the example, only one). Actions are added or deleted via the [+] and [-] buttons beneath this list box. When an action is selected, its details are shown to the right, in the following controls.

Action Type   This drop list allows selection of the type of action:

- Live Page – Route audio from a source to designated zone group.

- Play Message – Play a pre-recorded message to designated zone group.

- Mute – Mute all audio in the zones of the designated zone group

    Depending on the choice of action, the other controls/properties may change. See the **Action Types** chapter of this document for details on these fields.

4.7   Logic Input Triggers Page

Logic Inputs are configured to do particular actions on the Logic Inputs Triggers page as shown by the two examples in Figure 4-41, and explained in the text which follows.

Figure 4-41:   Logic Input Triggers Page

Triggers are added or deleted via the [+] and [-] buttons beneath the Trigger list box. When a trigger is selected in the list box, its details are shown to the right. Properties that appear in this area are as follows:

Name   The name/description of this trigger. This is the name that appears in the Triggers list box.

Input Type   How the input trigger should respond to external stimuli. Choices here are:

- **Do Once** – Trigger the action once when the input state is met.

- **Momentary** – Trigger the action when the input state is met, and stop the action when the state reverses.

- **Toggle** – Alternately trigger or stop the action when the input state is met consecutive times. For example, if connected to push button, trigger the action on the first press, stop the action on the second press, start the action again on the third press, etc.

Input State   What condition of the external stimuli is the triggering state: Open (high voltage) or Closed (low voltage or switch closure across the inputs).

Input Result   What to trigger. The options are:

- **Play Alarm** – Trigger one of the defined alarms

- **Do Action** – Trigger another action (e.g., non-emergency action)

- **Clear All Faults** – Reset all faults in the system. For example, this might be connected to a fire panel and when the panel is reset, it signals to the system to clear all faults and start fresh on supervising conditions.

- **Silence All Alarms** – Reset all active alarms in the system. Similar to Clear All Faults, this might be connected to an external system and tripped when that system is reset.

- **Set Fault** – Create a new fault in the system. An input of this type can be used to supervise third party equipment that has fault relays.

- **Set Status** – Set a description into one or more status slots that appear on the status screen on the touch screen mic stations. Since these triggers function a little differently than the others, they are covered in section 4.7.1.

- **Clear Fault** – Clear a fault from the system. The complement of Set Fault for supervising third party equipment.
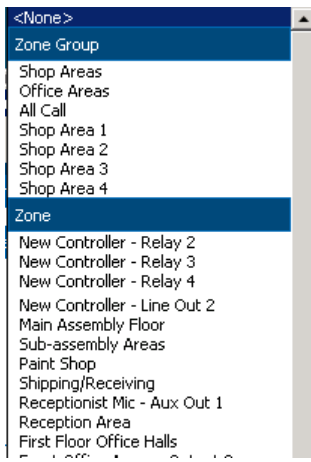
> *Note: Not all of these Input Result types are available for all Input Types. For example, the Clear All Faults, Silence All Alarms and Clear Fault can only be done from a "Do Once" type Input, since there is no complement of these actions to do on a momentary or toggle input type.*

Input Triggers This list box displays one or more logic inputs that are assigned to this trigger. For most types of results, one and only one logic input can be assigned – Do Alarms is the exception. If the input result is an action that takes a destination zone group, the zone group can be assigned to the logic input in this list box. Input Triggers are added or deleted via the [+] and [-] buttons beneath the Input Triggers list box.

When an Input Trigger is added, a new row is added to the list box area. The Trigger can then be defined by clicking twice in the first column and selecting the logic input from the drop list as shown below at left. To change the destination, one clicks twice on the destination cell and then opens the drop list box. This presents a list of zone groups and zones such as the example at right.

If one selects a logic inputs that has already been used in a trigger or in a dynamic zone then the selection will be highlighted with a red box indicating the selection is invalid. For the Destination, one may select any *one* zone group or zone from that drop list. Once a trigger has been added, it may be edited in place in the grid in the same way by clicking twice on either the Input cell or Destination cell in the grid.
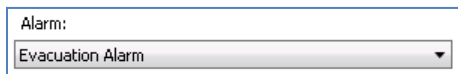
When the Input Result is "Play Alarm" and one wishes to define it to trigger from only one logic input, one can leave Destination set to the (default) value of "<Use Main Alarm Destination>". This means the alarm will play to the zone group that was defined for that alarm (in the Alarms area of Designer). If one changes this value, then it will over-ride what is defined in the alarm.

Starting with version 2.1.7, it is possible to add more than one Input Trigger to an Event (that is multiple inputs can start the alarm or action). The resulting alarm playback or action will occur to the sum of the inputs triggered. If input triggers change after the initial start of the alarm, under some conditions, the alarm will be momentarily stopped and then restarted from the beginning so that new zones receive the full message.

> *Note: If more than one logic input is defined for a Play Alarm result, then it is not valid to have any of the destinations be "<Use Main Alarm Destination>" and this will be indicated by a red box around the value.*
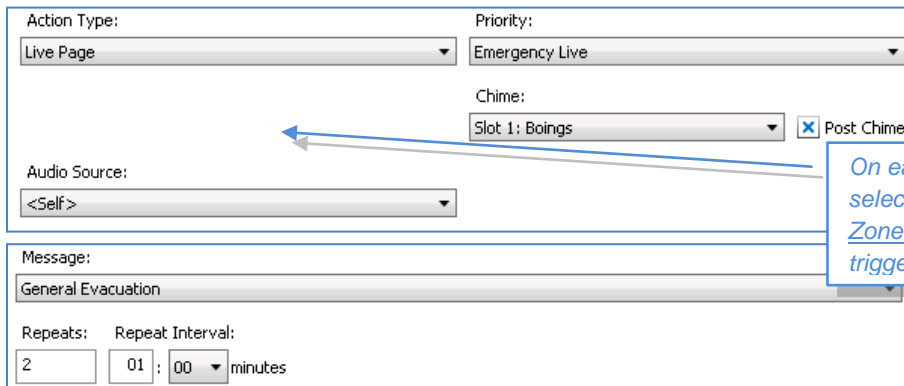
Depending on what Input Result type is selected additional controls may appear above the Input Triggers list box. These include the following:

If the "Play Alarm" type Input Result is selected, the following control/property appears:

Alarm   This drop list box of all defined alarms is presented for the user to select which alarm to play.

If the "Do Action" type Input Result is selected, the following controls/properties appear, some only appear for certain Action Types:

On earlier versions of Designer, Zone Group is selected here. Now Zone Group or a single Zone may be selected for with each logic input trigger added to the Event.

Action Type   This drop list has the following options:

- **Live Page** – Route audio from a source to designated zone group.

- **Play Message** – Play a pre-recorded message to designated zone group.

- **Mute** – Mute all audio in the zones of the designated zone group

    Depending on the choice of action, the other controls/properties may change. See the **Action Types** chapter for details on configuring these actions.

Priority   This drop list is used to select the priority level for this action. These are defined under the General Settings page.

Zone Group   Select the destination for this action.

Chime   Pre-announcement chime to use with this action.

Audio Source   (Live Page type only) The source for the live audio.

Message   (Play Message type only) The Message from the Recorded Message Library to play
                   when this action starts (after the optional chime).

Repeats   (Play Message type only) The number of times to play this message. A value of zero is
                   the same as a value of one (1), i.e., play once.

Repeat Interval   (Play Message type only) The time between repeats (starts) of the message if
                   repeats is greater than 1.

If the Input Type is "Set Fault" or "Clear Fault", the following controls/properties appear and the Input
Triggers grid disappears.

Fault Number   The identifier for this fault in the range of 1..255.

> *Note 1: It is the responsibility of the user to assign Fault Number values to input triggers
> which are unique across all input events, unless it is desired to have multiple inputs
> trigger/clear the same fault in the system.*
>
> *Note 2: When setting up separate logic triggers for Set Fault and Clear Fault actions,
> one must be careful to match up the Fault Number values used in these two separate
> triggers.*

Fault Description   The fault string presented to the user, e.g., on the LCD fault list.

Fault Category The choices here are:

- **Other Trouble** – Not a Power or Zone trouble fault

- **Power** – A (trouble) fault related to the power supplied to the system, since these faults are
  indicated via special indicators on the front of the 5400ACS and optionally relay status outputs.
  For example, if a logic input is connected to the power supply status output (e.g., indicating
  battery status), this category should be used.

- **Zone** – A (trouble) fault is associated with one or more zones in the system. The associated
  zone (or group of zones) is selected via the Associated Zone/Group property. When this
  category is used, a logic input trigger will be used to indicate that the associated zone or zones
  are in the fault condition on any fault readouts.

- **Supervisory** – A supervisory fault, rather than trouble type.

Logic Input   Which logic input is used to indicate this fault set or clear condition.

Associated Zone   (Fault Category of Zone only) Which zone should be marked as in fault when this
                   fault occurs.

4.7.1   Set Status Triggers

Since the Set Status triggers work a little differently than the other triggers. A "Status" can be thought of as a slots identifier by an integer number. What the Set Status trigger type does is assign a label or description (including blank text) to the Status (slot). The currently displayed label/description on the touch screen mic station is the last Status to be set by any logic input trigger.

What edit boxes appear in Designer depend on which Input Type (Do Once, Momentary or Toggle) is selected. The three views for these three input types are shown in the figures below.

Note, in all three cases, **Status Numbers(s)** can be single values, multiple values (separated by commas), range of values (denoted by a dash) and combinations. Value entries for this field are:

- 3
- 1-5
- 1,3,5
- 1-5,7,10

For the Do Once input type, there is only one description that can be assigned to the Status Numbers(s) (slots) when that trigger condition (defined by Input State) occurs. If one wishes this status description to be applied at start up, then one checks the **Status on Start** checkbox.

For the Momentary input type, one defines what description to apply to the Status for each of the open and closed contact input conditions, via the two edit boxes provided. Note, if one wishes to clear the Status description on one of the conditions, then that edit box should be left blank.

For the Toggle input type, there are also two descriptions labeled **Toggle 1 Status Description** and **Toggle 2 Status Description**. Sequential trigger conditions cycle between the two descriptions for the Status Number(s) entered. Which description is applied to the Status Number(s) at startup is determined by the drop list box **Status on Start.**

An example using only Do Once actions might be:

- Logic Input: 1   Status Number(s): 1   Description: Light Bank 1 ON
- Logic Input: 2   Status Number(s): 2   Description: Light Bank 2 ON
- Logic Input: 3   Status Number(s): 3   Description: Light Bank 3 ON
- Logic Input: 4   Status Number(s): 1-3   Description: *all lights off*

4.8   Paging Station Templates Page

4.8.1   Introduction

Templates are definitions of what buttons or other controls on a paging station do what functions. Templates defer by whether they are for the 16-button 5416CS or the touch screen 5450CS. Templates defined on this page can be either assigned to specific paging stations or for the 5450CS assigned to specific users would log into the mic station using their password. In the Paging Station Templates Page, there is a list box on the left as shown in the example in Figure 4-42 that has two groups, one for each template type, with any defined templates listed underneath the group. The groups may be expanded or contracted via the + and – icons beside the groups in the list.

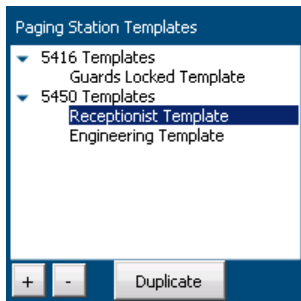## Figure 4-42:   Paging Station Templates List Box

New templates are added or deleted via the [+] and [-] buttons at the bottom of the list box. When the Add ([+]) button is pressed, a New Template pop-up, such as the example in Figure 4-43 appears. One selects the template type (5416CS or 5450CS) in the top drop list box, fill in the Name and click on the "Create" button.
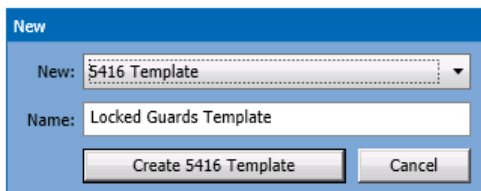

Figure 4-43:   New Template Pop-up

4.8.2   5416CS Template Details

The 5416CS Template Setup page appears as in the example, in Figure 4-44. The basic properties of the template are explained in the text which follows. When a new template is created, unlike the example in the figure, all the buttons will have text of the form "Template Button X", where X is 1 to 16.
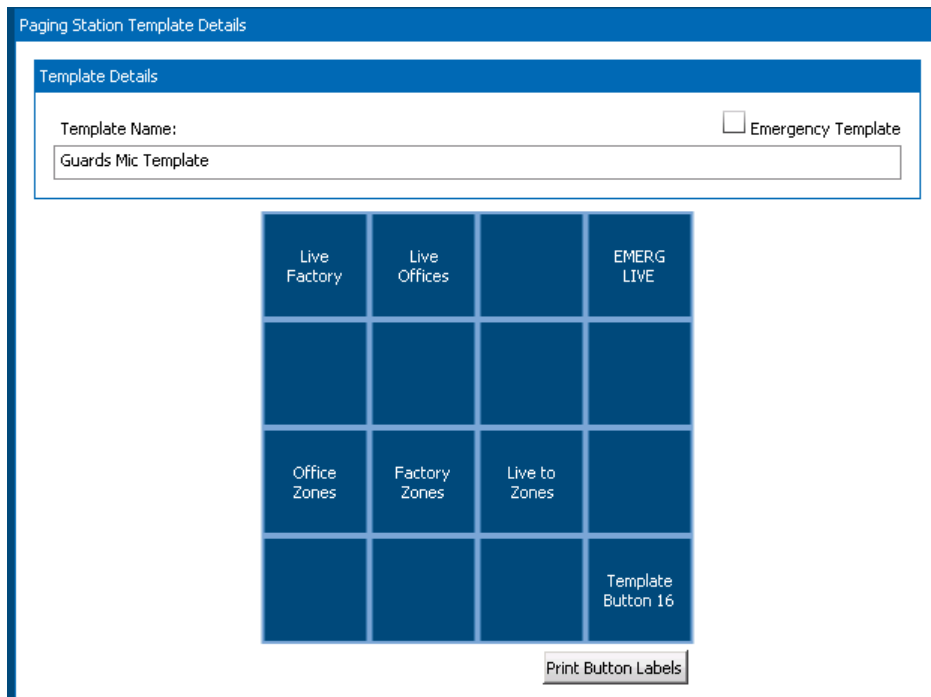

Figure 4-44:   Example 5416CS Template Details

Template Name   The descriptive string which appears in the Template List Box and in drop list selections elsewhere in the Designer.

Emergency Template Flag that indicates whether mic stations with this template loaded will display System in Alarm and System in Fault states on its LED indicators. That is, whether the paging stations getting these templates are used at emergency operator positions.

Print Button Labels   This button will generate properly sized button labels in black and white. If printed on normal paper with a laser or inkjet printer and cut out, they can be placed under the button caps of the mic station so the users know what the buttons do.

4x4 Button Grid   Representation of the 16 button keypad on the 5416CS. One can define the button labels and actions as described below.

To edit a button, one clicks on the button in the 4x4 grid. This highlights the button by changing the background to green as shown at right. When selected, an Action Button Details box appears as shown in Figure 4-45. Since not all properties/controls fix within the window, one must scroll this details box down to see all the properties/controls. The additional properties one must scroll to see are shown in the lower half of the figure. The properties/controls that appear in this area will vary depending on the type of action being defined, e.g., Play Message vs. Live Page. What is shown in Figure 4-44 are the Live Page properties/controllers.

Figure 4-45:   5416CS Button Details

The properties/controls that appear in the details area are as follows:

Caption   The label for the button. The caption will auto-wrap to fit the left-right space of the button. However, if one wishes to break lines in other places, the two-character new-line sequence of "\n" may be used. For example. If one simply types in the caption "High Five", it will appear on one line centered in the button. If one types in the caption "High\bFive", then "High" and "Five" will appear on two lines.

Toggle   Flag indicating that this button should have toggle behavior, where pressing it the first time initiates the action and pressing it a second time will stop the action. When not checked, the button will only initiate the action which then must run its course or be terminated by other means such as the Silence All Alarms functions on the 5400ACS.

Button Result What happens when the button is pressed. The options are the following:

- **Do Nothing** – No function is defined for this button (button label is forced to blank).

- **Do Action** – Initiate an action as defined by the other properties/controls. For details on configuring actions see the **Action Types** chapter of this document.

- **Play Alarm** – Initiate an alarm. If this is selected, the Alarm selector control as shown below appears instead of the other controls shown in Figure 4-44. With this selector, one can select which defined Alarm to initiate.

- **Toggle Zone/Zonegroups** – This button is used to select a zone or a zone group to be used with a Do Action type button. This allows the Do Action buttons to have variable destinations depending on which of the Toggle type buttons are selected at the time. When this option is selected, the Zone/Zone Group selector control as shown below appears instead of the other controls shown in Figure 4-45.

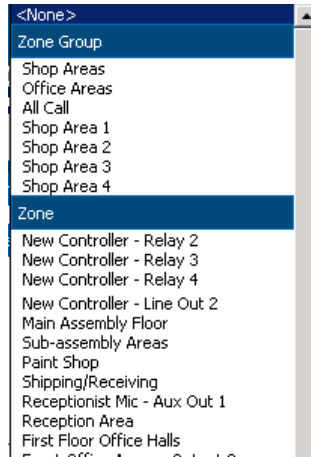   Opening the drop list box brings up the Zone/Zone Group Selector as shown in Figure 4-46.

Figure 4-46:   Zone/Zone Group Selector

4.8.3   5450CS Template Details

The 5450CS Template Setup page appears as in the example, in Figure 4-47. The basic properties of the template are explained in the text which follows. When a new template is created, unlike the example in the figure, all the buttons will have text of the form "Template Button X", where X is 1 to 4.
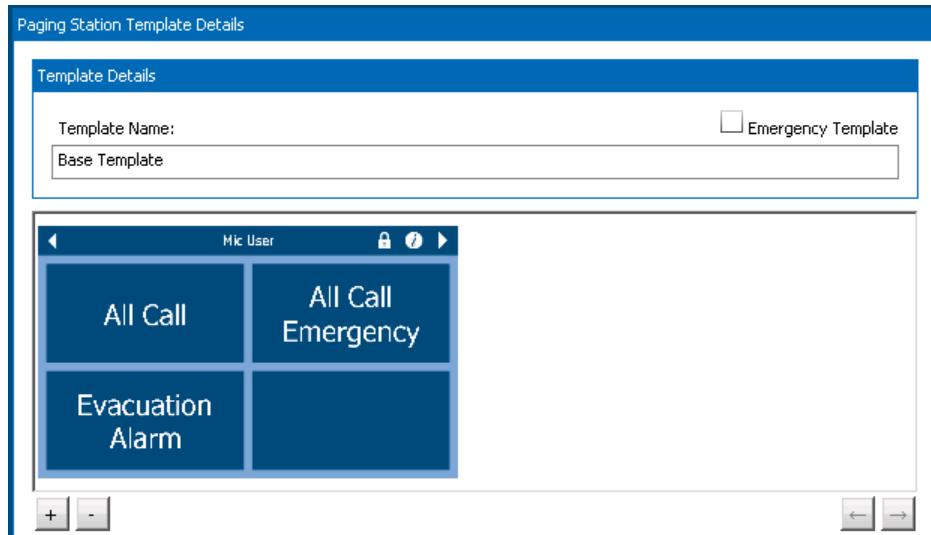

Figure 4-47:   5450CS Template Setup Page

Template Name   The descriptive string which appears in the Template List Box and in drop list selections elsewhere in the Designer.

Emergency Template   Flag that indicates whether mic stations with this template loaded will display System in Alarm and System in Fault states on its LED indicators and provide special pages to view Alarms, Faults and Zone Status. That is, whether the paging stations getting these templates are used at emergency operator positions.

Template Pages   The main area is a place to show one or more template pages defined for the selected template. In the example in figure above, there is only one page with four buttons. Additional pages may be added by clicking on the Add [+] button shown. Or pages may be deleted by clicking on the Delete [-] button. Pages may be re-ordered by clicking on the left [←] and right [→] arrow buttons, when one of the pages is selected. Alternately pages may be re-ordered by dragging a page left or right.

Clicking on the Add [+] button brings up the Add Page Selector pop-up as shown below in Figure 4-48. Note, there are currently six styles of pages available (more may be provided in future releases of the Designer) as shown slightly larger in Figure 4-48 and listed below:

- **2, 4, 8 and 16 button pages** – These pages have N buttons on a page that can be individually configured.

- **Icon page** – This page has slots for 40 icons which may be configured as web camera feed displays or generic web page displays, such as to access additional functions in a system.

- **Zone picker page** – This page has a scrollable list of zones or zone groups on the left and found buttons on the right, which can be configured as alarms or actions to the selected destination zones from the picker on the left.

- **Background Music Control page** – This page is used to select background music and adjust volume for selected areas (zones or zone groups) in the system.
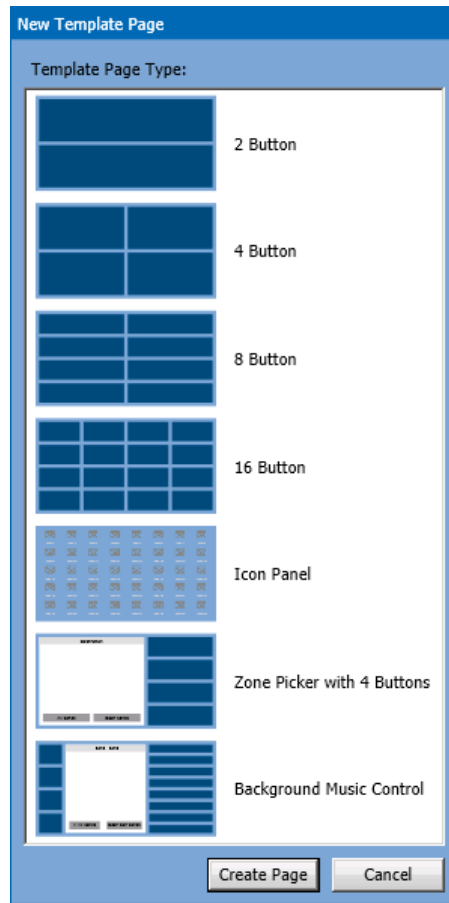
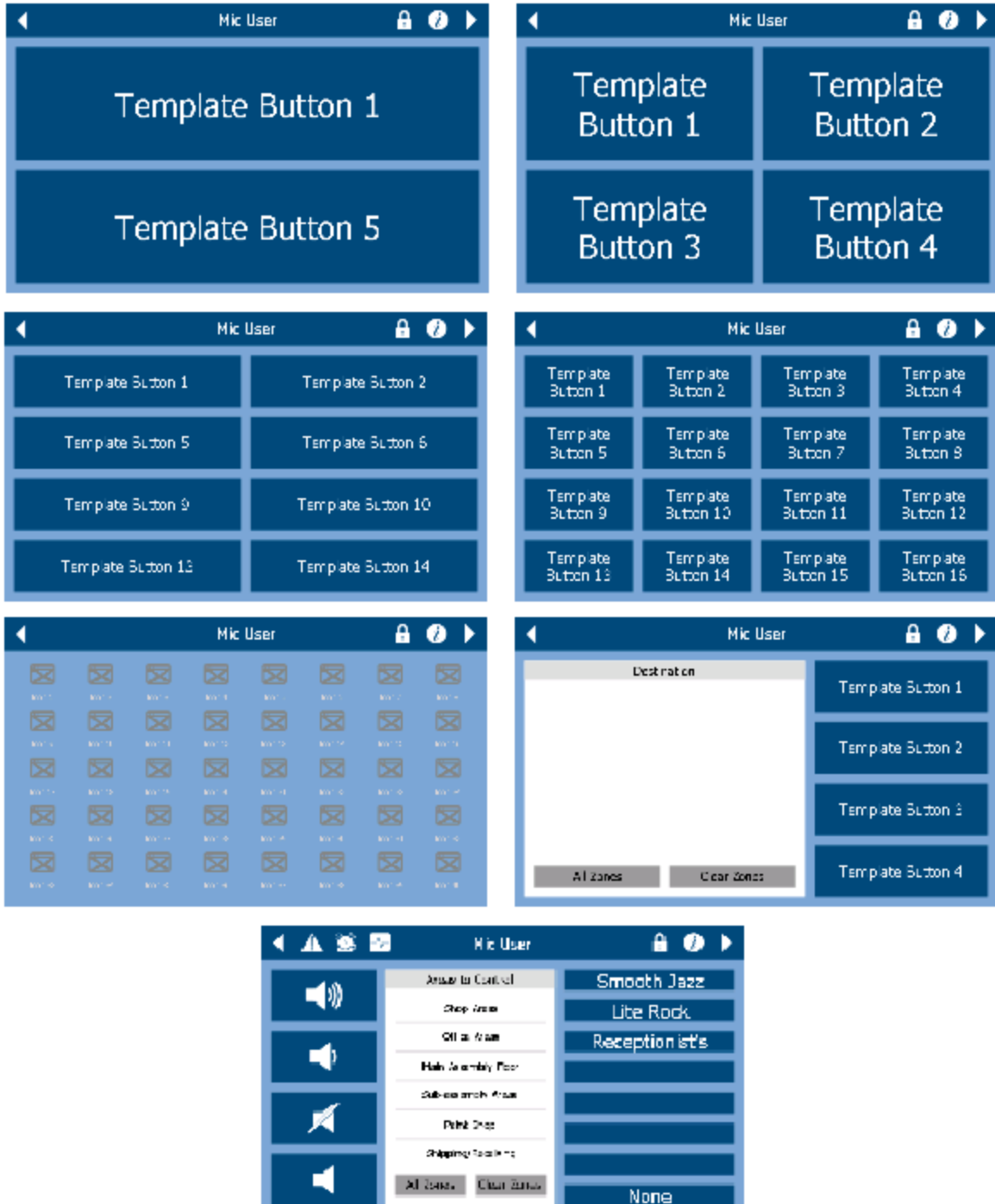**Figure 4-48:   Add Page Selector Pop-up**

Figure 4-49:   5450CS Template Page Options

To Edit a button in any of the 2, 4, 8 or 16 button template pages, one clicks on the button in the page depiction. This selects the button and turns it to a green background and brings up the button details area below it such as shown in Figure 4-50.
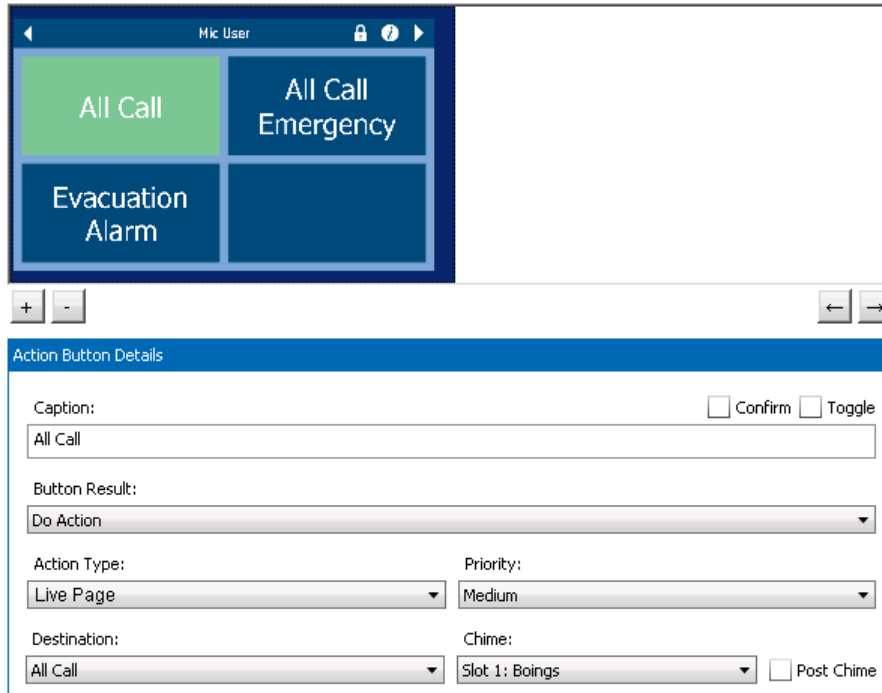
Figure 4-50:   5450CS Template Button Details

Some of the properties/controls shown will vary depending on choices made in Button Results and Action Type controls. The properties available include:

Caption   The label for the button. The caption will auto-wrap to fit the left-right space of the button. However, if one wishes to break lines in other places, the two-character new-line sequence of "\n" may be used. For example. If one simply types in the caption "High Five", it will appear on one line centered in the button. If one types in the caption "High\bFive", then "High" and "Five" will appear on two lines.

Confirm   Flag indicating that the paging station user should be presented with a Yes/No prompt, and have to answer "Yes" before the action is initiated. For example, one may wish to put this kind of confirmation on Do Alarm type initiations.

Toggle   Flag indicating that this button should have toggle behavior, where pressing it the first time initiates the action and pressing it a second time will stop the action. When not checked, the button will only initiate the action which then must run its course or be terminated by other means such as the Silence All Alarms functions on the 5400ACS.

Button Result What happens when the button is pressed. The options are the following:

- **Do Nothing** – No function is defined for this button. (Button label is blank.)

- **Do Action** – Initiate an action as defined by the other properties/controls. For details on configuring actions, see the **Action Types** chapter in this documentation.

- **Play Alarm** – Initiate an alarm. If this is selected, the Alarm selector control as shown below appears instead of the other controls shown in the figure above. With this selector, one can select which defined Alarm to initiate.

Alarm:
Evacuation Alarm

To configure the **Icons Page**, one clicks on one of the 40 icons on the page. This changes its background to green and brings up the icon details below it as shown in Figure 4-51.
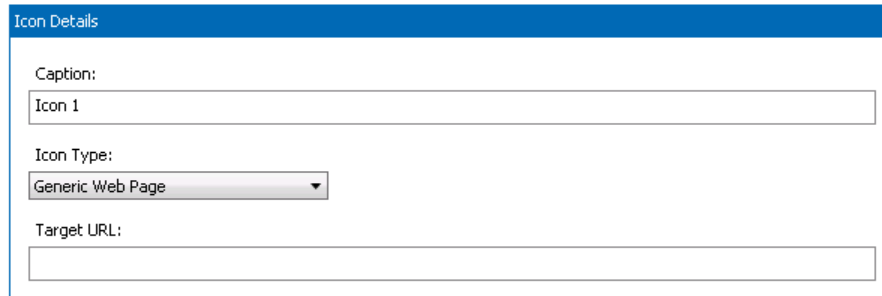
Icon Details

Caption:
Icon 1

Icon Type:
Generic Web Page

Target URL:

Figure 4-51:   5450CS Template Icon Details

Icon Type   The choices in this control are:

- **<Unused>** - This icon is not used and will be blanked on the paging station.

- **Generic Web Page** – Call up a web page as defined in the Target URL.

- **Security Camera Feed** – Call up the images from a web camera that resides on the same network as the system. Optionally, the icon can be configured to do a live page to the area that the camera is viewing.

Target URL   This is the web address of the Generic Web Page to call up when this icon is pressed. This should be a complete properly formed URL (Uniform Resource Locator) address, including any protocol preface such as "http://".

If the Icon Type of Security Camera Feed is selected, then the following properties/controls appear:

Zone / Zone group   Priority:
Please Select Zone Or ZoneGroup   ... Clear   Medium

Priority   This drop list is used to select the priority level for this action. These are defined under the General Settings page.

Destination   The optional destination enables the paging station operator to do a Live Page by clicking on the Live Mic icon displayed with the security camera feed (shown at right). This Live Page will be to the zone or zone group defined in this control and at the priority selected in the Priority control. The zone or zone group is selected by clicking on the […] button to call up the Zone/Zone Group Selector pop-up which is shown in Figure 4-45.

To configure the **Zone Picker** page, one must configure both what destinations are on the picker list and what actions are on the four buttons on the right. The buttons are configured similarly to the buttons on the other template page types. For details on configuring these, see the **Action Types** chapter in this documentation. To configure the zone list, one clicks on the list area on the left, which brings up a details section as shown in Figure 4-52. In this area, one can enter the text to appear at the top of the list, and create the list to choose from. One clicks on the [+] button to call up the zone/zone group selector window (see Figure 4-53) to add a zone or zone group to the list. The entries can be rearranged by selecting the entry and pressing the up/down ([↑]/[↓]) buttons to move the entry.
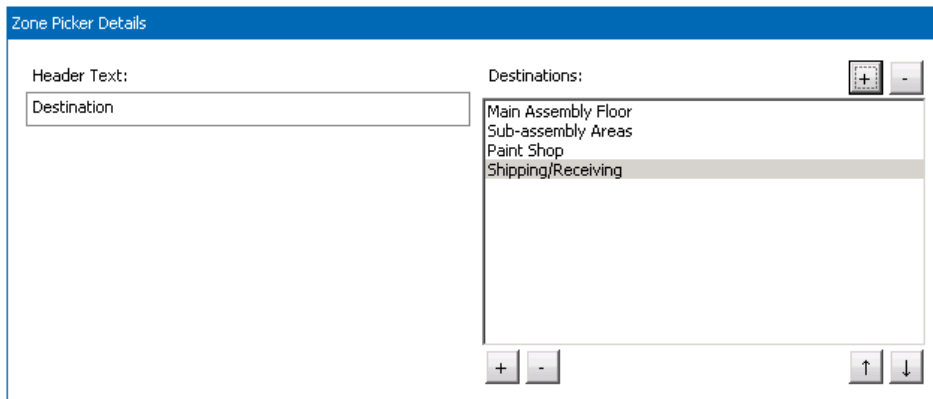
MiTek
Communications
Group

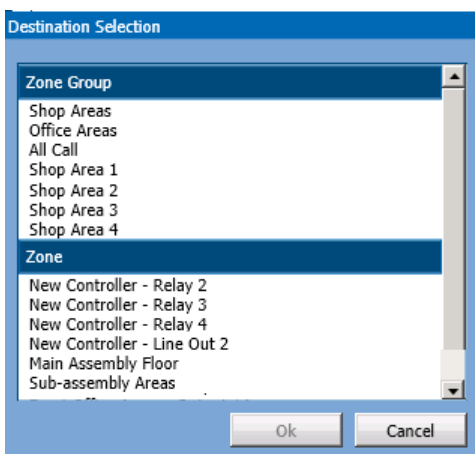**Figure 4-52:   Zone Picker List Details**

Figure 4-53:   Zone/Zone Group Selector

To configure the Background Music Control page, one configures the destinations exactly as shown above in Figures 4-52 and 4-53 for the Zone Picker page. Then, one configures the eight BGM selection buttons on the right by clicking on a button and filling in the two fields that appear as in Figure 4-54.
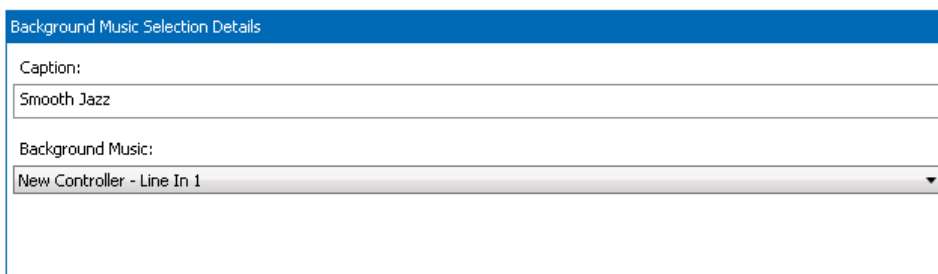

Figure 4-54:   Background Music Selection Details

Caption   Supply the caption to appear on the button in this edit box.

Background Music   Select the music source (audio input) in this drop list.

4.9   Paging Station Users Page

The 5450CS allows for user login, with each user (account) having its own template. This allows situations where some users may have access to non-alarm actions only and emergency responders can log in to any 5450CS and have access to alarm actions instead. Paging Stations Users are defined on this page. On the left side of the page is a list box that shows all the currently defined users such as the example shown in Figure 4-55.
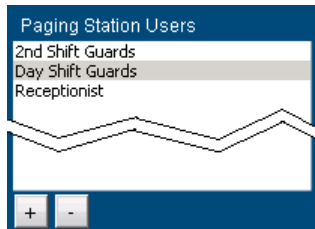

Figure 4-55:   Paging Station Users Page
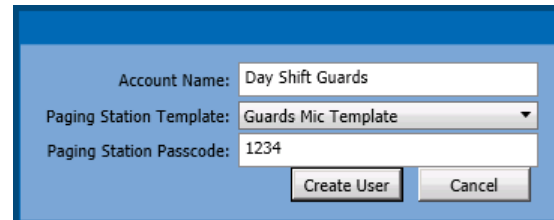
Figure 4-56:   New User Pop-up

Users are added or deleted via the [+] and [-] buttons below the list box. Clicking on the Add [+] button brings up the New User pop-up as shown in Figure 4-56.

The properties/controls in this pop-up are as follows:

Account Name   The name/description of this account. This is the label that appears in the paging station users list box.

Paging Station Template   The 5450CS template that this user gets when they log into the paging station.

Paging Station Passcode   This is the numeric password to user on the paging station to log into it.

Create User   Create the user account in the project and close the pop-up.

Cancel   Exit the pop-up without creating a new user account.

If one selects a User in the list box, the details of this user are displayed as in Figure 4-57 and are available for editing.
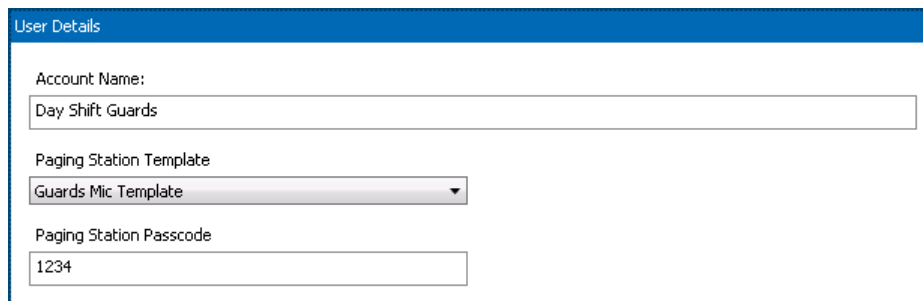

Figure 4-57:   Paging Station User Details

The fields in the details view are the same as described above for the New User pop-up.

MiTek

Communications Group

4.10   Scheduled Events Page

The Scheduled Events Page has a list box on the left that lists all defined scheduled events such as in the example of Figure 4-58. Events may be added or deleted via the [+] or [-] buttons. Clicking on the Add [+] simply creates a new entry in the list called "New Scheduled Event".
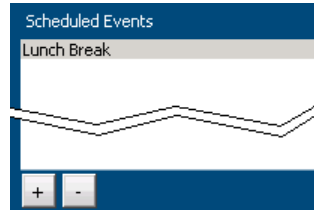

Figure 4-58:   Schedule Events List Box

When one selects an event in the list box, its properties appear in the details area to the right such as in the example of Figure 4-59. The text below describes the properties/controls in this area.
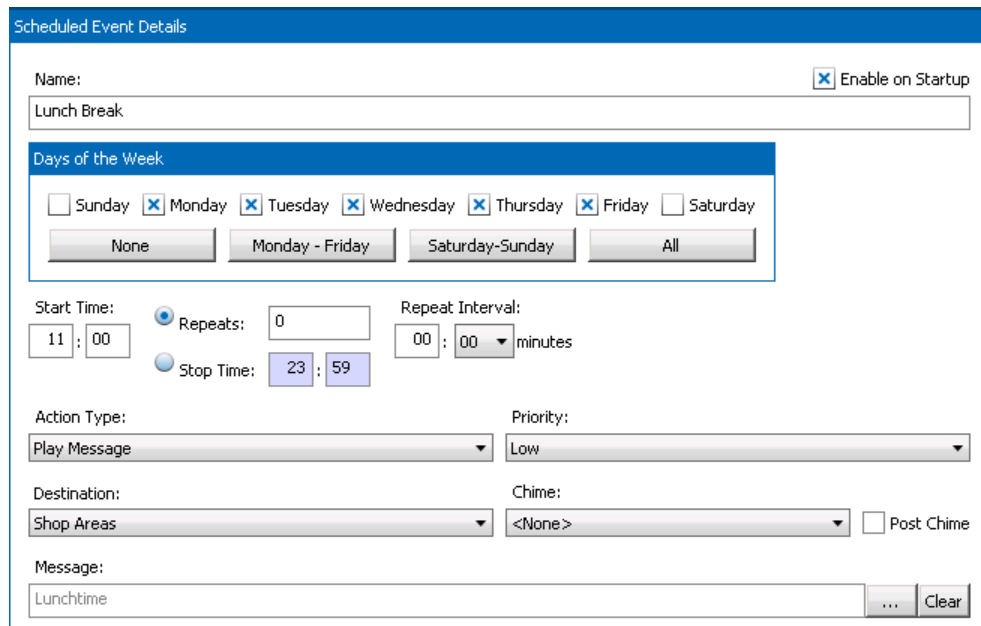

Figure 4-59:   Scheduled Event Details

Name   The name/description of this event. This label appears in the list box.

Enable at Startup   Whether this scheduled action should be active when the system starts. Those that are not active, can be enabled via some action such as by a user at a paging station.

Days of the Week   Which days of the week this event is triggered on. The check boxes may be individually checked or one may use the shortcut keys immediately below to select: None, Monday-Friday, Saturday-Sunday or All days of the week. Note, if no days are selected, the event will not ever be triggered.

Start Time   When to trigger the event on the designated days of the week.

Repeats / Stop Time   One may designate whether the event repeats N times (N supplied in the edit box to the right of "Repeats:" or repeats until the stop time designated beside that label. The radio buttons indicate which option to use.

Repeat Interval   The time between repeats (starts) of the message if repeats is greater than 1 or the stop time is greater than the start time.

Action Type   This drop list has the following options:

- **Play Message** – Play a pre-recorded message to designated zone group.

- **Mute** – Mute all audio in the zones of the designated zone group

- **Route BGM** – Route a background music source to selected zone group.

- **Adjust BGM Volume** – Adjust the background music volume in a selected zone group up or down.

- **Mute BGM** – Mute background music in a selected zone group.

- **UnMute BGM** – Unmute background music in a selected zone group.

Depending on the choice of action, the other controls/properties may change. For details on configuring actions, see the **Action Types** chapter of this documentation. See this section for information on additional controls/fields that appear in this area.

4.11   Background Music Page

Background Music (BGM) is configured on the Background Music setup page as shown in the example in Figure 4-60. All audio inputs in the system which are available for BGM routing are listed in the list box to the left. These inputs include the two auxiliary inputs on the 5400ACS and each auxiliary input on a 5450CS or 5416CS paging station.
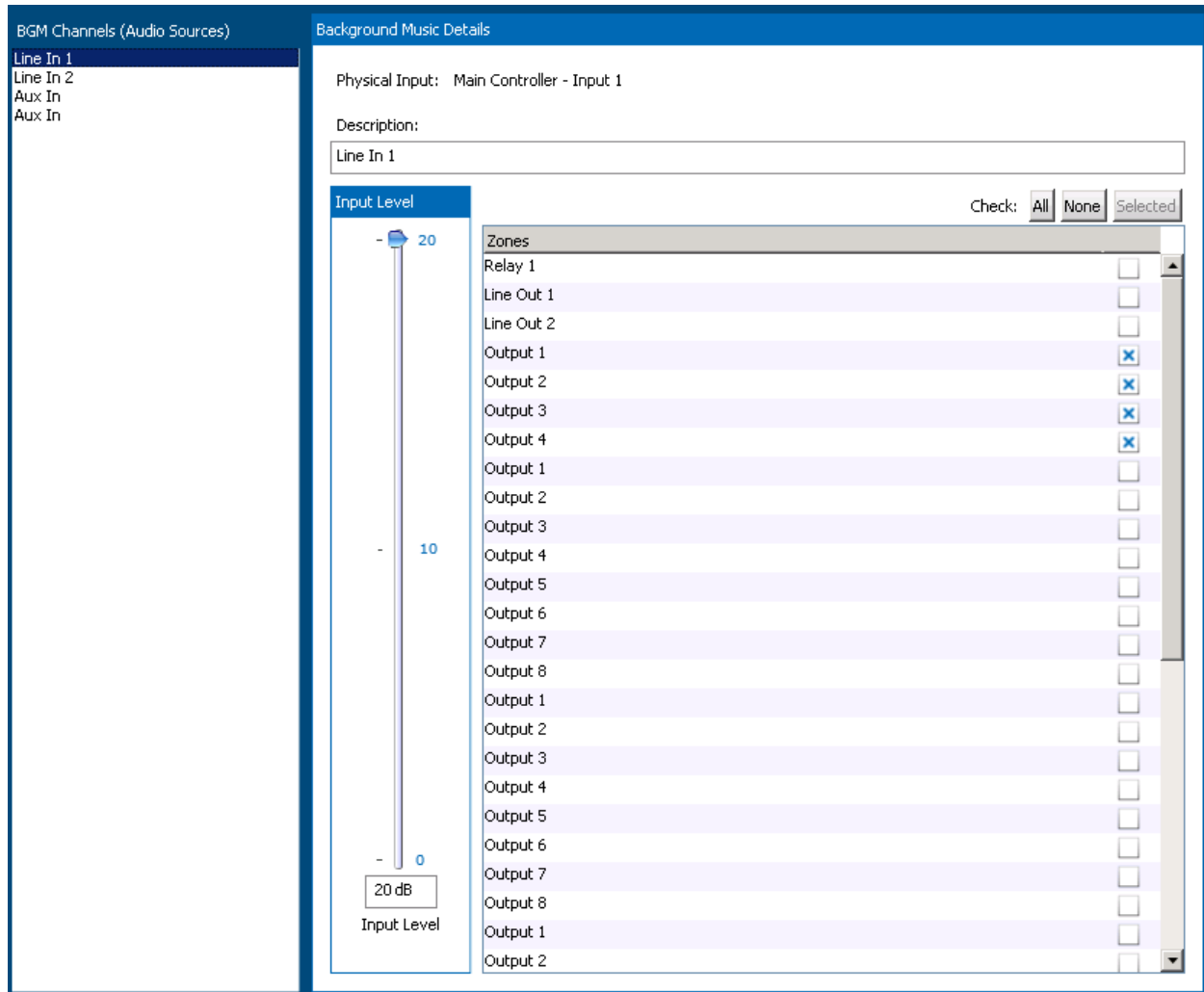

Figure 4-60:   Designer Background Music Setup Page

When one of the audio inputs in the list box is selected, particulars of where it is routed are shown in the details area on the right. One may change the routing and adjust the audio input level in this area. The controls in this area are:

Physical Input Where this input comes from in terms of equipment and channel information.

Description   The name/description for this audio input. For example, one may wish to give a meaningful name like "Satellite Music Feed" or "CD Player" to better describe this music input to the system.

Input Level   The input level may be adjusted between 0 and +20 dB either by dragging the slider or by entering a value in the edit box.

Zone Checkboxes   The selected audio input can be routed to zones by checking the check box for the desired zones in the zones list box. Convenience buttons are provided to select All zones, No(ne) zones or those zones currently selected via Click, Ctrl-Click and Shift-Click operations on the zone list (standard Windows procedure to pick multiple items). If zones are already routed to a different audio input, then the zone checkboxes will be disabled for those zones and the message "*Currently Listening to - <physical input>*" will be displayed as in the example in Figure 4-61.
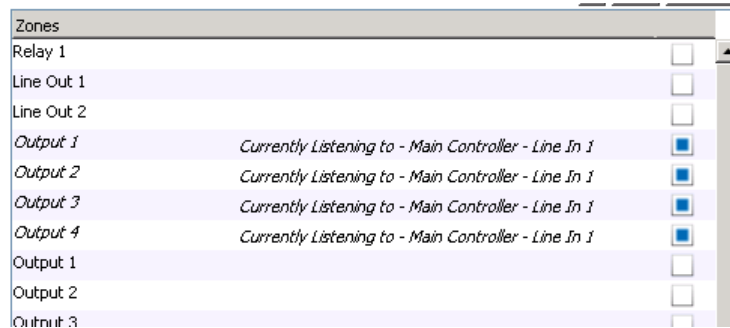

Zones		
Relay 1		☐
Line Out 1		☐
Line Out 2		☐
Output 1	*Currently Listening to - Main Controller - Line In 1*	◼
Output 2	*Currently Listening to - Main Controller - Line In 1*	◼
Output 3	*Currently Listening to - Main Controller - Line In 1*	◼
Output 4	*Currently Listening to - Main Controller - Line In 1*	◼
Output 1		☐
Output 2		☐
Output 3		

Figure 4-61:   Example of Zones Selected for Other Input

4.12   External Control Page (future)

> *Note: This is an advanced feature that may require additional factory training or technical assistance. External Control is also a feature that may not be available in all versions of the controller or only by additional software licensing, and so may not appear in your copy of Designer.*

For external access to the 5400ACS controller from other workstations or IED controllers, it is necessary to map various entities in the system to numeric values that can be called out in the network protocol. This mapping is done on this page The External Control Page has four subsections: Sources, Zone / Zone Groups, Priorities and Messages.

The Sources sub-page is shown in Figure 4-62. The actual paging stations and audio sources that will appear depend upon the System Devices in the particular project. If a paging station or audio source needs to be accessed via an external controller, then one should assign a *unique* External ID in the appropriate edit box on the page. (That is, unique to this sub-page.)

Figure 4-62:   External Control Sources Sub-Page

The Zones/Zone Groups sub-page is shown in Figure 4-63. The actual zones and zone groups that will appear depend upon the System Devices in the particular project. If a zone or zone group needs to be accessed via an external controller, then one should assign a *unique* External ID in the appropriate edit box on the page. (That is, unique to this sub-page.)
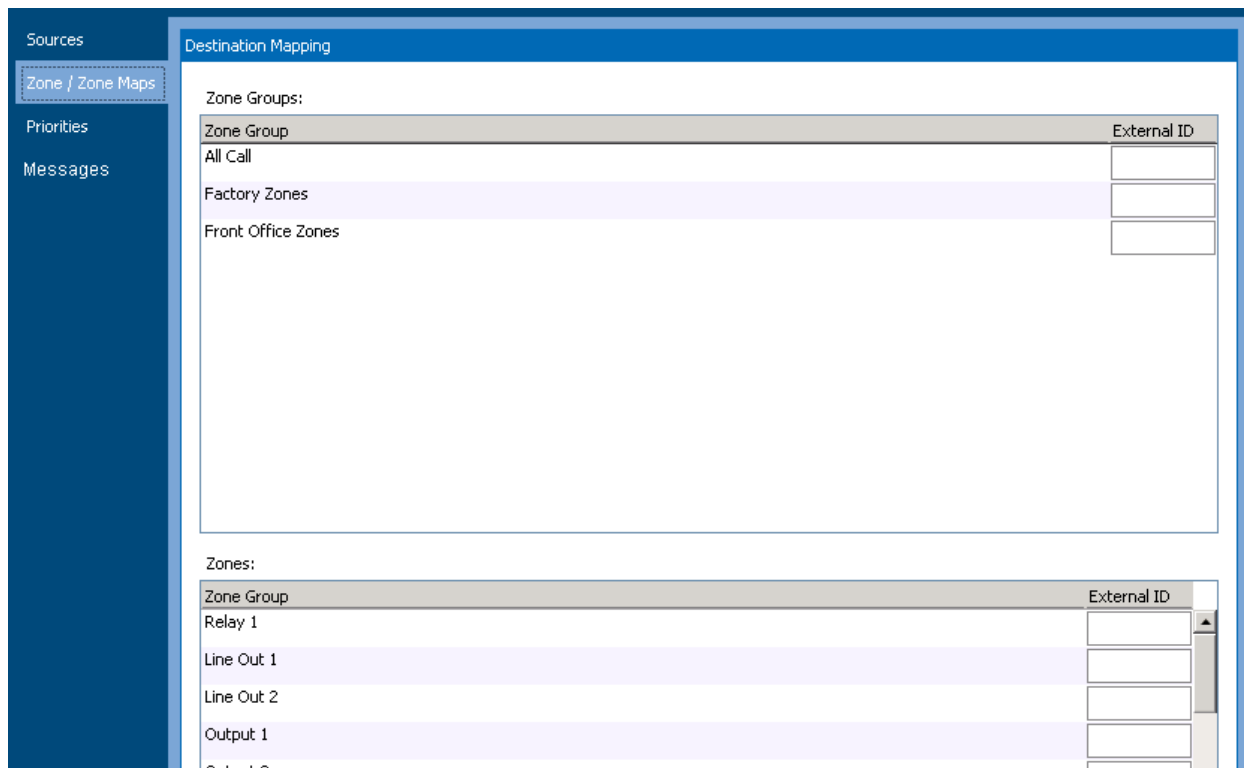

Figure 4-63:   External Control Zone/Zone Groups Sub-Page

The Priorities sub-page is shown in Figure 4-64. The priorities that will appear depend upon the settings in the particular project. If a priority level needs to be accessed via an external controller, then one should assign a *unique* External ID in the appropriate edit box on the page. (That is, unique to this sub-page.)
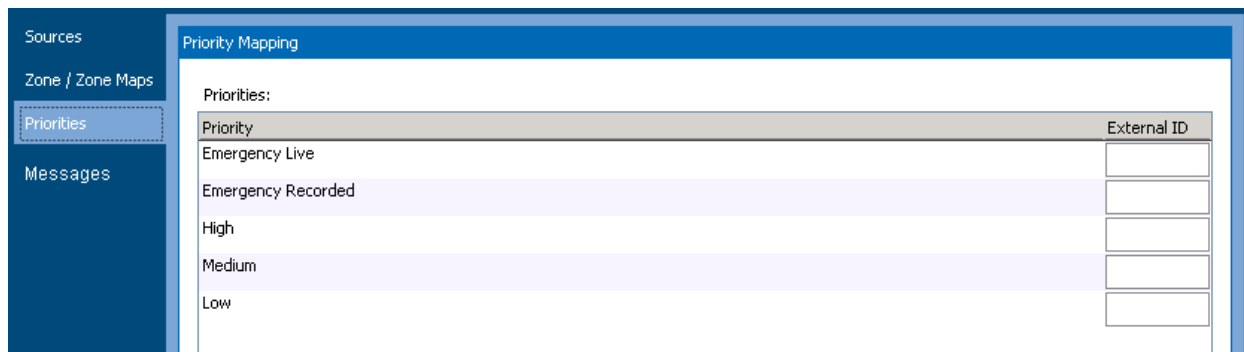

Figure 4-64:   External Control Priorities Sub-Page

The Messages sub-page is shown in Figure 4-65. The messages that will appear depend upon the settings in the particular project. (In some IED documentation, messages are referrered to by the term "Takes".) If a message/take needs to be accessed via an external controller, then one should assign a *unique* External ID in the appropriate edit box on the page. (That is, unique to this sub-page.)
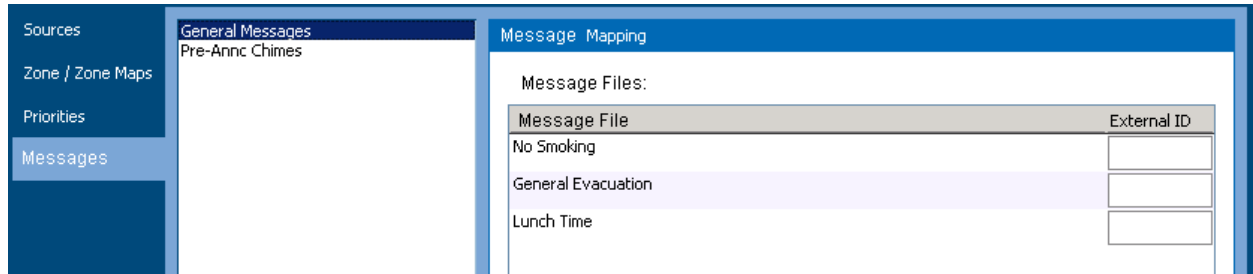

Figure 4-65:   External Control Messages Sub-Page

5. Device Configuration Tool

5.1   Introduction

Prior to use in a system, each device: controller, digital zone manager, paging station or auxiliary device must be configured with a permanent IP address and in some cases other properties such system number. Part of this process makes sure that these digital audio nodes are properly linked with the control nodes in the project file.

The Device Configuration Tool (DCT) is used to discover and configure nearly all devices that may be used in the system. One exception is that the 1522LR must have its IP address and network properties set manually using the built-in web pages available on the device.

> Note: All devices except the 1522LR come from the factory configured for DHCP, which allows the Device Configuration Tool (DCT) to assign it a temporary address for communication while setting up other properties and the permanent IP address. However, if a device was previously given a permanent IP address, such as when used in a different system setup, and that IP address is on a different sub-net, it will be necessary to configure Windows network adapter on the machine hosting DCT with IP addresses on both sub-nets (e.g., both 10.x.y.z and 192.168.y.z network addresses), so that DCT can talk to the device and change its IP address over to the new assignment.

The sections which follow cover the following configuration topics:

- Device Configuration Tool overview

- Device Configuration Tool specific configuration operations

5.2   Device Configuration Tool Overview

The Device Configuration Tool is launched from the Tools menu of the GLOBALCOM 5400 Series Designer. The main window appears as in the example in Figure 5-1 below. (Actual devices shown in the list area will depend on which devices are defined in the system and are on the network at the time the tool is launched.) A grayed out device row is a device that is in the project but its corresponding device is not on the network currently (or has not been discovered yet). These devices also have a question mark icon. The icons to the left in the Link Status column indicate whether the discovered device has been (properly) matched up with a device in the current Designer project or not. The possible link status images and their meanings are as follows:

-    Device is in the project, but has not been discovered on the network.

- Discovered device is linked to a device in the project properly.

-   Discovered device is linked to a device in the project, but there is some difference in the discovered and project settings, that needs to be resolved. The DCT will automatically resolve the differences, so these icons should only appear momentarily.

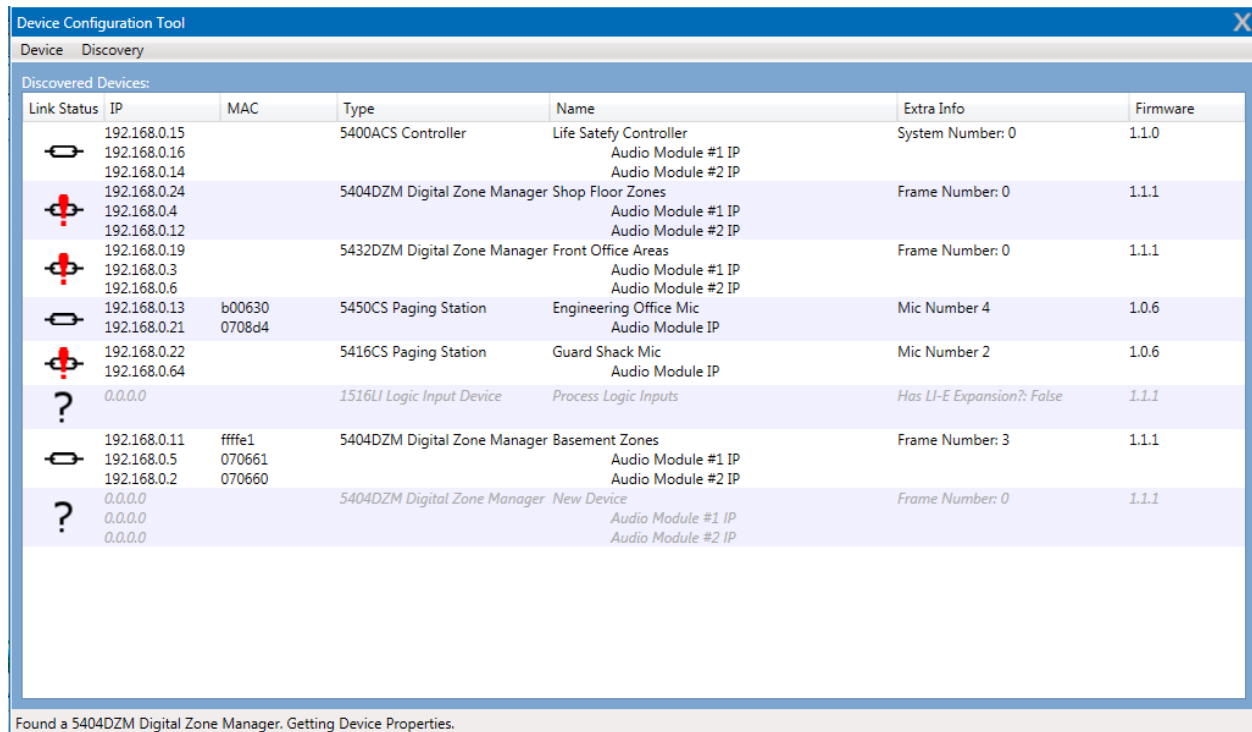-   Discovered device is not linked to a device in the project.

Figure 5-1:   Device Configuration Tool Main Window

The columns shown in the main window are as follows:

Link Status   Whether the device is discovered on the network and linked to a device in the project.

IP   The Internet Protocol addresses for the device. The top line is always the IP address of the device controller, and addresses beneath this are the IP addresses of the Dante digital audio nodes on that same device.

MAC   The Media Access Control addresses for the device. Actually, what is displayed is only the lower three bytes of the MAC address. This is combined with the vendor prefix portion to make the complete address.

Type   The device type

Name   The device name from the project.

Extra Info   Additional settings for the device.

Firmware   The reported version of firmware loaded. If there is a newer version available (part of DCT), this is shown in parentheses beneath the reported version.

The DCT has two menus: Device and Discovery. Most entries under Device apply only to the device currently selected in the list and is described in the next section.
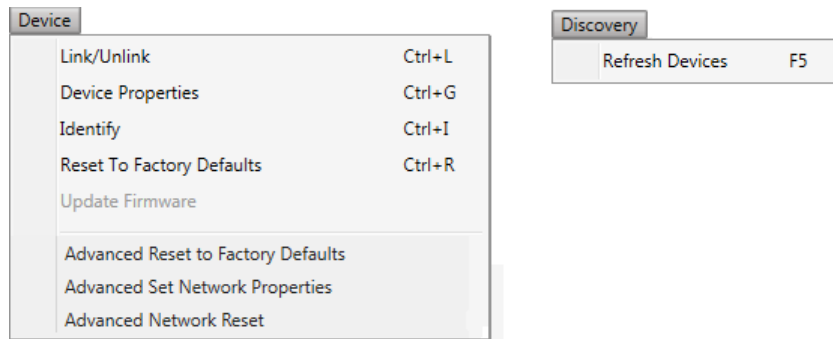

Figure 5-2:   Device Configuration Tool Menus

The Discovery menu applies to the DCT in general. The DCT goes out and discovers devices when it starts. If devices are subsequently added or turned on, they can be discovered by clicking on the **Refresh Devices** option under the Discovery menu, or by using the shortcut function key F5.

> *Note: The DCT runs its own DHCP server to assign IP addresses in the defined range for the project. There cannot be another DHCP server on the network passing out addresses in a different IP address range, or it will assign invalid addresses to the project devices.*

5.3   Device Configuration Operations

If a device is not yet linked to a device in the project, it may be linked to one or added as a new device. This is done by selecting it in the list and then choosing the **Device** menu, **Link/Unlink Device** option, or the shortcut Ctrl+L. This brings up the Link Device window shown in Figure 5-2. One selects the device to link to from the project in the drop list, then clicks on the **OK** button to apply the link choice.
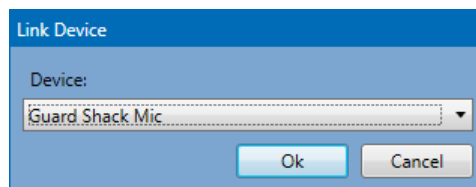

Figure 5-2:   DCT Link Device Window

If one has selected a device that is already linked and clicks on the **Link/Unlink Device** menu option, the device immediately becomes unlinked (status icon changes).

Network settings for a device can be edited by selecting the device and then choosing the **Device** menu, **Configure Device** option, or the shortcut key Ctrl+G. This brings up a Configure Device window such as the examples in Figures 5-3 and 5-4. In this window, one may edit the properties shown. If a device has only one audio module, such as a 5450CS or 5416CS, only one Audio Module IP address property will be displayed. Any special device properties that may need to be set are also shown in this window such as the "Has LI-E Expansion" for the 1516LI (which means there is a 1516LI-E attached to it or not).
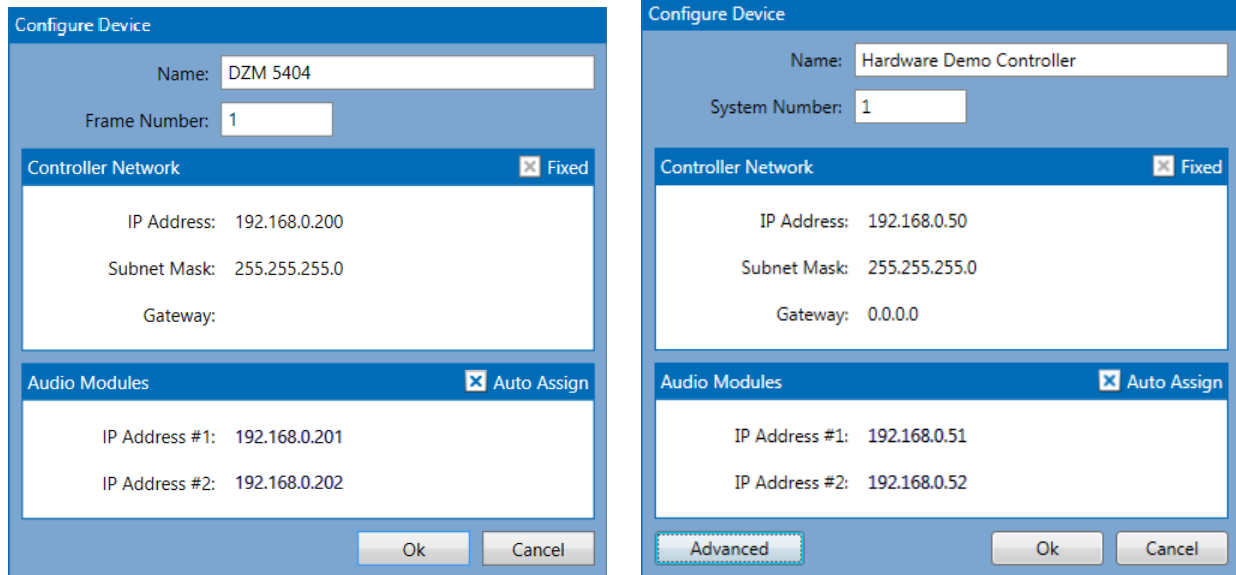
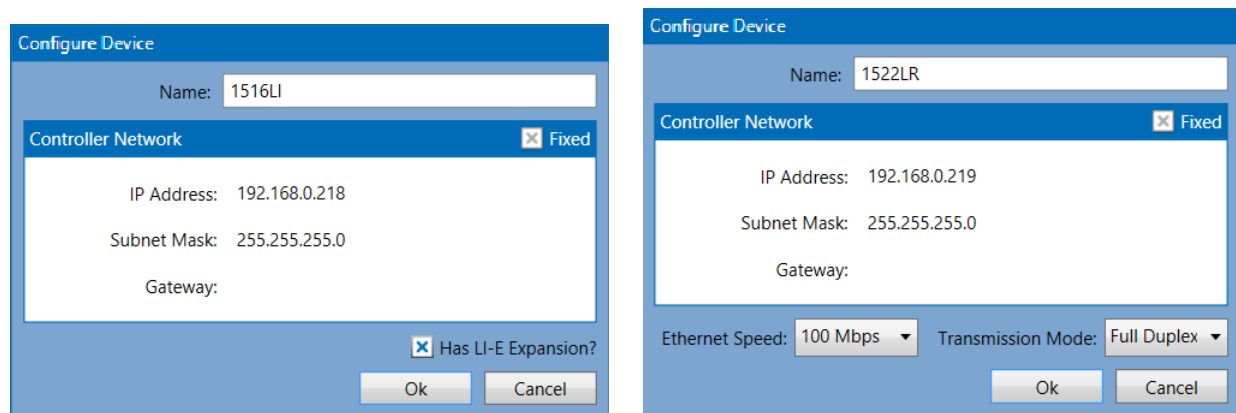**Figure 5-3:   DCT Configure Device Windows (1 of 2)**

Figure 5-4:   DCT Configure Device Windows (2 of 2)

On the 5400ACS Controller Configure Device window there is a button to call up an Advanced Settings window as shown below in Figure 5-5. In this window, one can check and set the time on the controller, define the time zone on the controller and optionally assign an NTP server for it to periodically sync to automatically. When the window first opens, it retrieves the current settings from the controller if it is on-line. To refresh any of these readings, one can press the individual **Get** buttons beside them. The **Sync** button is used to synchronize the controller to the machine that the Designer and DCT are running on. Warning pop-ups will be displayed with **OK** buttons to hide the warnings. If there is no NTP server defined, the window will display "Free-running System Clock" as in the example in Figure 5-5. To change, either this setting or the Time Zone setting, one makes the changes (e.g., enter and IP address or select a time zone) in the controls and then press the respective **Set** button.
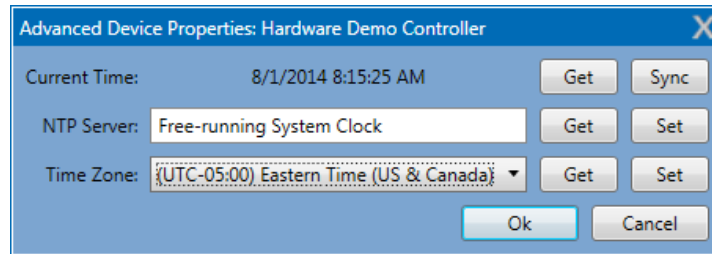
Figure 5-5:   5400ACS Advanced Settings Window

If there are multiple devices of the same type on the network and one is not sure which device is which, one can use the **Device** menu, **Identify** option to help clarify which is which. For the 54xxDZM products, this causes all the front panel LEDs to flash. For the 54xxCS products, this causes the green Ready LED and beeper to double-flash/-beep. The device will stay in this mode until the user clicks on the **OK** button on the pop-up window that appears. For a controller, most of the front LEDs will flash and the LCD display will flash all white blocks.

It is possible to undo all the settings used for a system/installation via the **Reset to Factory Defaults** option on the **Devices** menu. Selecting this option prompts for confirmation via a window such as shown in Figure 5-6 before actually resetting the device.

> Note, depending on the network setup, one may lose communication with the device after resetting it to factory defaults.
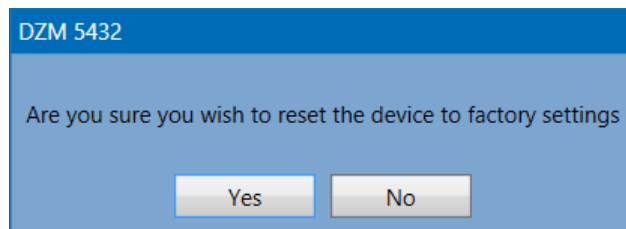

Figure 5-6:   DCT Reset to Factory Defaults Window

If it because necessary to install new firmware on the 5400ACS or one of the 54xxCS communication stations, this can be done via the **Update Firmware** option under the **Devices** menu. Selecting this option will open a standard Windows open dialog box for selecting the firmware file. Once selected, the user will first receive a prompt to enter a username and password to do this update. This information will be provided by IED along with the updated firmware files if/when an update in the field is required. The firmware updates are not applied immediately, but become part of the next project upload to the controller (which then handles the update at that time). Therefore, one can be careful to only apply the updates – taking devices offline for some period of time – at an appropriate time of low/no system activity.

> Note: When updating the 5400ACS Announcement Controller, the system will be non-functional for some period of time, up to a few minutes depending on the extent of the updates. The System Fault LED, plus the general fault LED and beeper will likely come on during this update, since the controller is "down".

If a device has been configured to be on another network, or is otherwise not discoverable even though it is on the network, it may be possible to (re)gain access to the device by doing an **Advanced Reset to Fault Defaults** operation on it. Or, one may be able to gain access by forcing it to a fixed address on the project network, via the **Advanced Set Network Properties** option. Alternately, one may be able to regain access to a device by resetting its network addressing to dynamic (DHCP). This is done via the

Advanced Network Reset option under the **Devices** menu. This brings up a window with the same fields as for the other Advanced Reset shown in Figure 5-7.
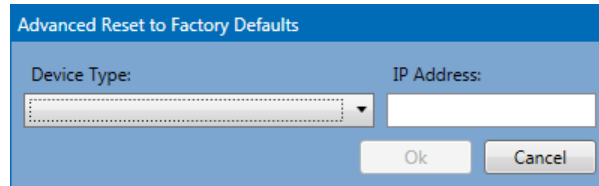

Figure 5-7:   Advanced Reset to Factory Defaults Window

On this window, one selects the type of device and then the IP address (which must be reachable with the host computer's current network settings), then click the **OK** button. The device type options are those shown in Figure 5-8 below.
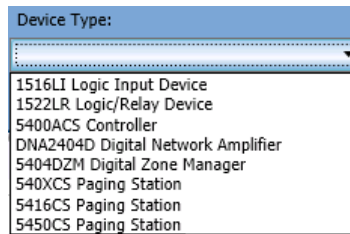

Figure 5-8:   Advanced Reset Device Type Options

If the device has a fixed address and is on a different network, as defined by the IP address and subnet mask, then it may be possible to force it to an IP address on the project's network via the **Advanced Set Network Properties** option. Selecting this menu option brings up the dialog box such as the one shown below in Figure 5-9.
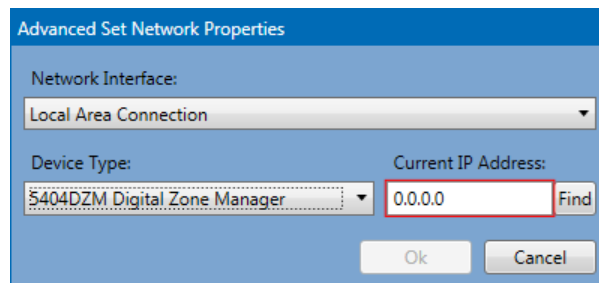

Figure 5-9:   Advanced Set Network Properties Window

One must fill in options in this window before pressing the **OK** button.

Network Interface   Which network port on the local computer to use.

Device Type   Since each type of device has a different way of configuring it, one must select the proper type of device in this drop list box.

IP Address   The current IP address of the device.

Find   After setting the Current IP Address, press this button to have DCT discover the device on the network and read back all of its current network properties.

During the Find operation, a status pop-up will appear above the dialog box. After the Find operation is completed, the dialog box will expand to show all the network properties such as the example below in Figure 5-10.
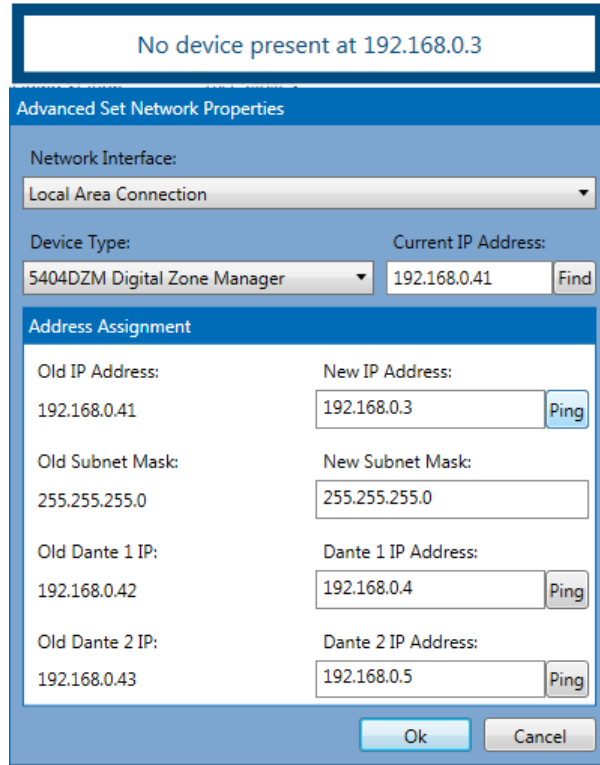
Figure 5-10:   Expanded Advanced Set Network Properties Window

The number of properties shown will vary with the type of device. In the example shown in Figure 5-10, there are three IP addresses and their subnet masks to be configured (the one subnet mask is applied to all three IP interfaces).

The DCT will attempt to find available IP addresses to use for the new values on the right. If one wishes to verify themselves that an IP address is not currently in use on the network, one simply presses the **Ping** button beside the address edit box. In the example above, the first **Ping** button has been pressed, the there is a pop-up above the dialog box that indicates this IP address did not get a PING response.

One should edit any of these settings as they see fit and then click on the **OK** button to apply the settings to the device. Progress will be indicated via pop-ups.