SC32/SC64 Help

Table Of Contents

SC 32 / SC 64 1
SC 32 / SC 64 1
Overview - SC 32 / SC 64 2
Philosophy - SC 32 / SC 64 3
Front Panel 5
Controls/LEDs - SC 32 / SC 64 5
Back Panel 7
Back Panel Connections - SC 32 / SC 64 7
Card Slots - SC 32 / SC 64 9
Ethernet Connectivity - SC 32 / SC 64 13
RS-232 Connectivity - SC 32 / SC 64 14
ZC Inputs 1-6 and 7-12 - SC 32 / SC 64 15
Option Slots - SC 32 / SC 64 16
Control Inputs - SC 32 / SC 64 17
Relay Input - SC 32 / SC 64 18
OPTO Connection - SC 32 / SC 64 19
Logic Outputs - SC 32 / SC 64 20
Power Input - SC 32 / SC 64 21
Hardware 22
Spec Sheet - SC 32 / SC 64 22
Device Window - SC 32 / SC 64 28
Device Window - SC 32 / SC 64 28

Right Click Device Window Menu - SC 32 / SC 64 30
Menus - SC 32 / SC 64 31
Device Presets - SC 32 / SC 64 167
Processing Modules SC 32 / SC 64 168
Creating Panel Presets - SC 32 / SC 64 217
Scheduling - SC 32 / SC 64 218
Wiring 219
Wiring - SC 32 / SC 64 219
Ethernet - SC 32 / SC 64 222
Zone Controllers - SC 32 / SC 64 223
RS-232 - SC 32 / SC 64 224
Zone Controller Distance Limitations - SC 32 / SC 64 225
Zone Controller DIP Switch - SC 32 / SC 64 227

SC 32 / SC 64

SC 32 / SC 64

Overview

Philosophy

Overview - SC 32 / SC 64

Based on the principles of the dbx Zone processing products, the SC 32 and SC 64 Digital Matrix Processors are the new flagship products for digital matrix processing. Wizard driven configuration using HiQnet System Architect™ makes unprecedented DSP power, incredible routing flexibility and a rich palette of processing tools accessible with the minimum of training. The SC 32 and SC 64 represent the professional choice of foundation on which to build even the most demanding integrated system.

The SC 32 / SC 64 has a total analog I/O count of 32 (the SC 64 has 64), configurable in banks of eight. Eight analog input cards and eight analog output cards facilitate five different fully loaded configurations (nine for the SC 64). Analog input cards accommodate a wide range of sources with mic/line switching and phantom power per input. Two high-speed options slots provide facility for adding forthcoming high bandwidth audio transport I/O cards. All of these features are housed in a sleek 2U rack chassis.

With dedicated DSP for common processing functions and insert positions for specialized processing, the SC 32 / SC 64 offers many processing functions including Advanced Feedback Suppression (AFS™), Ambient Noise Compensation (ANC), priority ducking, parametric equalization (PEQ), delay and dynamics. The SC 32 and SC 64 have a diverse range of control options including HiQnet System Architect™ custom control panels, Ethernet, serial, contact closure, the popular ZC wall controllers and even automatically scheduled events. With so many methods of control, an SC system can truly be tailored to suit the needs and technical expertise of even the most scrutinizing contractor.

Philosophy - SC 32 / SC 64

The memory structure of the SC 32 / SC 64 consists of Attributes and Presets.

Attributes

Device attributes are global functions that affect the entire device such as the sample rate. Most of the SC 32 / SC 64 attributes are found in the Utilities section of the Tools menu (see Utilities) in the Device Window. There are some attributes that are managed directly from the Device Window, like Mutes and Solos (see Device Window below).

Device Presets

A Device Preset is a snapshot of the current state of the SC 32 or SC 64. It includes the parameter values of all of the Processing Modules in the current configuration. Device Presets are managed from the Device Window using the Preset bar (see Device Window). The Device Window shows the Processing Modules prominently as icons, where each icon represents the Processing Module in that signal path location. Double clicking on these icons allows the user access to the underlying parameters of these modules. Saving a Device Preset saves every parameter of all processing functions shown.

Files

Besides the Device Presets and Attributes that are stored on the SC device, System Architect provides additional file types that can be saved to the computer, the Device file and Venue file. The Device file captures the entire unit including all Presets stored and all Attributes of that device. The Venue File is the final extension; the Venue file is a snapshot of the entire Venue with the current Preset and Attributes of every device in the venue. The Venue file is saved from the File menu of the Venue View.

Device Window

All Presets, Processing Functions and their Parameters, as well as device Attributes of the SC 32 / SC 64 are accessed via the Device Window. In addition to these functions, the Device Window File Menu also provides the capability of saving Device files.

Front Panel

Controls/LEDs - SC 32 / SC 64

Front Panel LCD Display
Gives information relating to network configuration, current time and date, HiQnet Node Address, SC firmware version and device status

Page / Select Buttons
Allow front panel navigation

RS-232 LED
Indicates a connection to the RS-232 port

Clip LED
Gives global DSP clip indication

Sync LED
Link / activity connection

Power LED
Power present indication

Card Position Label

I/O Card Type Indication
Analog or digital, input or output indication per card position

Clip LED
Analog clip indication per channel for inputs and outputs (19.9dB)

Sync LED
Digital Sync indication per card position for SC Digital Input / Output Cards (coming soon)

Phantom Power LED
Phantom Power indication per channel for SC Analog Input Cards

Signal LED
Signal present indication per channel for inputs and outputs (-40dB)

Product Information
Product model and description

Back Panel

Back Panel Connections - SC 32 / SC 64

Card Slots

Ethernet Connectivity

RS-232 Connectivity

ZC Inputs

Option Slots

Control Inputs

Relay Input

OPTO Connection

Logic Outputs

Power Input

Option Slots
High-speed Option Slots accommodating high-bandwidth networked audio option cards (coming soon)

SC 32 - One Option Slot

SC 64 - Two Option Slots

Power Connector
IEC power connector

Fuse
Field-serviceable fuse

Control Inputs
Allow up to eight contact closures, faders or rotary potentiometers to used to control HiQnet™ parameters

Relay
Integrated relay with Normally Open (NO) and Normally Closed (NC) terminals driven from HiQnet™ parameters

Opto
Opto-isolator conducts when device is powered and functioning correctly

Logic Outputs
Allow SC 32 / SC 64 to control up to six LED's or relays

Ethernet Connectors
Ethernet connectors for SC 32 / SC 64 configuration, control and monitoring as well as integration of third party control systems using IP control (Integrated Ethernet switch allows daisy-chaining of devices within a rack)

RS-232 Port
Serial port for integration with third party control systems

ZC Ports
Allow connection of up to 12 ZC controllers (six per port) for control of HiQnet parameters

Card Position Label

Audio Connector
Balanced connections for installed I/O card

I/O Card Type Indication

Analog Input LED/Connector - Green

Analog Output LED/Connector - Orange

Digital* Input LED/Connector - Blue (coming soon)

Digital* Output LED/Connector - Yellow (coming soon)

*AES/EBU and S/PDIF

Card Slots - SC 32 / SC 64

Card Slots - SC 32 / SC 64

Configurable in banks of 8, the SC 32 and 64 provide up to 32 and 64 channels of audio respectively. Eight card slots facilitate five different fully loaded configurations (nine in the SC 64). The Analog Input card accommodates a wide range of sources with mic/line switching and phantom power per input.

I/O Card Type Indication

Analog Input LED/Connector - Green

Analog Output LED/Connector - Orange

Digital* Input LED/Connector - Blue (coming soon)

Digital Output LED/Connector - Yellow (coming soon)

*AES/EBU and S/PDIF

Card Types

Pin Out

Card Types - SC 32 / SC 64

The SC 32/64 accepts Analog Input and Analog Output cards, carrying 8 channels per card.

I/O Card Type Indication

Analog Input LED/Connector - Green

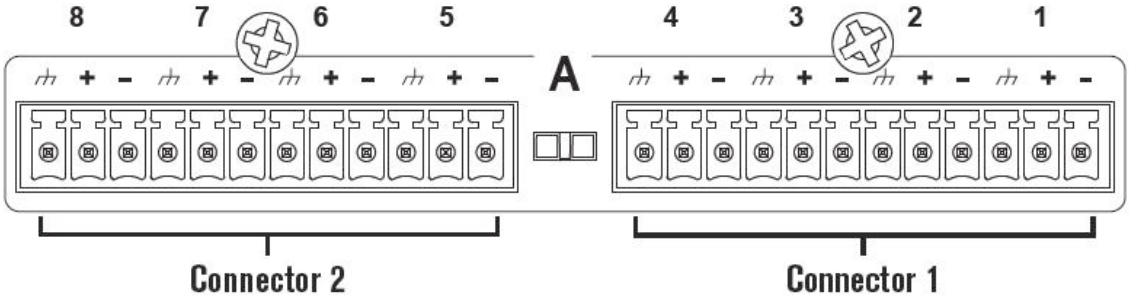
Analog Output LED/Connector - Orange

Digital* Input LED/Connector - Blue (coming soon)

Digital* Output LED/Connector - Yellow (coming soon)

*AES/EBU and S/PDIF

Pin out - SC 32 / SC 64



Overview:
The dbx SC 32 and SC 64 Analog Input and Analog Output Cards are designed to populate any of the four or eight card slots on the dbx SC 32 and SC 64 devices respectively. These analog cards enable dbx SC devices to receive microphone / line level signals and send line level signals.

The dbx SC 32 and SC 64 Analog Input Cards offer Phantom Power, configurable per channel and software controlled analog gain in 6dB steps from 0dB to 48dB.

The Analog Cards each have two Combicon connectors which are used as follows:

Analog Input Card :

- Connector 1
  - Balanced / Unbalanced Audio, Channel 1 - Mic/Line
  - Balanced / Unbalanced Audio, Channel 2 - Mic/Line
- Connector 2
  - Balanced / Unbalanced Audio, Channel 3 - Mic/Line
  - Balanced / Unbalanced Audio, Channel 4 - Mic/Line

Connector	[Mic/Line Combicon]		[Mic/Line Combicon]	
Signal	4	3	2	1
Pin	[S + -]	[S + -]	[S + -]	[S + -]

Balanced	Hot: to +	Unbalanced	Hot: to +
	Cold: to -		Link to Shield: to -
	Shield: to S		Shield: to S

Analog Output Card:

- Connector 1
  - Balanced / Unbalanced Audio, Channel 1 - Line
  - Balanced / Unbalanced Audio, Channel 2 - Line
- Connector 2
  - Balanced / Unbalanced Audio, Channel 3 - Line
  - Balanced / Unbalanced Audio, Channel 4 - Line

Connector	[Line Combicon]		[Line Combicon]	
Signal	4	3	2	1
Pin	[S + -]	[S + -]	[S + -]	[S + -]

Balanced	Hot: to +	Unbalanced	Hot: to +
	Cold: to -		Link to Shield: to -
	Shield: to S		Shield: to S

Ethernet Connectivity - SC 32 / SC 64

Ethernet Connectors
Ethernet connectors for SC 32 / SC 64 configuration, control and monitoring as well as integration of third party control systems using IP control (Integrated Ethernet switch allows daisy-chaining of devices within a rack).

RS-232 Connectivity - SC 32 / SC 64

RS-232 Port
Serial port for integration with third party control systems.

ZC Inputs 1-6 and 7-12 - SC 32 / SC 64

ZC Ports
Allow connection of up to 12 ZC controllers (six per port) for control of HiQnet parameters.

Option Slots - SC 32 / SC 64

Option Slots
High-speed Option Slots accommodating high-bandwidth networked audio option cards. (coming soon)

SC 32 - One Option Slot
SC 64 - Two Option Slots

Control Inputs - SC 32 / SC 64

Control Inputs
Allows up to eight contact closures for control of HiQnet™ parameters.

Relay Input - SC 32 / SC 64

Relay
Integrated relay with Normally Open (NO) and Normally Closed (NC) terminals driven from HiQnet™ parameters.

OPTO Connection - SC 32 / SC 64

Opto
Opto-isolator conducts when device is powered and functioning correctly.

Logic Outputs - SC 32 / SC 64

Logic Outputs
Allow SC 32 / SC 64 to control up to six LEDs or relays.

Power Input - SC 32 / SC 64

Power Connector
IEC power connector.

Hardware

Spec Sheet - SC 32 / SC 64

FRONT PANEL INDICATORS

Per channel:
48V (yellow), CLIP (red), SIGNAL (green)

Per 8 channel bank:
IN (green), OUT (orange), D-IN (blue), D-OUT (yellow), SYNC (green)

Other:
16x2 LCD display, PAGE button (orange), SELECT button (green), CLIP (red), LINK/ACT (green), RS-232 (green), POWER (green)

ANALOG INPUTS

Connectors:
Phoenix/Combicon, 3.5mm pitch

Channels:
Eight per card

Line/Mic Inputs:
Nominal gain 0 dB Electronically switchable to +6, +12, +18, +24, +30, +36, +42, +48 dB

Type:
Electronically balanced, RF Filtered

Input Impedance:
3.5 k

Maximum Input Level:
+20 dBu

Noise Floor:
-92 dBu "A" weighted

-90 dBu unweighted, 20 Hz - 20 kHz

Dynamic Range:
113 dB "A" weighted, 20 Hz - 20 kHz

110 dB unweighted, 20 Hz - 20 kHz

CMRR:
> 40 dB typical, >50 dB at 1 kHz

EIN:
< -119 dBu unweighted, 20 Hz - 20 kHz, 150 W source impedance

Phantom Power:
+48 VDC selectable per input

A/D Latency:
12/Fs

ANALOG OUTPUTS

Connectors:
Phoenix/Combicon, 3.5mm pitch

Channels:
Eight per card

Type:
Electronically balanced, RF Filtered

Impedance:
44

Maximum Output Level:
+20 dBu

Noise Floor:
-92 dBu "A" weighted

-89 dBu unweighted, 20 Hz - 20 kHz

Dynamic Range:
112 dB "A" weighted

109 dB unweighted, 20 Hz - 20 kHz

D/A Latency:
10.4/Fs

SYSTEM PERFORMANCE

Dynamic Range:
110 dB "A"weighted

107 dB unweighted, 20 Hz to 20 kHz

Frequency Response:
20 Hz - 20 kHz, +0/-0.5 dB

THD+N:
0.0045% 0 dBu input, 1 kHz, 0 dB input gain

0.0065% 0 dBu input, 20 Hz - 20 kHz, 0 dB input gain

Inter-channel crosstalk:
> 90 dB typically, 20 Hz - 20 kHz

Internal Processing:
32 bit floating point

Internal Sample Rate:
48 kHz

Latency:
1.82 msec analog input to analog output

2.25 msec analog input to analog output with a mono mid-mixer

CONTROL INPUTS

Connector:
Phoenix/Combicon, 3.5mm pitch

Number:
8

Control Voltage Input:
0 to 4.5 VDC

Control Line Impedance:
4.7 k to +5 VDC

ZONE CONTROLLER INPUTS

Connectors:
RJ-45

Number:
2 connectors with 6 channels per connector for a total of 12 inputs

Usage:
For use with dbx ZC wall controllers

LOGIC OUTPUTS

Connector:
Phoenix/Combicon, 3.5mm pitch

Number:
6

Logic Output Voltage:
0 or +5 V unloaded

Logic Output Impedance:
440

Logic Output Current:
10 mA source, 60 mA sink

RELAY CONTACT CLOSURE

Connector:
Phoenix/Combicon, 3.5mm pitch

Contacts:
Common (C), Normally Open (NO), Normally Closed (NC)

Contact Rated Load:
0.3A at 125VAC, 1A at 30VDC

WATCHDOG OUTPUT

Connector:
Phoenix/Combicon, 3.5mm pitch

Type:
Opto-isolated

Output Current:
14 mA max

Withstanding Voltage:
80 V max (off)

Series Impedance:
220 isolated

MISCELLANEOUS

Power Requirements:
100 V to 240 VAC, 50/60 Hz

75 Watts for SC32, 120 Watts for SC64

BTU Rating:
256 BTUs maximum for SC 32, 409 BTUs maximum for SC 64

Dimensions:
3.5" tall x 19" wide x 15" deep

Weight:
SC 32: 15.7 pounds (with all audio cards installed)

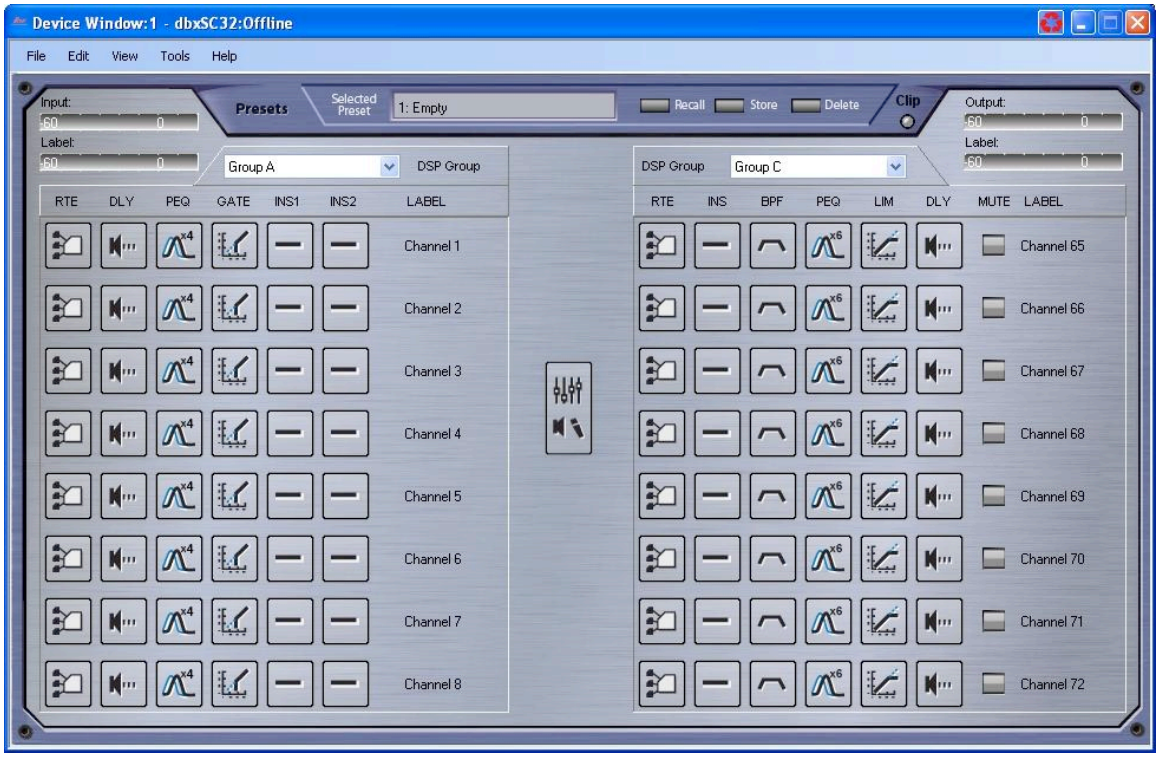
SC 64: 18.9 pounds (with all audio cards installed)

dbx incorporates high quality mechanical fans in some products. All mechanical fans have a limited life expectancy. We recommend annual inspection of fans for dust occlusion and excessive noise. Fan assemblies should be replaced after six to ten years of use. Environmental factors such as elevated temperature, dust, and smoke can adversely affect fan life. Systems exposed to these conditions should be inspected more frequently. Fan replacement can be performed either at the factory or by an experienced technician in the field. Please contact dbx Technical Support for more information on purchasing replacement parts or product service. dbx has a policy of continued product improvement and accordingly reserves the right to change features and specifications without prior notice.

Device Window - SC 32 / SC 64

Device Window - SC 32 / SC 64

The Device Window (shown below) provides a graphical representation of the processing occurring in the SC 32 / SC 64 unit. It also gives complete access to a variety of tools that can be used to save or change the SC device.



Menus
The Menu Bar, along the top of the Device Window, offers a considerable amount of control to the user. From this Menu Bar, Device files can be saved and/or recalled. The Tools pull-down menu provides access to the Processing Wizard that is used to change the device processing configuration as well as Utilities where a majority of the SC attributes are shown and can be manipulated.

Presets
The Preset Tool located directly below the Menu Bar is used to Store and Recall Presets to and from the SC device.

Processing Modules
Each Processing Module in the signal path of the SC 32 / SC 64 is displayed as

an icon in the Device Window. These icons are designed to give a representation of the processing that is occurring. Processing can be broken down into Input and Output processing.

Input Processing
The input processing consists of a router, a delay, a 4-band parametric equalizer, a gate and two insert positions.

Output Processing
The output processing consists of a router, an insert position, a band-pass filter, a 6-band parametric equalizer, a limiter, a delay and a mute.

Meters
Four meters at the top of the Device Window represent input and output levels throughout the signal path. The signal path represented by these meters is determined by what input and output Processing Modules are selected at that time.

Right Click Device Window Menu - SC 32 / SC 64

When the user right clicks on the toolbar of the Device Window , the following menu appears



Copy allows the user to copy all the settings within a particular Device Window

Paste allows the user to apply copied settings to different Device Windows

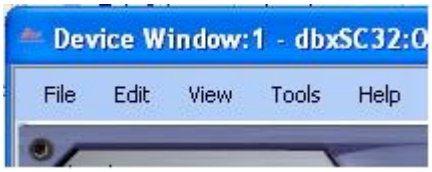
Copy HiQnet Information allows the user to copy device and string information used for programming third party control systems.

Dock docks the Device Window into the System Architect's main window.

Menus - SC 32 / SC 64

Menus - SC 32 / SC 64

At the top of the Device Window are the available menus.



File

Edit

View

Tools

Help

Selecting one of the above menus will open a menu of options within that menu.

File Menu - SC 32 / SC 64

The File menu allows user access to store and recall program files.

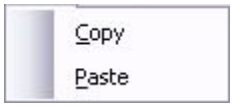


Open allows you to open Device Files.

Save allows you to save Device Files.

Close will close the Device Window.

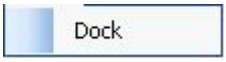
Edit Menu - SC 32 / SC 64



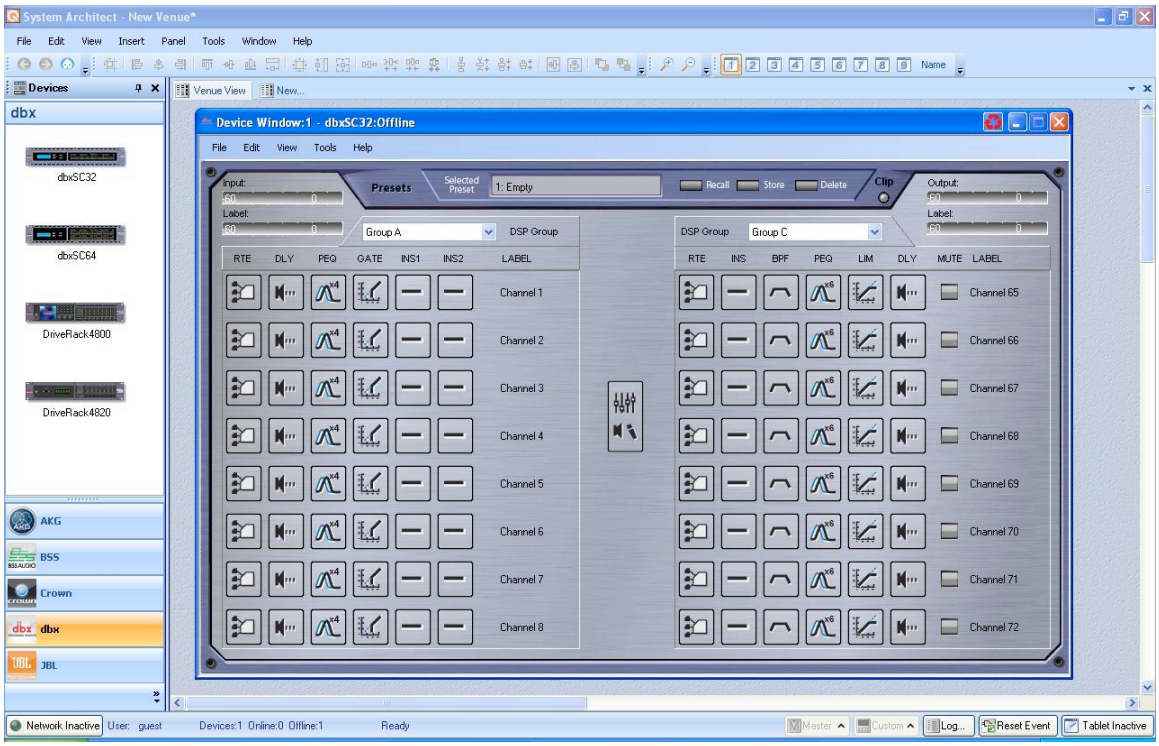
The Edit menu allows copy and paste functions.

View - SC 32 / SC 64

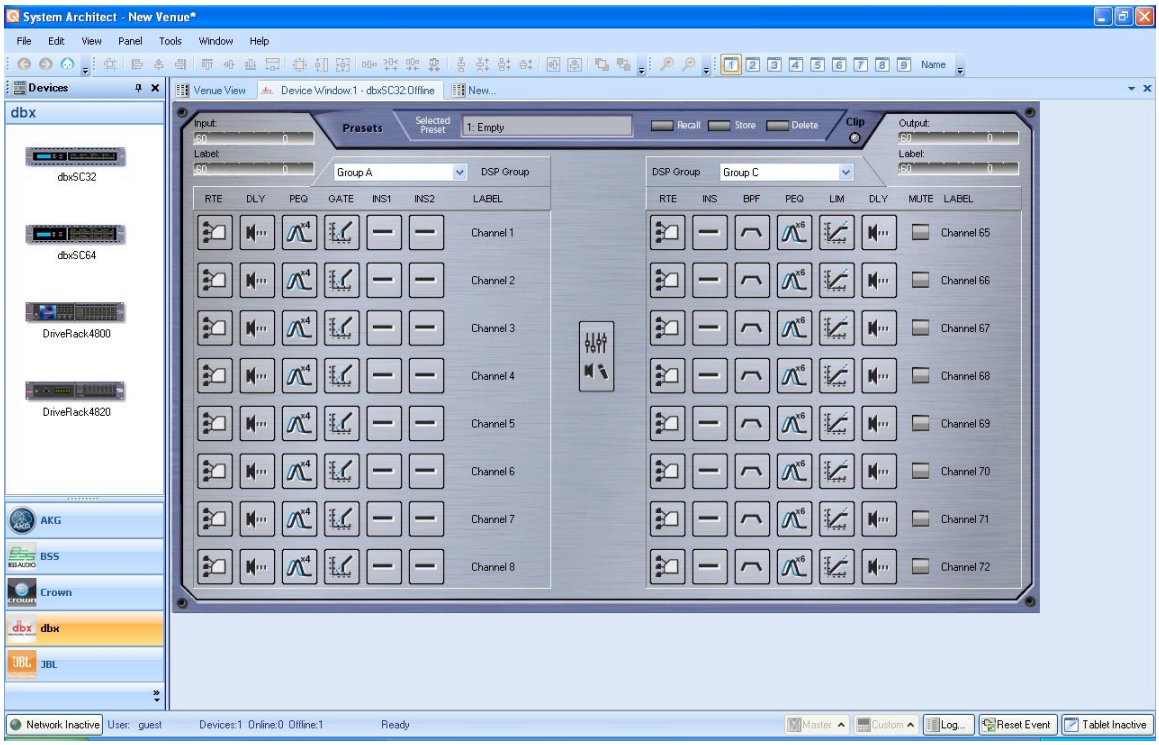
The View menu allows the user to dock windows including the Device Window. While docked, the individual menus are selected using tabs across the top. Click the view link on the menu bar.



Click on the dock selection. For example - A floating Device Window will look like the image below. .



When the Device Window is docked, it will appear as seen in the following image.

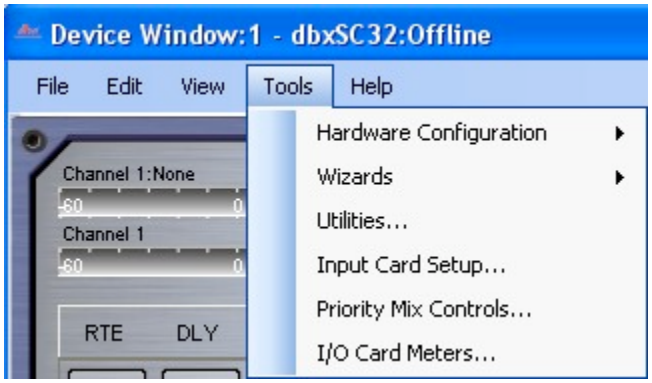


This can be helpful when switching from editor to editor during programming.

Tools Menu - SC 32 / SC 64

Tools - SC 32 / SC 64

The Tools Menu located on the Menu bar of the device view (or the main venue view when the device is docked) contains most of the tools needed to configure your device.



The Tools menu contains the following:

Hardware Configuration

Wizards

Utilities

Input Card Setup

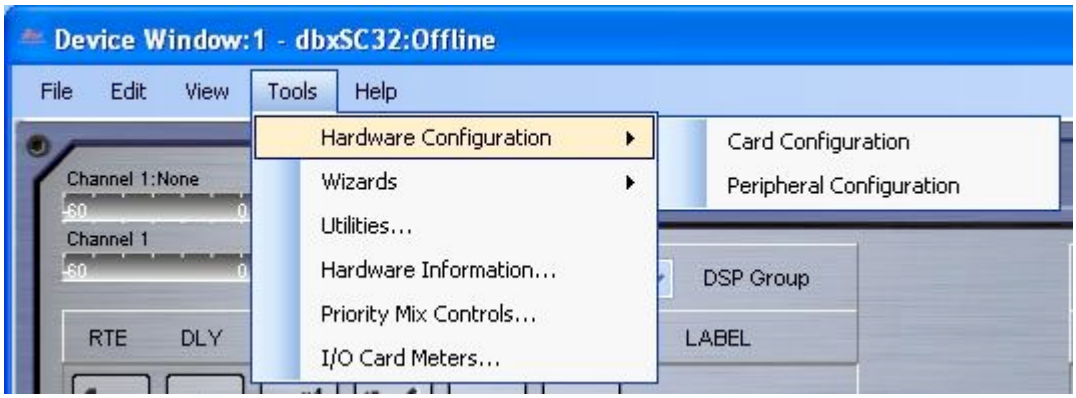
Priority Mix Controls

I/O Card Meters

Hardware Configuration - SC 32 / SC 64

Hardware Configuration - SC 32 / SC 64

The Hardware Configuration menu allows you to access Card Configuration and Peripheral Configuration.



Card Configuration allows you to specify the input/output card configuration of an offline SC 32 or SC64.

Peripheral Configuration allows you to choose the Zone Controllers, Control Inputs, Logic Outputs and Relay use associated with the SC 32 and SC 64.

Card Configuration

Peripheral Configuration

Card Configuration - SC 32 / SC 64

The SC 32 and SC 64 may come loaded in the following analog configurations:

SC 32: 8 x 0, 8 x 8, 8 x 16, 8 x 24, 16 x 0, 16 x 8, 16 x 16, 24 x 0, 24 x 8, 32 x 0, 0 x 8, 0 x 16, 0 x 24 and 0 x 32.

SC 64: 8 x 0, 8 x 8, 8 x 16, 8 x 24, 8 x 32, 8 x 40, 8 x 48, 8 x 56, 16 x 0, 16 x 8, 16 x 16, 16 x 24, 16 x 32, 16 x 40, 16 x 48, 24 x 0, 24 x 8, 24 x 16, 24 x 24, 24 x 32, 24 x 40, 32 x 0, 32 x 8, 32 x 16, 32 x 24, 32 x 32, 40 x 0, 40 x 8, 48 x 16, 56 x 0, 56 x 8, 0 x 8, 0 x 16, 0 x 24, 0 x 32, 0 x 40, 0 x 48, 0 x 56, 0 x 64.

Analog cards are available in two options, 8 analog input channels or 8 analog output channels.

The SC 32 and SC 64 must be purchased in one of the previous configurations.

When the SC 32 and SC 64 are discovered by System Architect, the device and it's currently loaded cards will automatically appear in the device and this step will not be required.

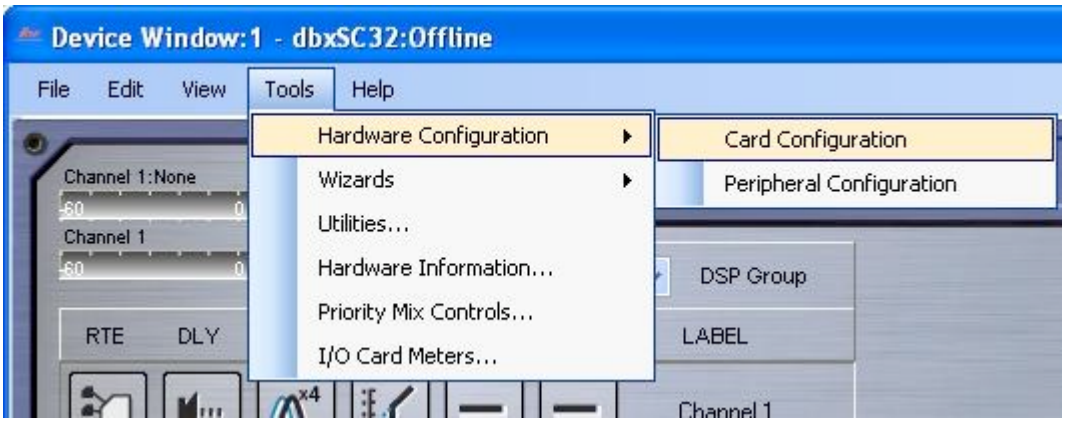
When designing a system with an SC 32 or SC 64 in offline mode, you will need to complete the following steps to properly configure your install. The device will appear as 16 x 16 for the SC 32 and 32 x 32 for the SC 64 by default when inserted into the Venue View.

Click on the Tools Menu as seen below.

Move your mouse over the Hardware Configuration option.

A fly out menu will appear.

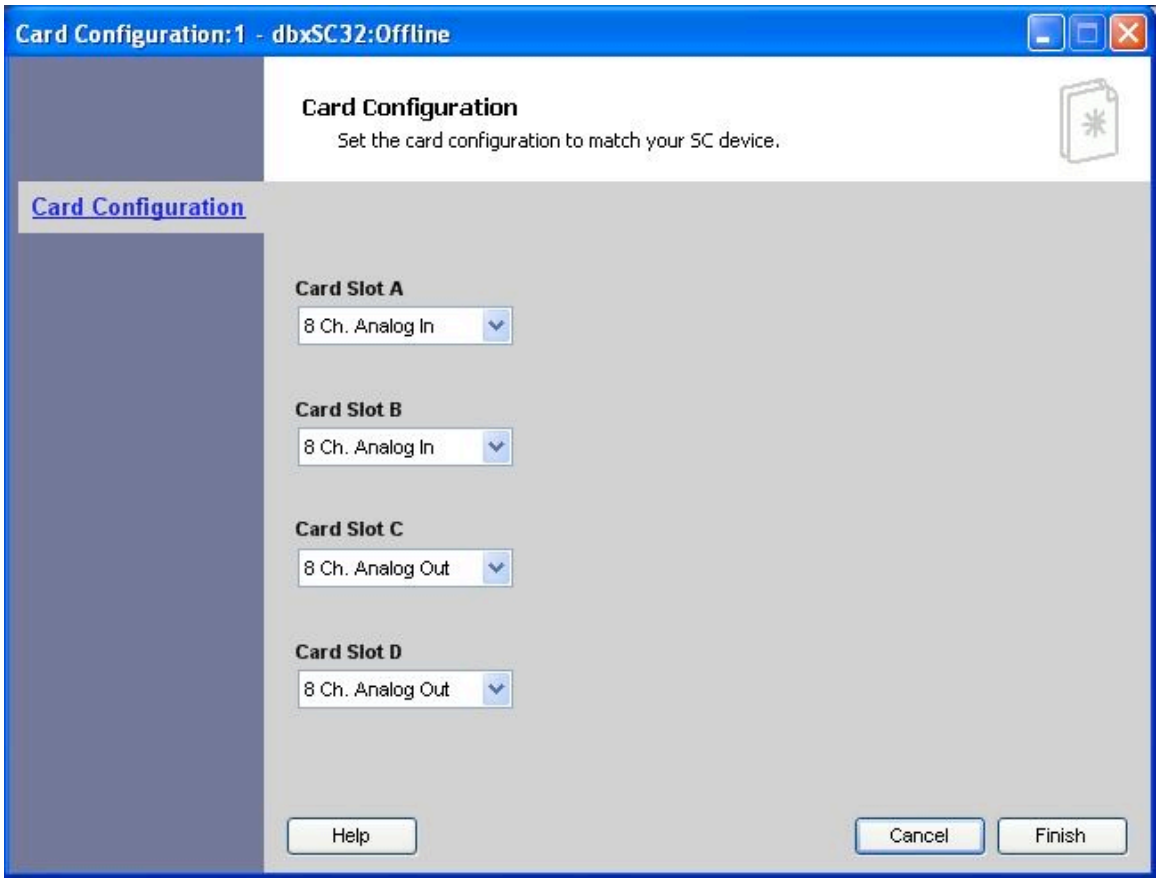
Click on the Card Configuration option.



The Card Configuration window will appear.

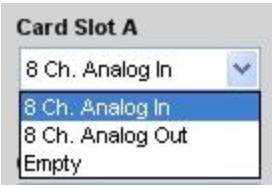
The Card Configuration window contains card slot dropdown menus where you may choose the card that will be populated into the SC 32 and SC 64.

The SC 32 will have Card Slots "A" through "D" available and the SC 64 will have Card Slots "A" through "H" available.

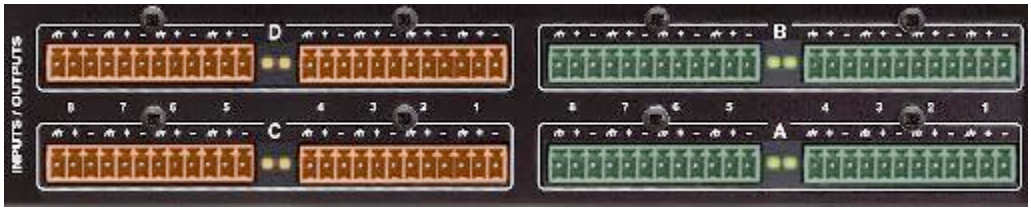


From each of the slot options seen here you will choose one of the following:

8 Ch. Analog In, 8 Ch. Analog Out or Empty.



(NOTE: The factory will populate the cards with Inputs first starting in the Bottom Right physical card slot "A" and then populate the rest of the slots "B", "C" and "D" ending with output cards if used).



Peripheral Configuration - SC 32 / SC 64

The SC 32 and SC 64 have a great number of peripheral device controls that may be used. These options include Zone Controllers (ZC), Control Inputs, Logic Outputs and a Relay connection.

When the SC 32 and SC 64 are discovered by System Architect, they WILL NOT automatically detect peripheral device connections! The peripheral configuration step will have to be completed with each device design containing direct peripheral connections.

To access the Peripheral Configuration simply click on the Tools Menu as seen below.

Move your mouse over the Hardware Configuration option.

A fly out menu will appear.

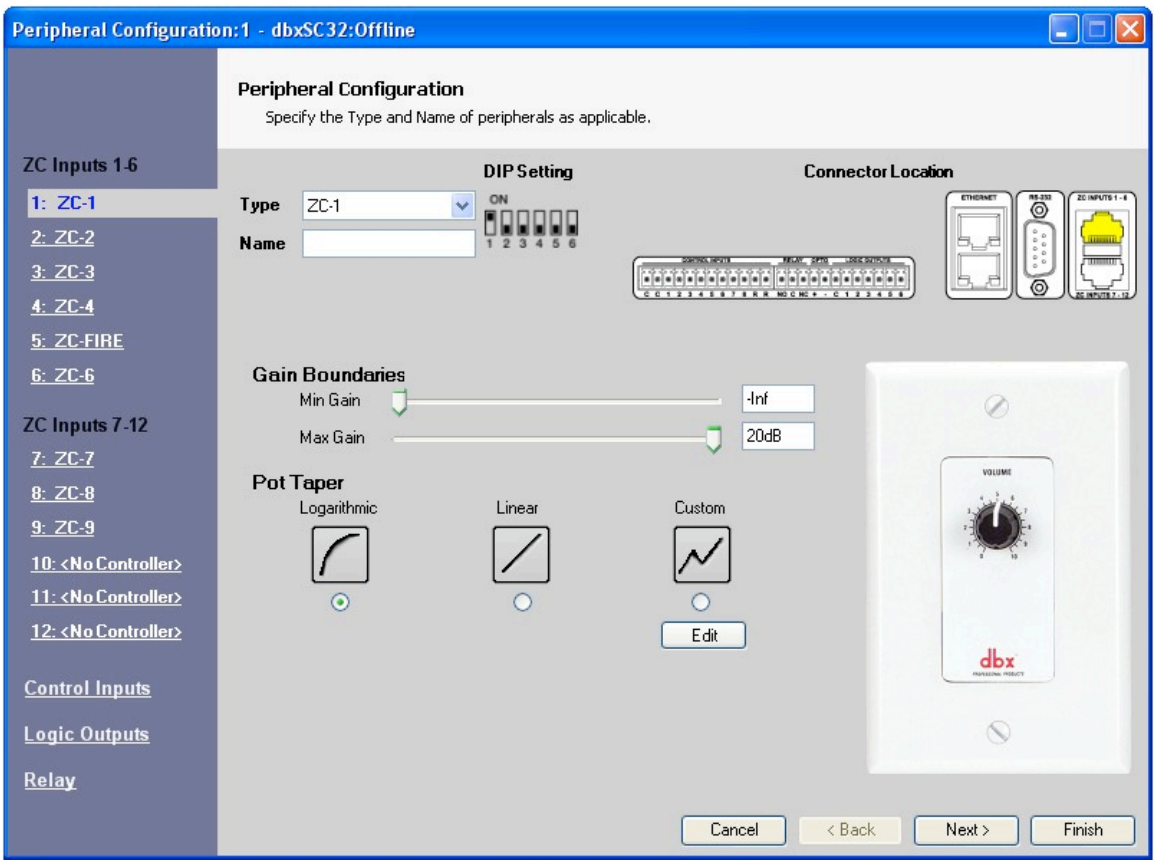
Click on Peripheral Configuration



The Peripheral Configuration window will appear.

This window contains individual window links on the left side of the page to Zone Controllers 1-6, Zone Controllers 7-12, Control Inputs, Logic Outputs and Relay.

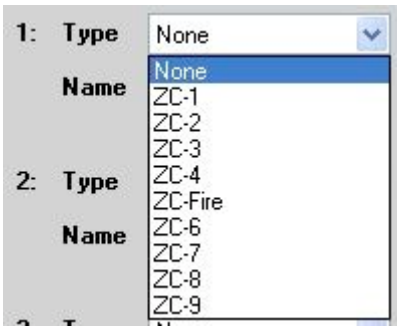
Peripheral Configuration Window



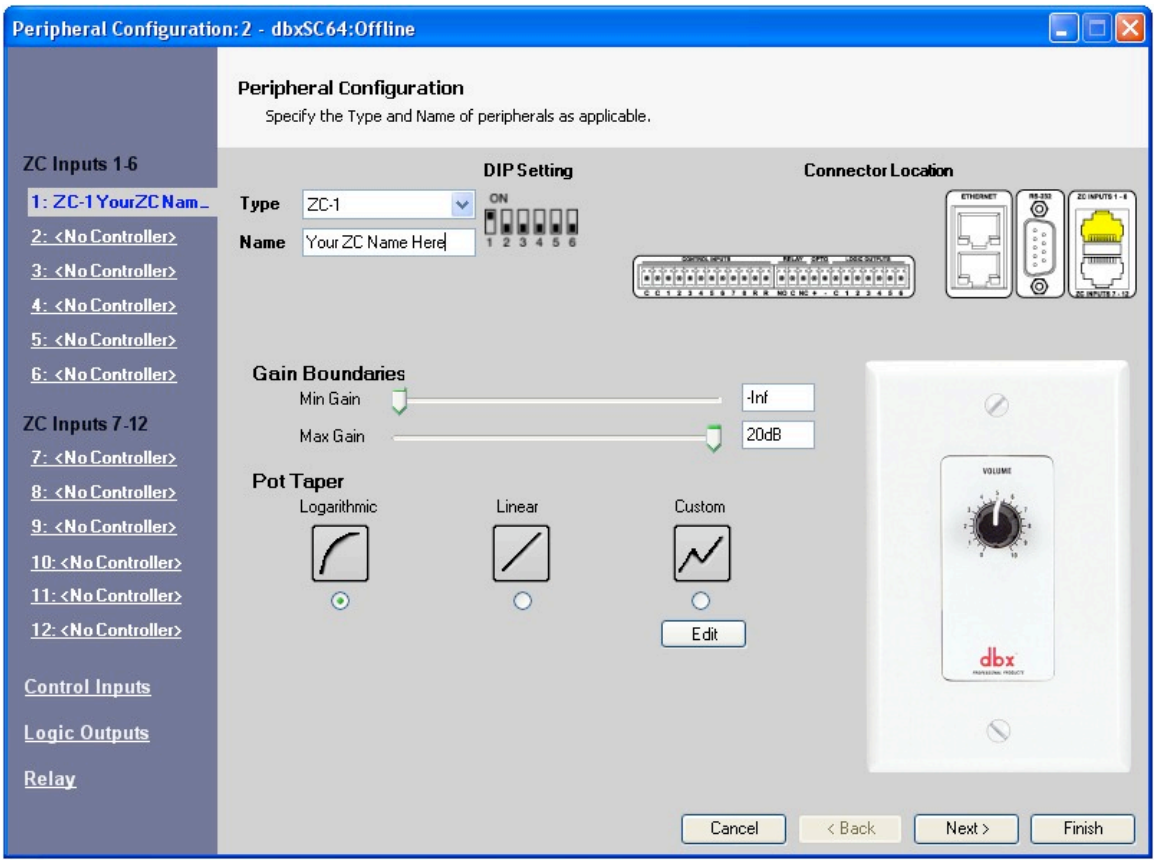
The Peripheral Configuration window allows you to select the type of Zone Controllers that will be attached to the SC 32 and SC 64.

The dropdown menu next to Type is where you choose the appropriate controller. Your options are as follows.

ZC-1, ZC-2, ZC-3, ZC-4, ZC-Fire, ZC-6, ZC-7, ZC-8 and ZC-9.



Once you have selected the ZC Controller to be used, you may then name the control as seen below.



There is a great deal of information available on the Zone Controller page in addition to the previously mentioned ZC Type and name.

Once the ZC controller type has been selected, a picture of the selected ZC Controller will appear to the right. In addition, the port that the ZC Controller is supposed to be plugged into on the back panel and the DIP switch settings are displayed.

Zone Controllers with volume controls (ZC-1, ZC-2, ZC-6 and ZC-8) allow Gain Boundaries to be specified. The Min Gain and Max Gain sliders specify the minimum and maximum levels available from the ZC controller respectively.

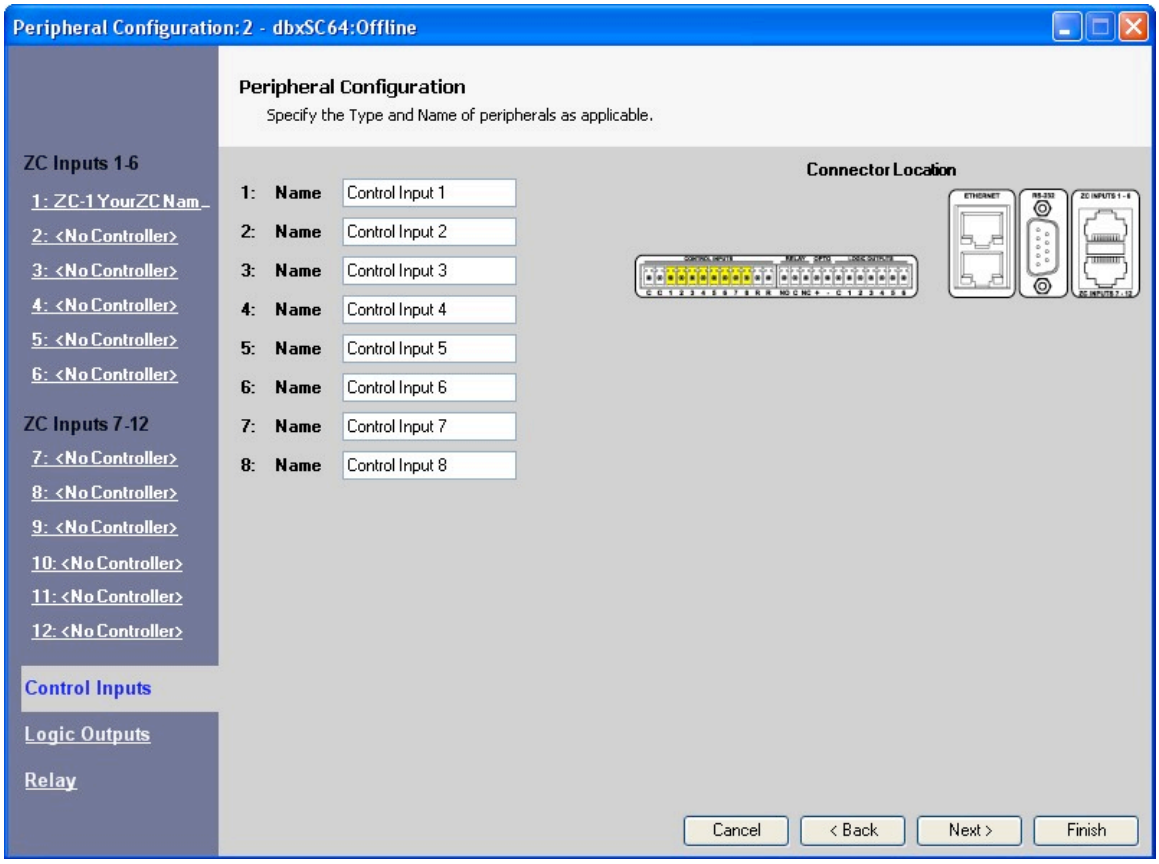
Zone Controllers with a potentiometer (pot) (ZC-1 and ZC-2) allow a Pot Taper to be specified. The options are Logarithmic, Linear and Custom. For a natural volume response ‘feel’ on the ZC controller the following is recommended:

Wide ranges e.g. –Inf to +10dB – Specify Logarithmic

Narrow ranges e.g. -10dB to +10dB – Specify Linear

Custom allows further control of the Pot Taper. Clicking on Edit brings up the Custom Pot Taper Congfiguration window. This shows the fixed values of the Logarithmic and Linear Tapers and editable values for the Custom Taper. These editable values can be used to further enhance the perceived response of the ZC volume pot.

Control Inputs



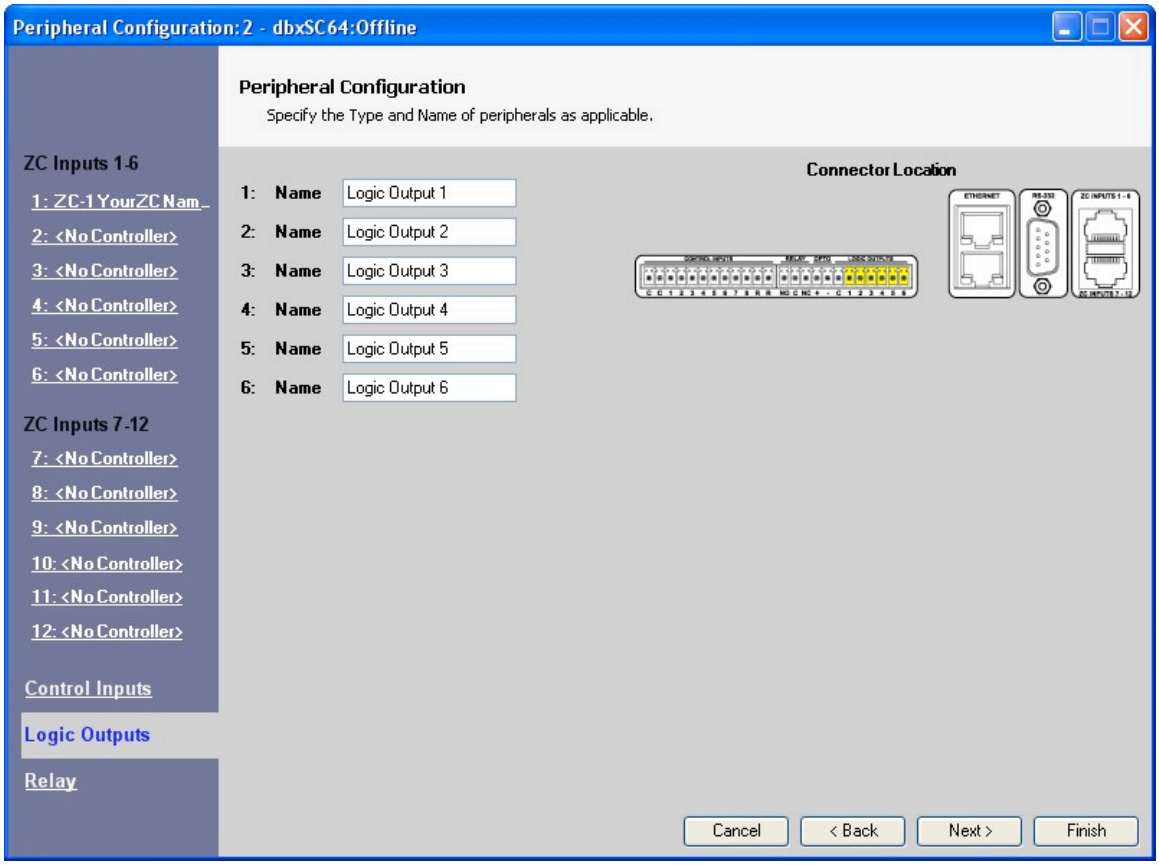
The Control Inputs section allows you to name physical controls that will be connected to the SC 32 or SC 64.

The physical connection on the back of the SC device is highlighted in yellow to the right as seen above.

There are a total of 8 Control Inputs available.

Contact closures may be connected to these ports.

Logic Outputs



The Logic Outputs section allows you to name physical devices that will be controlled or triggered by the SC 32 or SC 64.

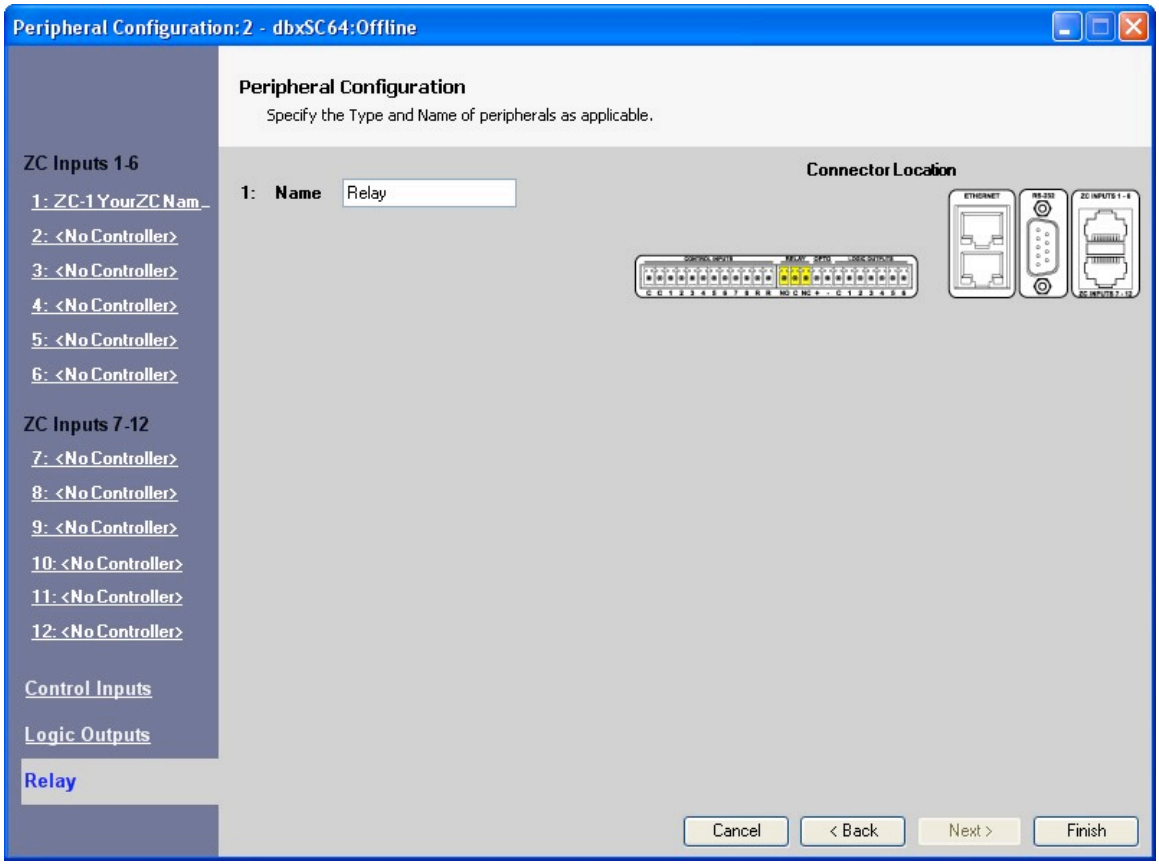
The physical connection on the back of the SC device is highlighted in yellow to the right as seen above.

There are a total of 6 Logic Outputs available.

Things such as relays and LEDs may be connected to these ports.

The Logic Outputs provide +5V when active and are at 0V when inactive.

Relay



The Relay section allows you to name the Relay connection.

The Relay will provide either an open or closed state when active.

The physical connection on the back of the SC device is highlighted in yellow to the right as seen above.

One relay is available.

Wizards - SC 32 / SC 64

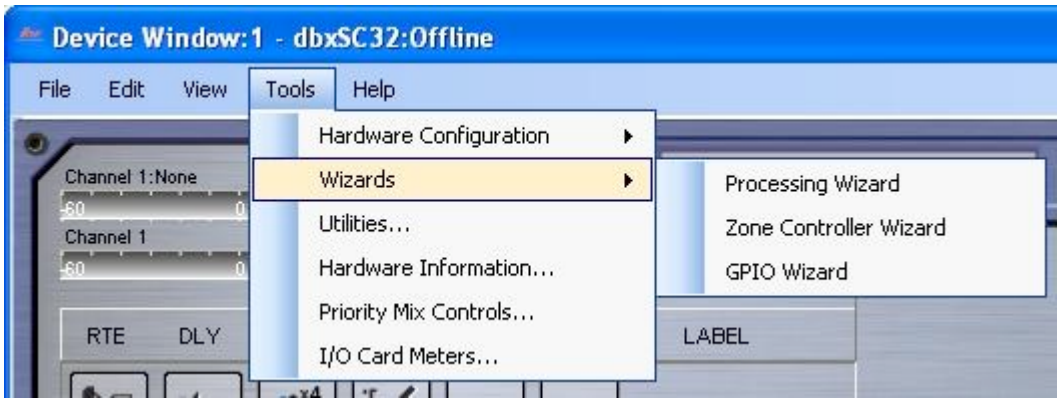
Wizards - SC 32 - SC 64

The Wizards menu is where you will go to set up all your processing for the SC 32 and SC 64.

There are three (3) wizards under the wizard option of the tools menu. The Processing Wizard, Zone Controller Wizard and the GPIO Wizard. (General Purpose Input/Output)

These wizards are used to specify physical hardware configuration and external control options, configure processing and logical organization of channels and assign external hardware to software parameters and vice versa.

To access the Wizards simply click on the Tools option on the menu bar from the device view window.



Processing Wizard

Zone Controller Wizard

GPIO Wizard

Processing Wizard - SC 32 / SC 64

Processing Wizard Overview - SC 32 / SC 64

The SC 32 and SC 64 are preconfigured architecture digital matrix processors.

The configuration of signal path and DSP processing modules are made easy through the use of Wizards.

The Wizards are used to set up your SC 32 and SC 64. These Wizards provide a step-by-step approach to the configuration of hardware and naming, routing, organization and mixing of signals.

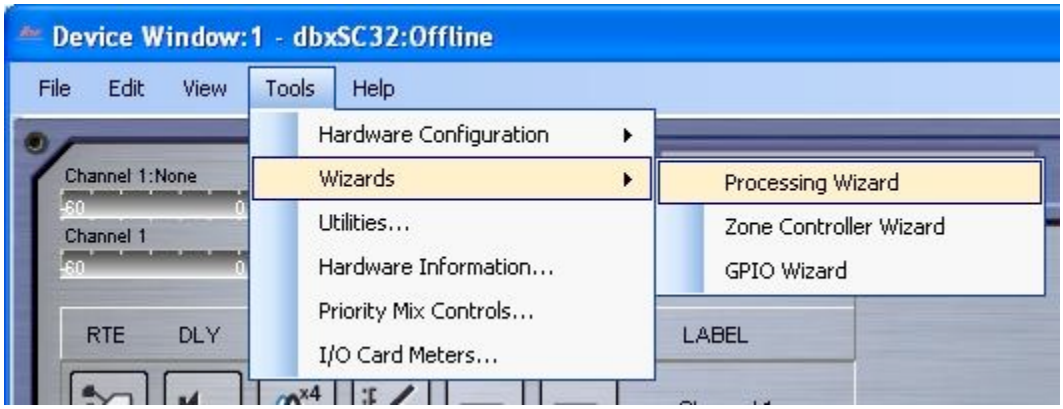
When designing a system, with an SC 32 or SC 64 in either online or offline mode, you will need to complete the following steps to properly configure your install.

To access the Processing Wizard, click on the Tools Menu as seen below.

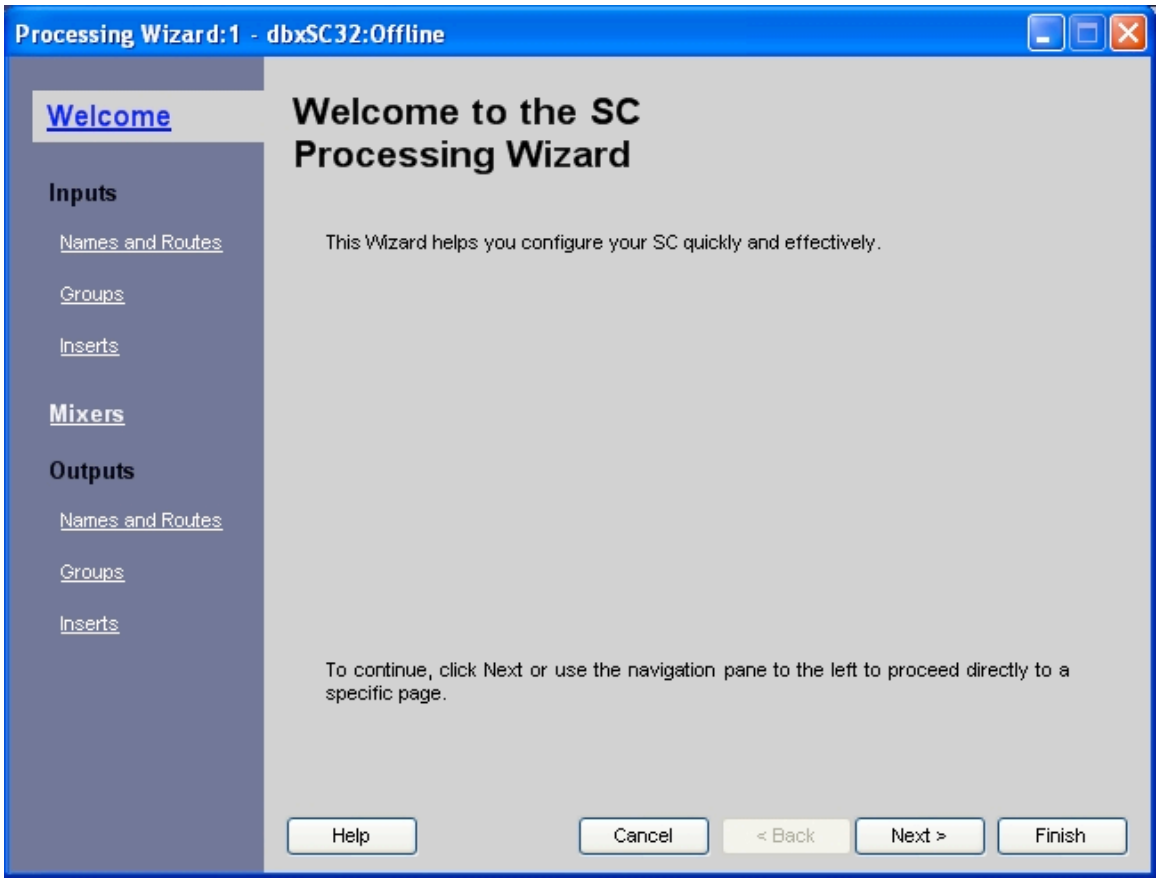
Move your mouse over the Wizards option.

A fly out menu will appear.

Click on the Processing Wizard option.



The Welcome Screen for the Wizard will appear.



Navigating the Processing Wizard

Navigating the Processing Wizard is made easy through the Quick Links to the left side of the window or through the NEXT and BACK buttons located at the bottom of the Wizard Screen.

You may click on Cancel at any time to exit the Wizard without saving any of the changes.

When you have completed any or all sections of this Wizard and wish to implement the changes made, simply press the FINISH button located at the bottom right of the Processing Wizard window. This will load your design to either an offline version of your device or load it straight into an online device.

A Help button is located at the bottom of the Processing Wizard screen that, when pressed, will take you to the Processing Wizard Help File.

Processing Wizard Overview - SC 32 / SC 64

The SC 32 and SC 64 are preconfigured architecture digital matrix processors.

The configuration of signal path and DSP processing modules are made easy through the use of Wizards.

The Wizards are used to set up your SC 32 and SC 64. These Wizards provide a step-by-step approach to the configuration of hardware and naming, routing, organization and mixing of signals.

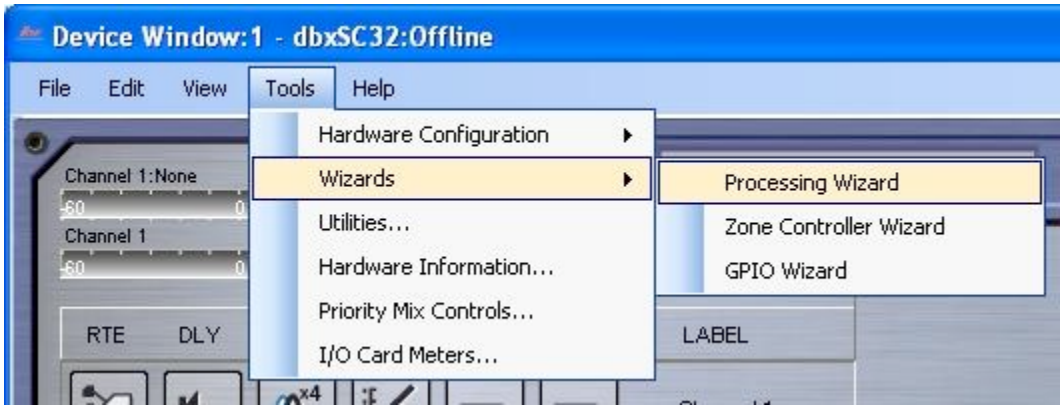
When designing a system, with an SC 32 or SC 64 in either online or offline mode, you will need to complete the following steps to properly configure your install.

To access the Processing Wizard, click on the Tools Menu as seen below.

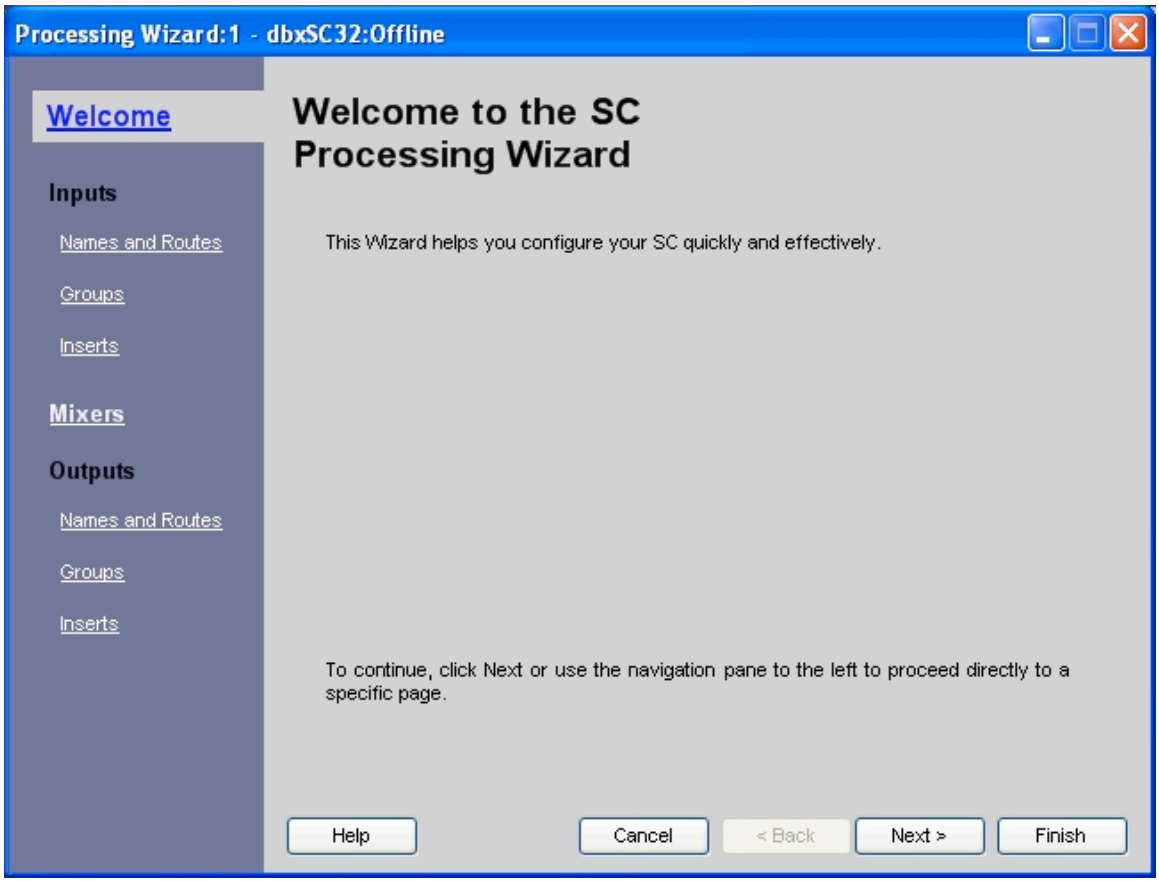
Move your mouse over the Wizards option.

A fly out menu will appear.

Click on the Processing Wizard option.



The Welcome Screen for the Wizard will appear.



Navigating the Processing Wizard

Navigating the Processing Wizard is made easy through the Quick Links to the left side of the window or through the NEXT and BACK buttons located at the bottom of the Wizard Screen.

You may click on Cancel at any time to exit the Wizard without saving any of the changes.

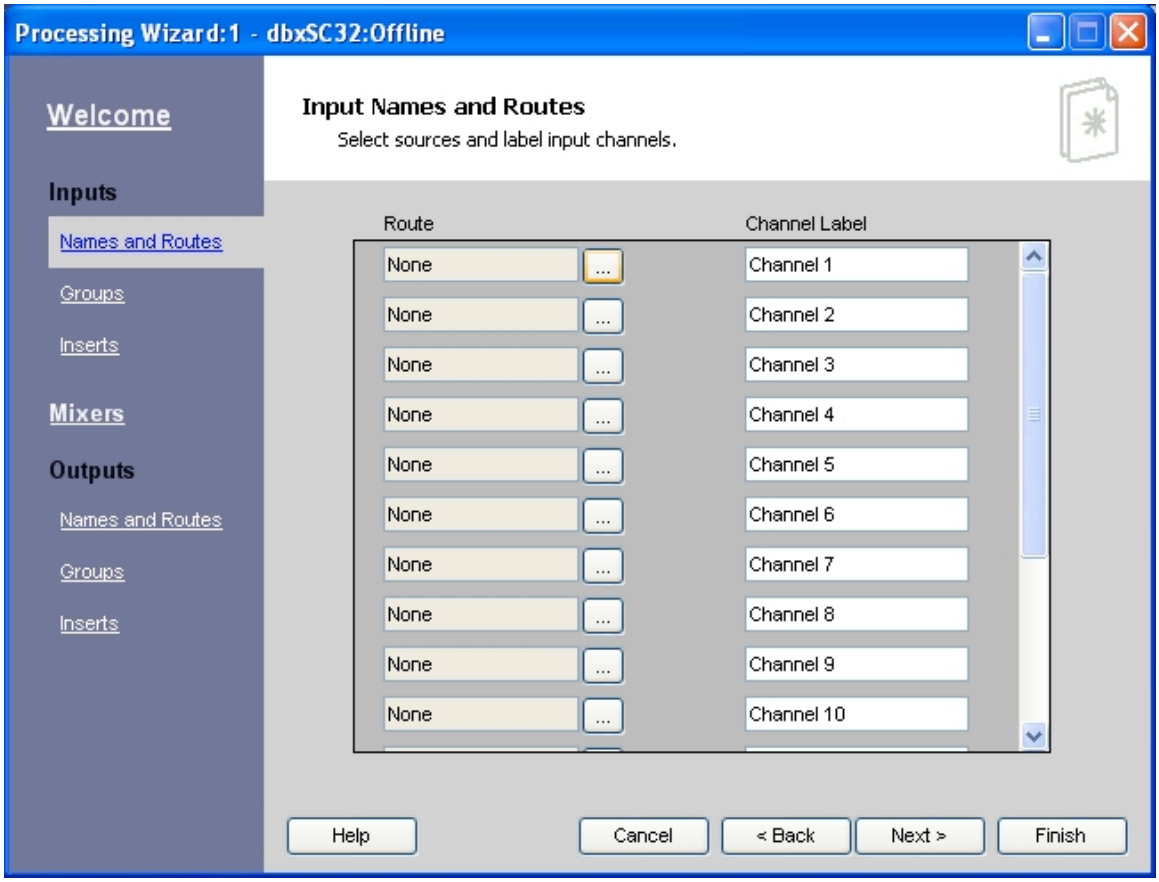
When you have completed any or all sections of this Wizard and wish to implement the changes made, simply press the FINISH button located at the bottom right of the Processing Wizard window. This will load your design to either an offline version of your device or load it straight into an online device.

A Help button is located at the bottom of the Processing Wizard screen that, when pressed, will take you to the Processing Wizard Help File.

Input Names and Routes - SC 32 / SC 64

To get to the Input Names and Routes section of the Processing Wizard, click on the Input Names and Routes quick link or click on the Next button.

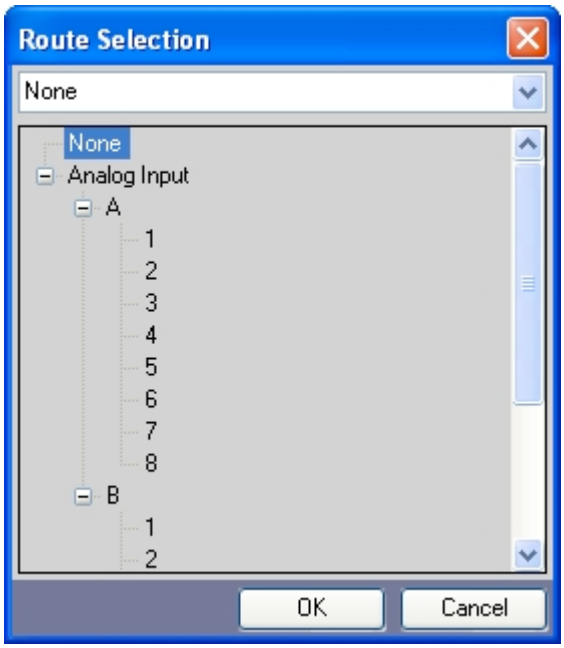
The Input Names and Routes window will appear.



The Input Names and Routes portion of the Processing Wizard allows you to select sources from the available analog inputs and label the selected channel.

Click on the selection icon  next to a channel to choose a Route for that channel.

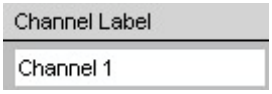
The Route Selection window will open



With the Input Route Selection window open, select one of the available input channels as the source for the selected DSP channel.

(Note: Only channels associated with an input card will appear. Ex; there is one analog input card loaded. Only A 1-8 will appear in this window)

With your input channel selected you may click on the Channel Label box to the right and label your input channel.



Complete additional input channels in the same way as above.

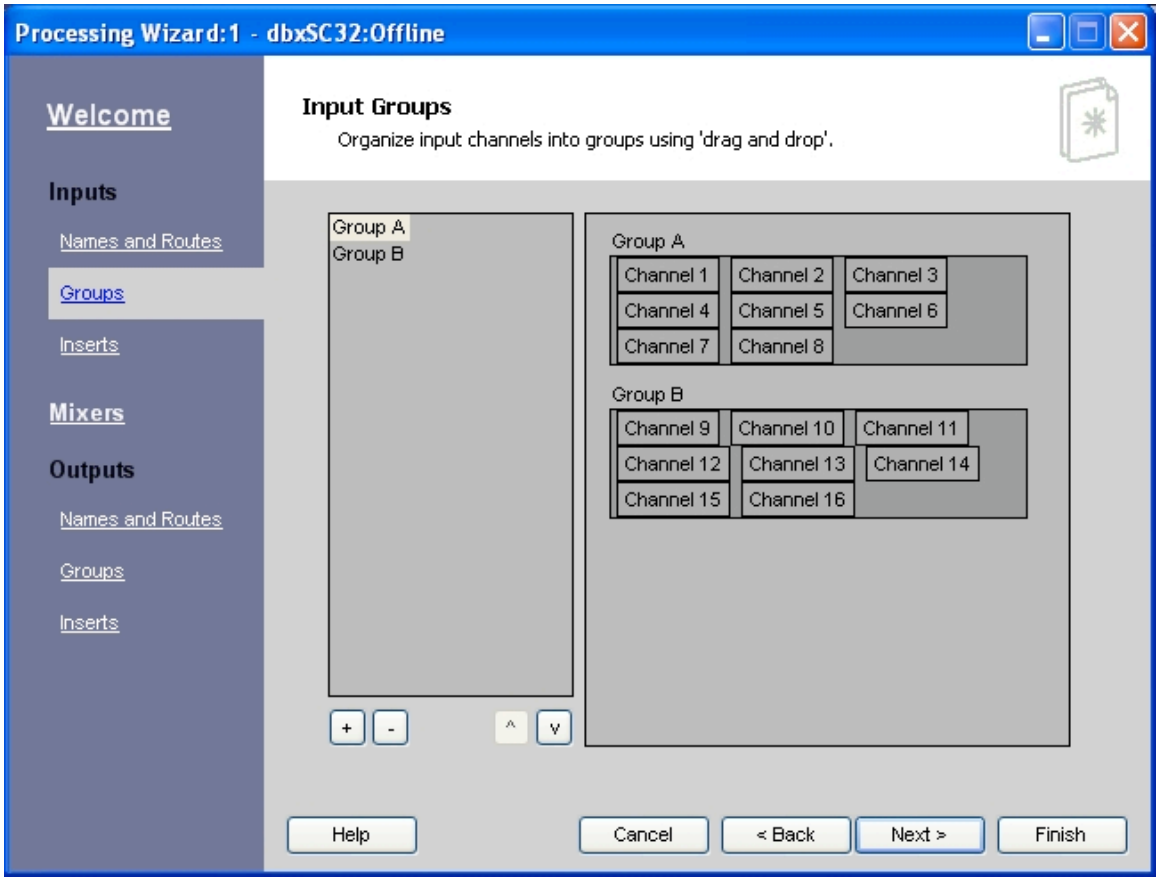
When you have completed the Input Route Selection and channel labeling for all desired channels, click on either the NEXT button or on the Input Groups link to the left.

Input Groups - SC 32 / SC 64

To get to the Input Groups section of the Processing Wizard, click on the Input Groups quick link or click on the Next button until the Groups option is selected under Inputs.

Input Groups allow you to organize DSP input channels into a logical order for your install. You may create groups to contain things like the inputs within a certain room or by type of input such as microphones.

We will start with the groups as they appear by default.

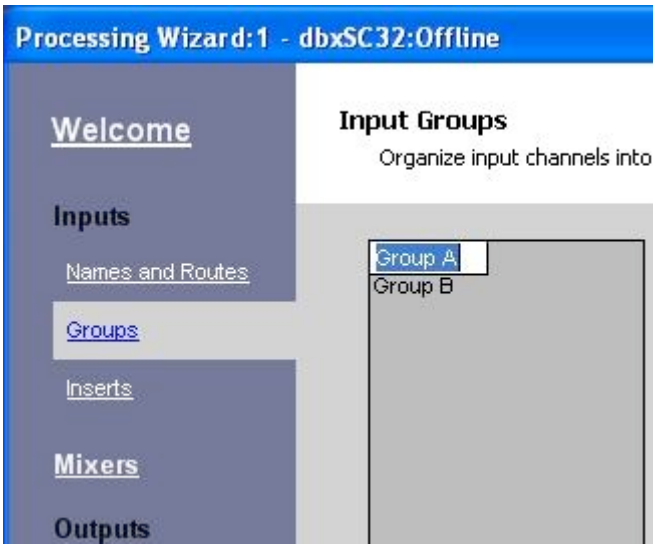


As you can see in the above image, the groups appear in logical order based on the default 16 available inputs with card “A” and its channels in one group and card “B” and it’s channels in the second group.

Renaming a Group

To rename a group you will click once on that groups name. In the example below I have clicked once on Group A. The group name will highlight and you may start typing your replacement name for that group.

Repeat this process as needed. You may come back to the grouping section at any time to change the group name, should a change be desired.



Creating a New Group

To create a new group click on the plus  button at the bottom left of the group window.

Deleting a Group

To delete a group, select the group to be deleted and click on the minus button  at the bottom left of the group window.

Re-ordering Groups

To change the order of how groups appear in the list click on the group to be moved.

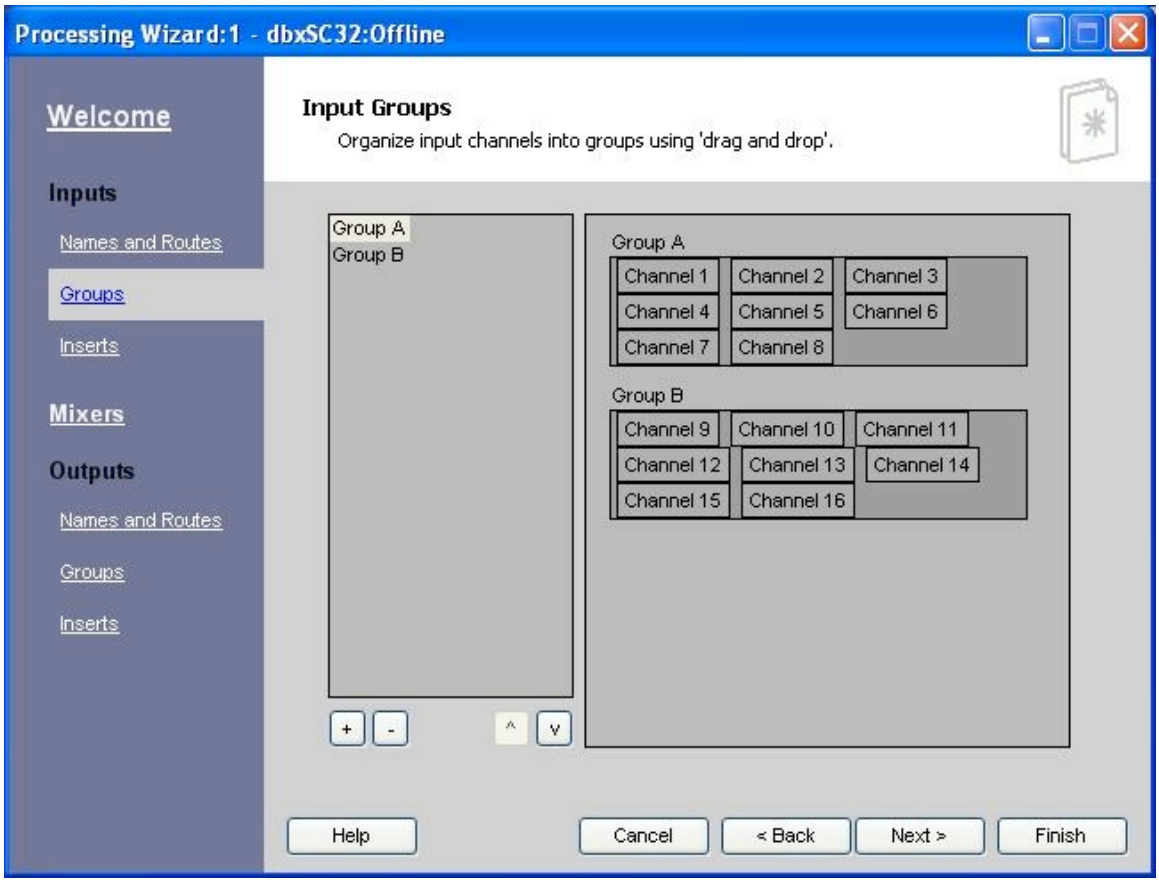
Then click on either the up or down arrow  to move the group up and down in the list.

Moving DSP input channels to another Group

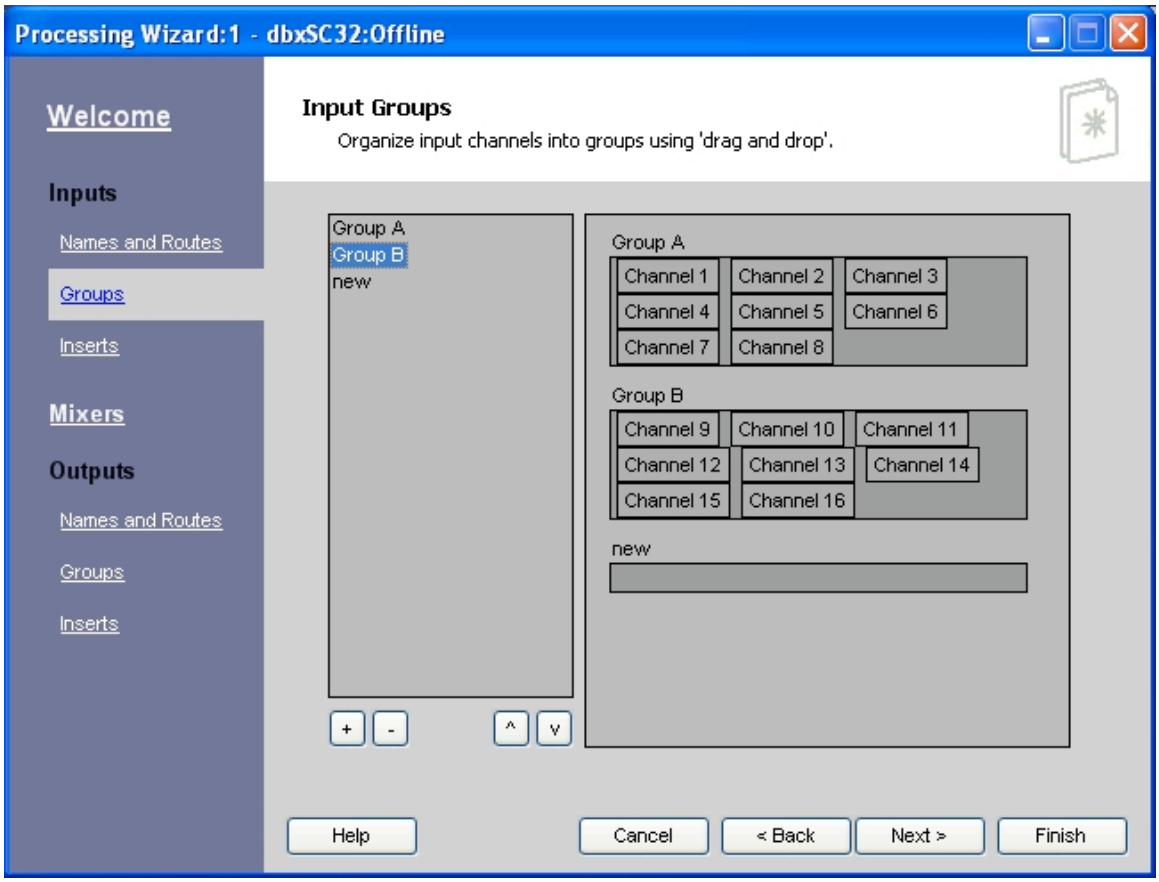
One you have named your inputs, the new name will appear as an input channel within a group. The default in a 16x16 I/O configuration will appear with inputs 1-8 in “Group A” and inputs 9-16 in “Group B”. (NOTE: the numbering system is based on the highest number of inputs (1-64) and the highest number outputs (65-128) so numbers and controls never overlap) You may have as many of the input channels in a group as you wish.

To move an input channel to another group, click and drag that channel from one Group to the next. You may wish to reorder the input channels within a Group as well. You may do this by dragging the input channel to another location within the Group to create any channel order required for best use.

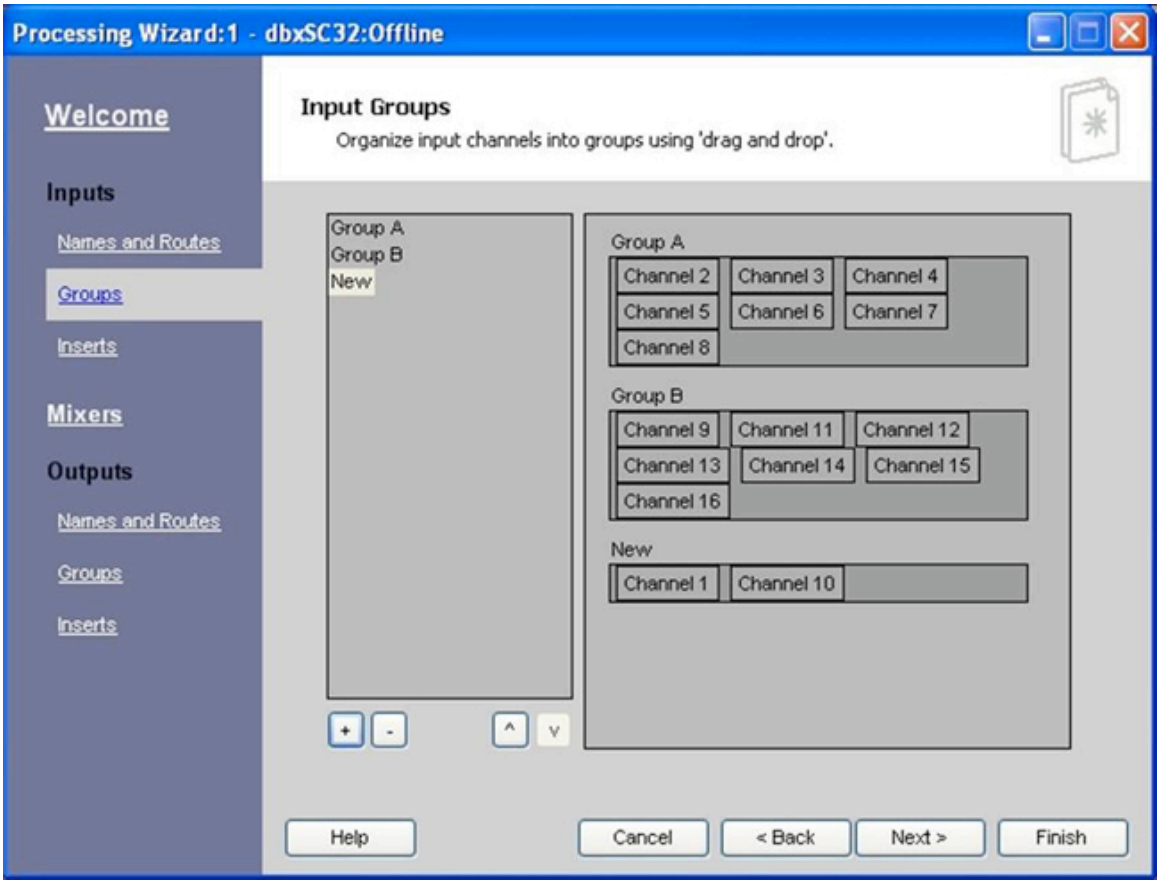
Default with 16x16 I/O configuration



One Group Added.



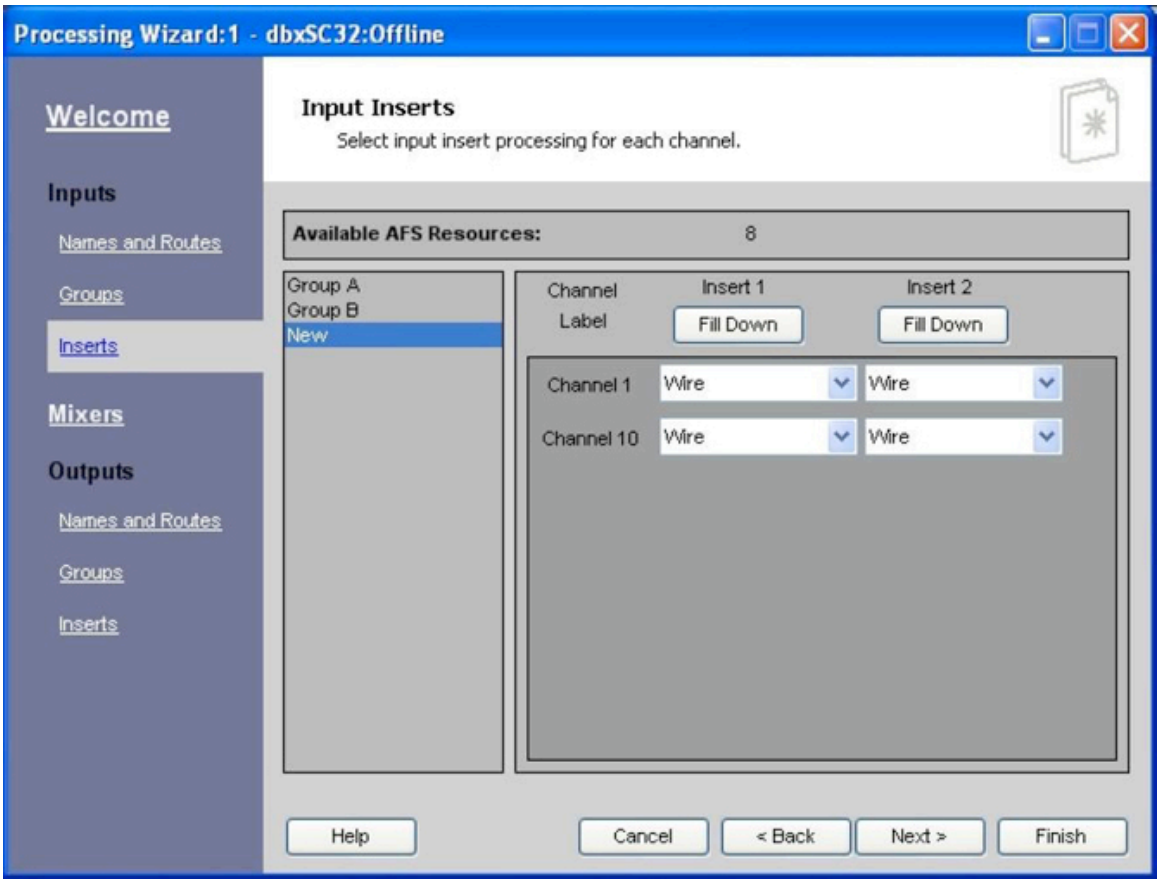
Channels one (Channel 1) and ten (Channel 10) moved to the new group.


Processing Wizard:1 - dbxSC32:Offline
Welcome
Inputs
Names and Routes
Groups
Inserts
Mixers
Outputs
Names and Routes
Groups
Inserts
Input Groups
Organize input channels into groups using 'drag and drop'.
Group A
Group B
New
+
-
^
v
Group A
Channel 2
Channel 3
Channel 4
Channel 5
Channel 6
Channel 7
Channel 8
Group B
Channel 9
Channel 11
Channel 12
Channel 13
Channel 14
Channel 15
Channel 16
New
Channel 1
Channel 10
Help
Cancel
< Back
Next >
Finish

Input Inserts - SC 32 / SC 64

To get to the Input Inserts section of the Processing Wizard, click on the Input Inserts quick link or click on the Next button until the Inserts option is selected under Inputs.

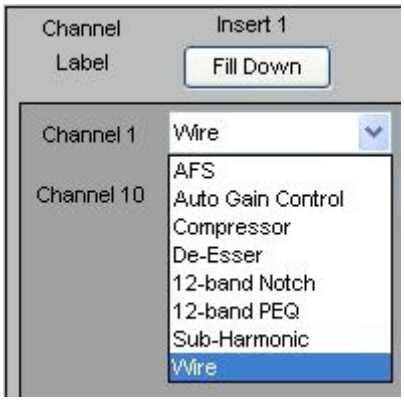
Input Inserts allows you to choose which type of DSP processing will be inserted for use on each input channel.



As you can see from the image above, the inserts are set up in the order of the groups that you have created or selected. Clicking on a group name will allow you to insert Processing Modules for the channels within that group.

Once you have selected a group, you may then use the dropdown menu for Insert 1 and Insert 2 for a selected channel.

Clicking on the Insert 1 dropdown menu for channel one, as seen above, will allow you to choose from one of the following Processing Module inserts.



1) AFS (Advanced Feedback Suppression)

2) Auto Gain Control

3) Compressor

4) De-Esser

5) 12-Band Notch Filter

6) 12-Band Parametric EQ

7) Sub-Harmonic Synthesizer

Once you have selected a Processing Module insert for channel one (1), you may click on the Fill Down button to use the same Processing Module insert for any channels that follow within that group.

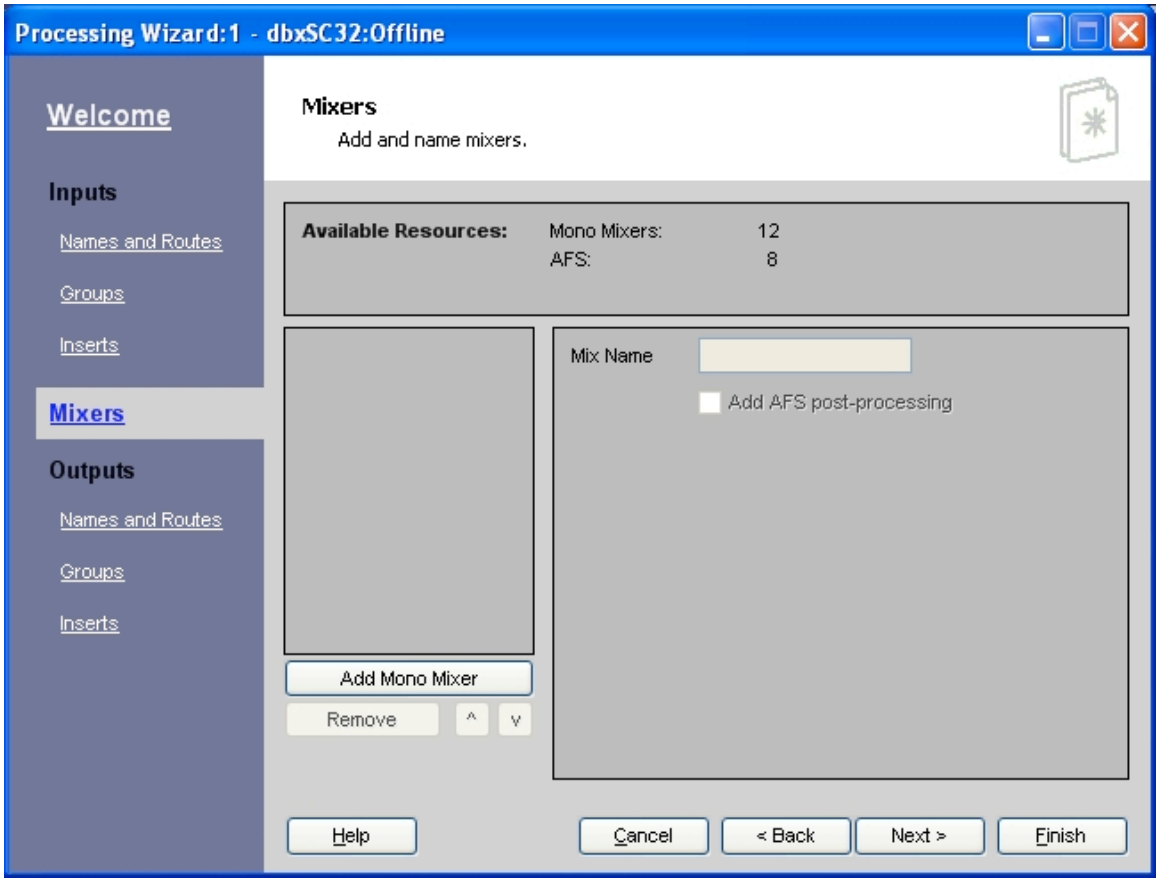
Input insert two (2) will follow the same steps as insert one (1). The list of Processing Module inserts is the same as insert one (1) with the exception of AFS.

Mixers - SC 32 / SC 64

To get to the Mixers section of the Processing Wizard, click on the Mixers quick link or click on the Next button until the Mixers option is selected.

Mixers are used to select multiple sources, set levels and create priority overrides that will be routed to an output channel or multiple output channels.

The Mixer and Priority Mixing are covered in this topic.

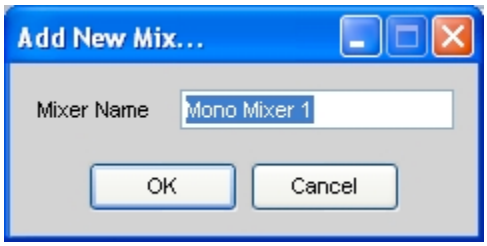


The Mixers page above has no mixers loaded by default.

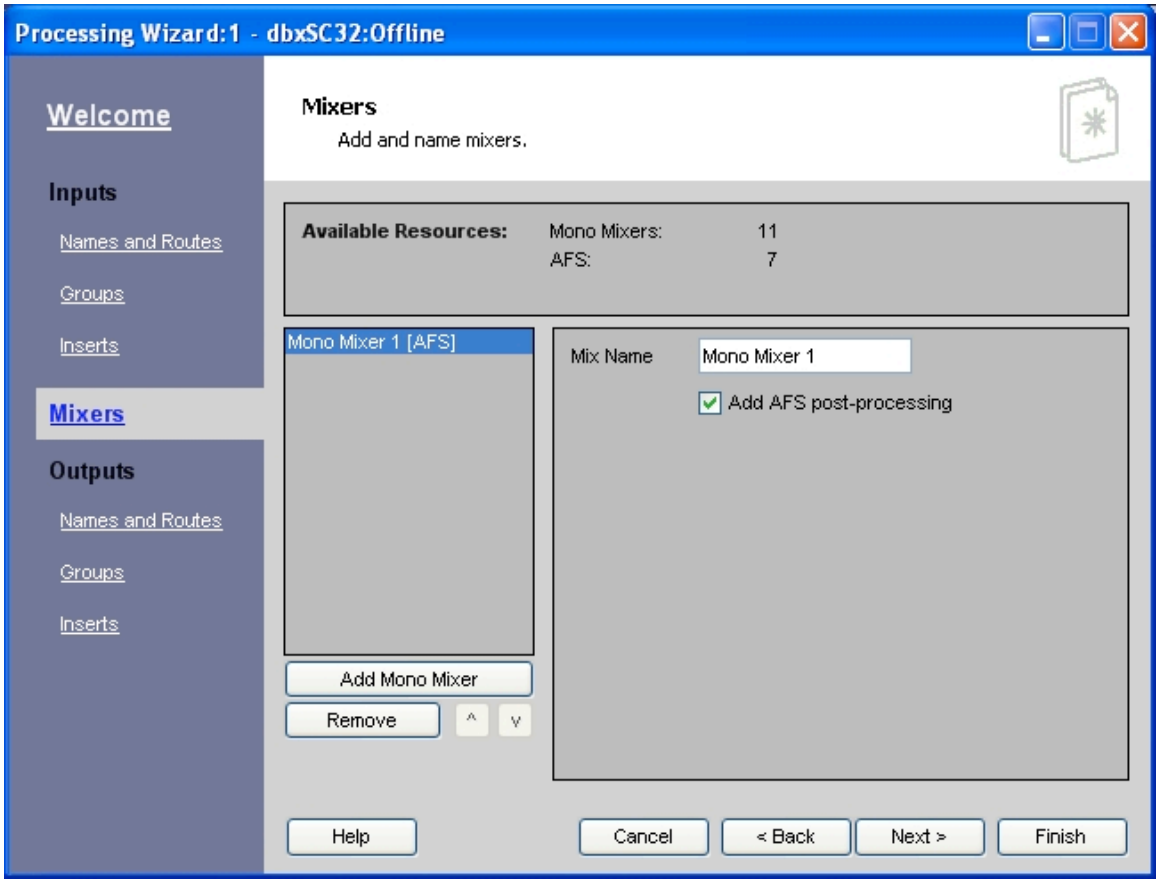
Adding a Mono Mixer

To add a Mono Mixer, click on the Add Mono Mixer Button.

A window will appear that allows you to name your new mixer.



With your mixer added and named, you may click on the AFS check box to add AFS post-processing if needed.



The Available Resources information will keep you updated with the number of Mono Mixers and AFS inserts available for use.

The number of mixers available scales with the number of output cards in a device - each output card adds 6 Mono Mixers. The number of AFS algorithms scales with the number of input and output cards. Each input or output card adds 2 AFS algorithms.

You may therefore have up to 12 Mono Mixers and 8 AFS algorithms in an SC 32 16x16 or 24 Mono Mixers and 16 AFS Inserts in an SC 64 32x32.

Removing a Mixer

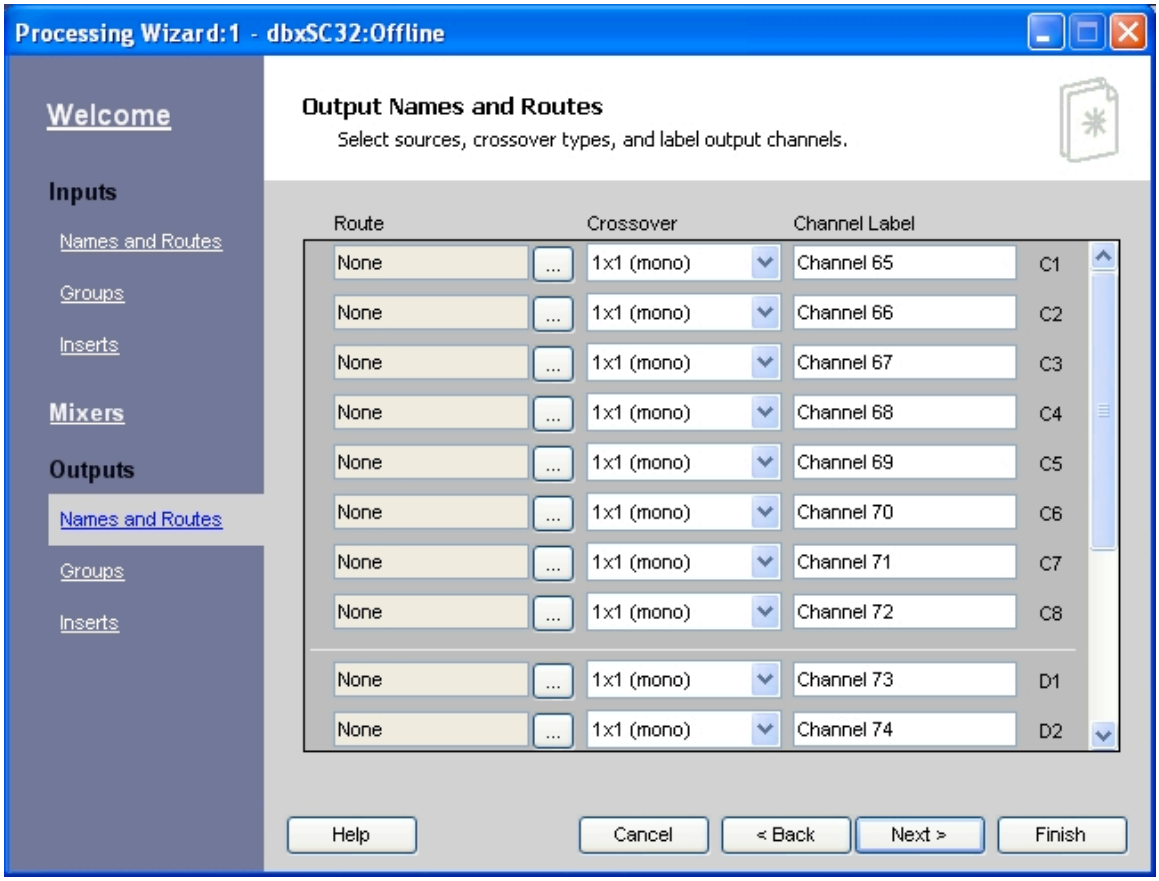
To remove a Mixer, select the mixer to be removed by clicking on it in the list. Click on the Remove button.

Reordering Mixers

If you have added two or more mixers you may change the order that the mixers will appear. Select the mixer you wish to move from the list and click the up or down arrow buttons  to move the mixer within the list.

Output Names and Routes - SC 32 / SC 64

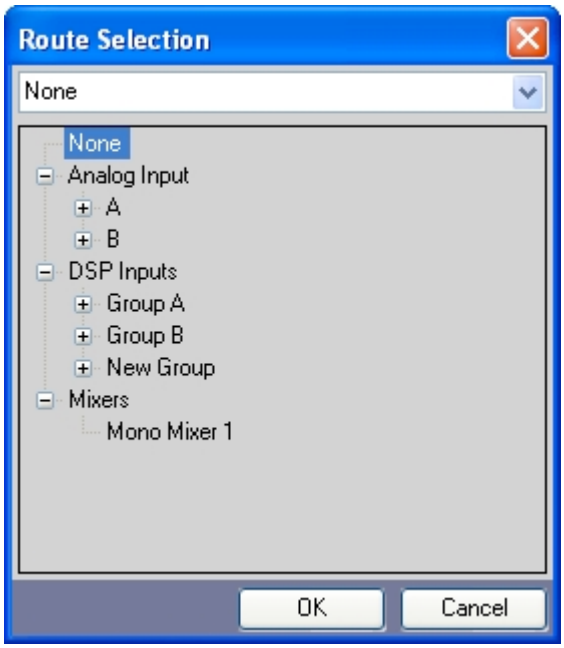
To get to the Output Names and Routes section of the Processing Wizard, click on the Output Names and Routes quick link or click on the Next button until the Names and Routes option is selected under Outputs.



The Output Names and Routes section of the Processing Wizard allows you to select sources from the available analog inputs, DSP Input Channels and Mixers that you added. You may also change Crossover type and name each output channel from this window.

Click on the selection icon ... next to a channel to choose a source for the output channel.

The Route Selection window will open.



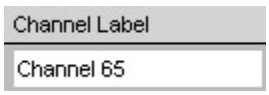
With the output Route Selection window open, select one of the available Analog Inputs, DSP Inputs or Mixers to be routed to the output channel.

With your source channel selected you may click on the OK button to assign the source or cancel to exit without making a change.

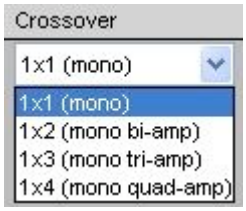
Complete additional Route selections in the same way as above.

Once you have selected a Route source you will name all of your output channels.

Click on the channel number under the Channel Label heading and enter the name you wish to call the output channel.



Now you will select the type of crossover, if any, that you want to use for the outputs.



You may choose one of the following crossover types.

1x1 (mono)

1x2 (mono bi-amp)

1x3 (mono tri-amp) or

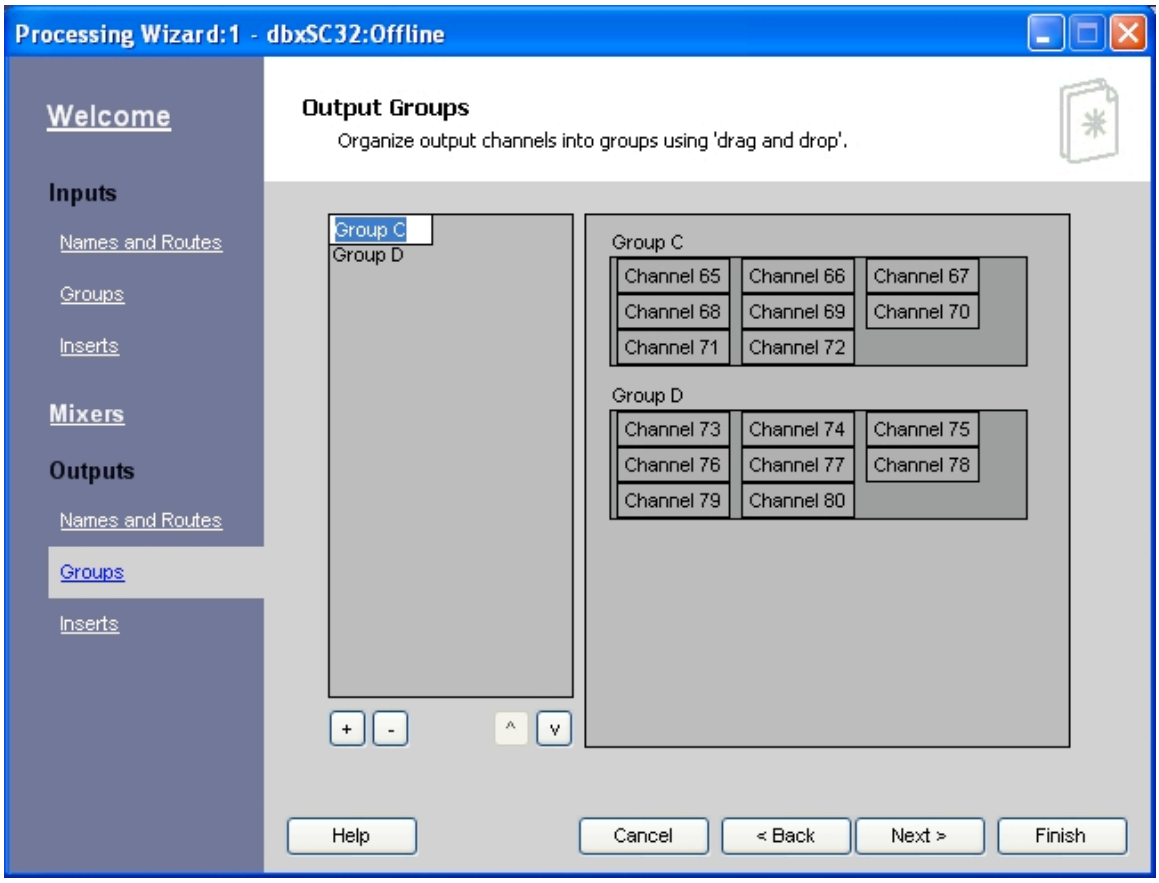
1x4 (mono quad-amp)

Output Groups - SC 32 / SC 64

To get to the Output Groups section of the Processing Wizard, click on the Output Groups quick link or click on the Next button until the Groups option is selected under Outputs.

Output Groups allow you to organize DSP output channels into a logical order for your install. You may create groups to contain things like the rooms on a certain floor of a building.

We will start with the groups as they appear by default.



As you can see in the above picture, the groups appear in logical order based on the default 16 available outputs with card "C" and its channels in one group and card "D" and its channels in the second group.

Renaming a Group

To rename a group you will click once on that group's name. In the example above I have clicked once on Group C. The group name will highlight and you may start typing your replacement name for that group.

Repeat this process as needed. You may come back to the grouping section at any time to change the group name, should a change be desired.

Creating a New Group

To create a new group click on the plus  button at the bottom left of the group window.

Deleting a Group

To delete a group, select the group to be deleted and click on the minus button  at the bottom left of the group section.

Re-ordering Groups

To change the order of how groups appear in the list click on the group to be moved.

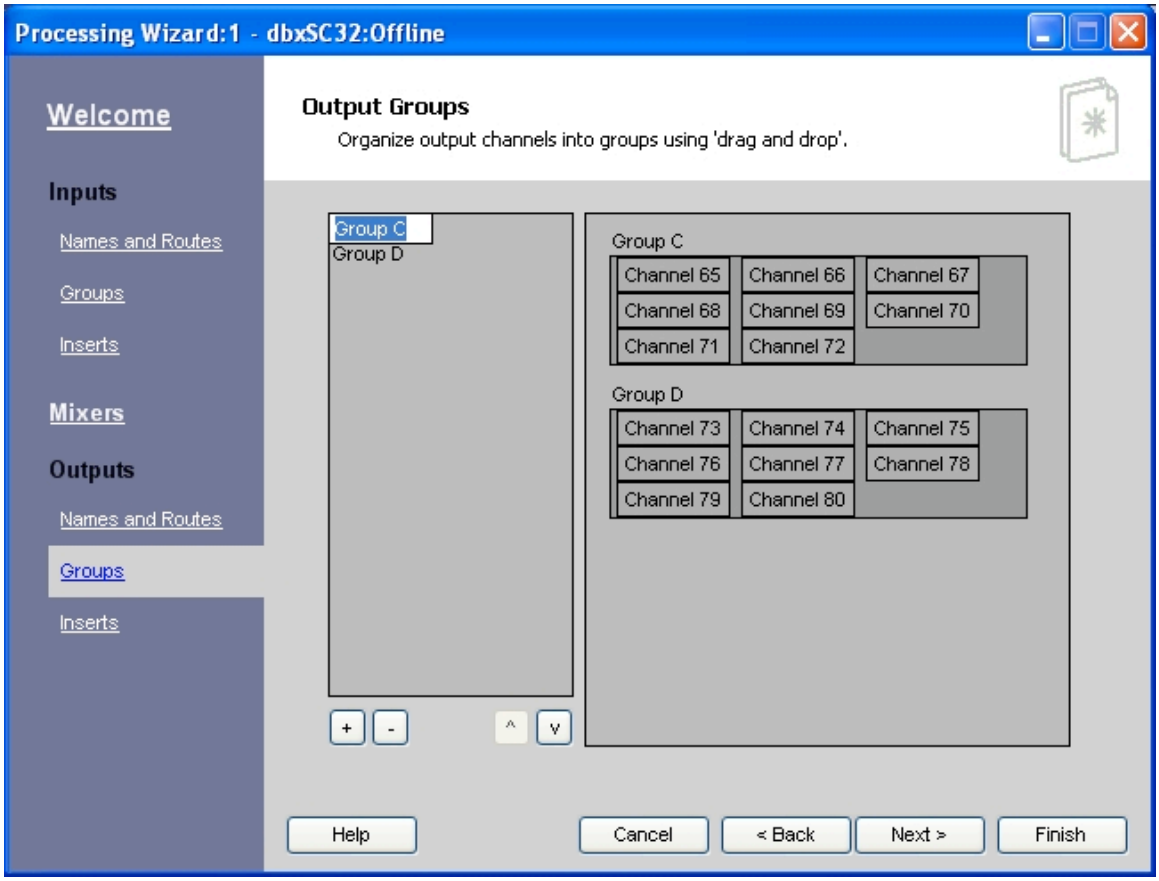
Then click on either the up or down arrow  to move the group up and down in the list.

Moving DSP output channels to another Group

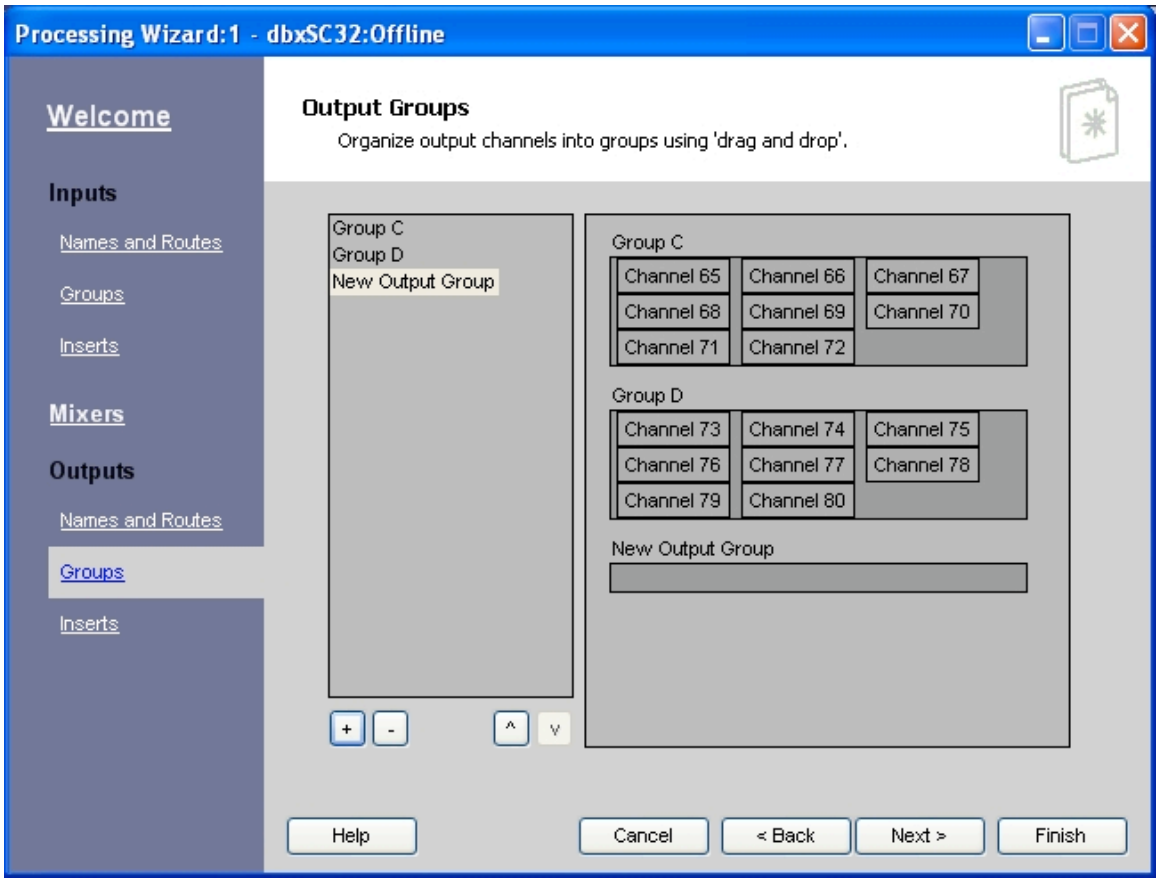
Once you have named your outputs, the new name will appear as an output channel within a group. The default in a 16x16 I/O configuration will appear with Outputs 65-72 in "Group C" and Outputs 73-80 in "Group D". (NOTE: the numbering system is based on the highest number of inputs (1-64) and the highest number outputs (65-128) so numbers and controls never overlap). You may have as many of the output channels in any one group as you wish.

To move a DSP output channel to another group, click and drag that channel from one group to the next. You may wish to reorder the DSP output channels within a group as well. You may do this by dragging the DSP output channel to another location within the group to create any channel order required for best use.

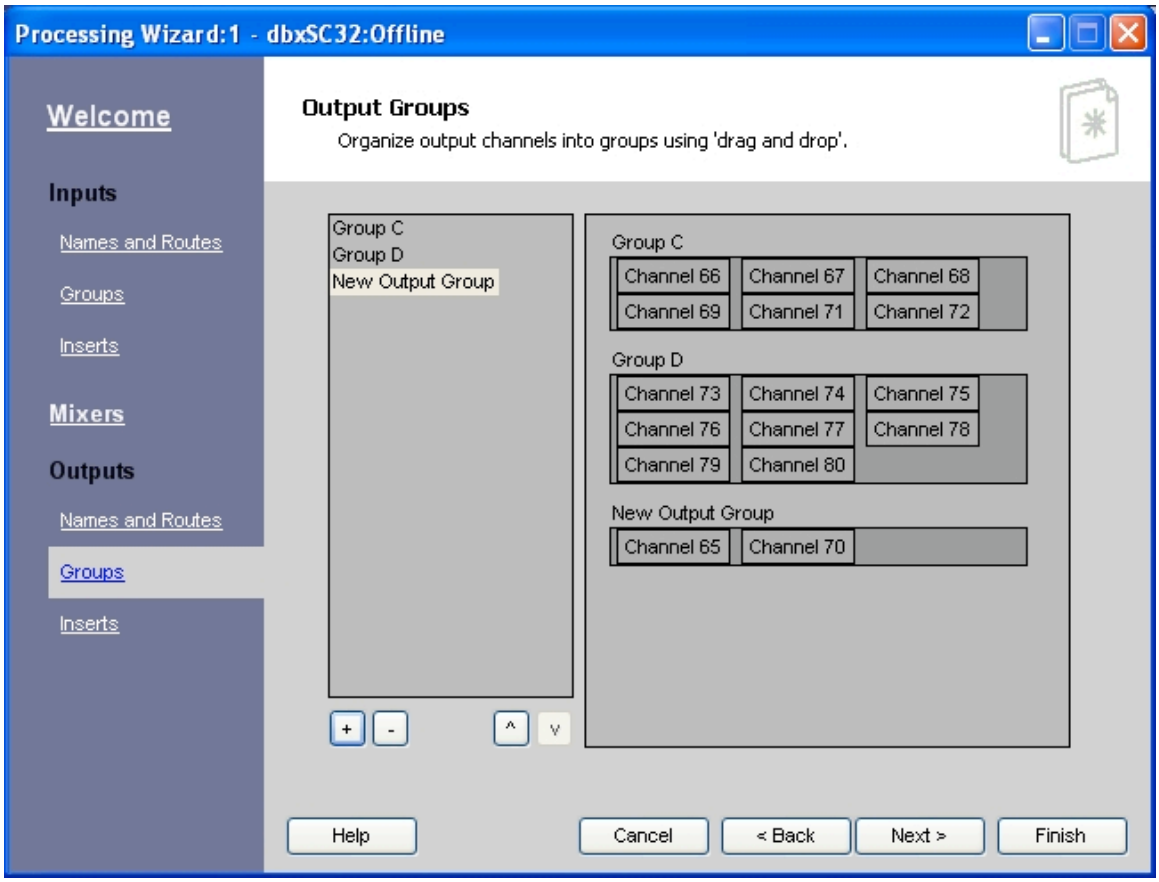
Default with 16x16 I/O configuration.



One Group Added.



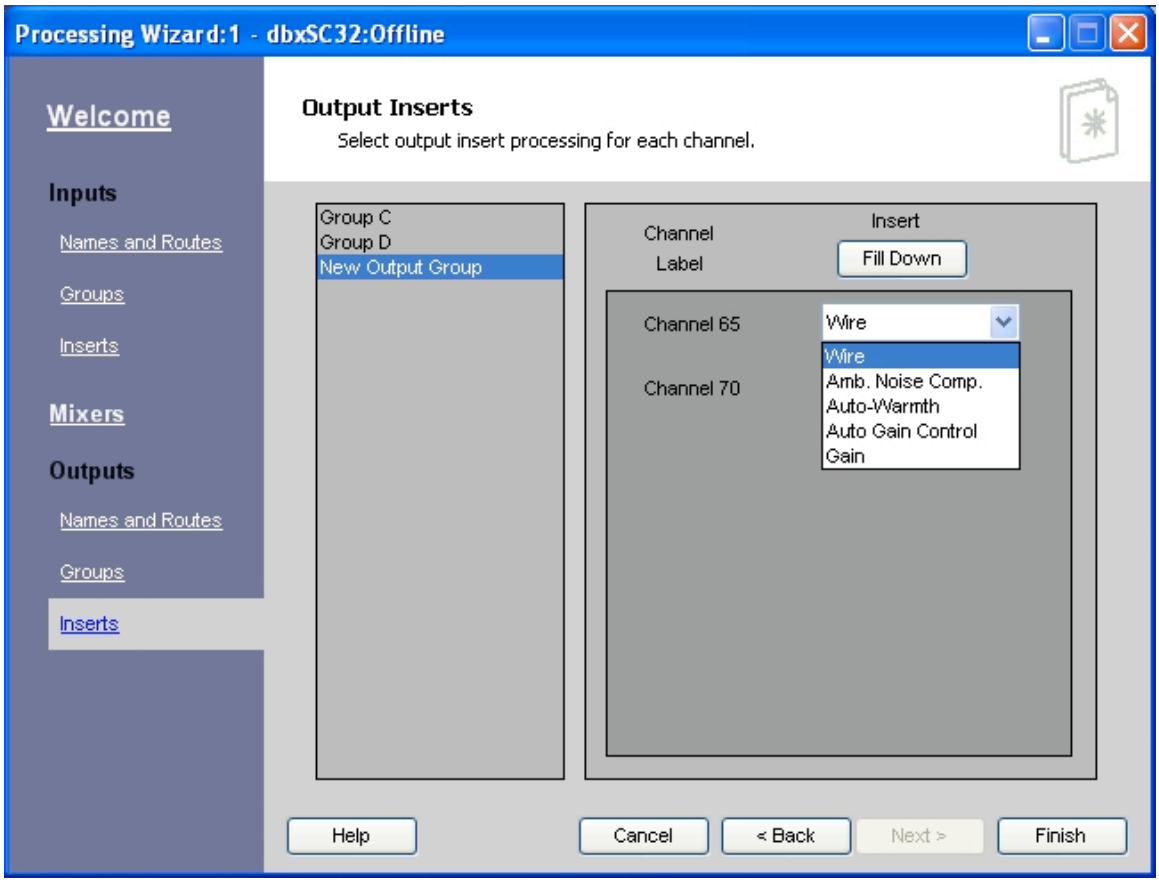
Channel 65 and Channel 70 moved to the new group.


Processing Wizard:1 - dbxSC32:Offline
Welcome
Inputs
Names and Routes
Groups
Inserts
Mixers
Outputs
Names and Routes
Groups
Inserts
Output Groups
Organize output channels into groups using 'drag and drop'.
Group C
Group D
New Output Group
+
-
^
v
Group C
Channel 66
Channel 67
Channel 68
Channel 69
Channel 71
Channel 72
Group D
Channel 73
Channel 74
Channel 75
Channel 76
Channel 77
Channel 78
Channel 79
Channel 80
New Output Group
Channel 65
Channel 70
Help
Cancel
< Back
Next >
Finish

Output Inserts - SC 32 / SC 64

To get to the Output Inserts section of the Processing Wizard, click on the Output Inserts quick link or click on the Next button until the Inserts option is selected under Outputs.

Output Inserts allows you to choose which type of DSP processing will be inserted for use on each output channel.



As you can see from the image above, the inserts are set up in the order of the groups that you have created or selected. Clicking on a group name will allow you to insert Processing Modules for the channels within that group.

Once you have selected a group, you may then use the dropdown menu for the Insert for a selected channel.

Clicking on the Insert dropdown menu for channel one, as seen above, will allow you to choose from one of the following Processing Module inserts.

1) Wire (default)

2) Amb. Noise Comp. (Ambient Noise Compensation)

3) Auto-Warmth

4) Auto Gain Control

5) Gain

You will choose Output Insert Processing Modules in groups as you did with the Input Inserts.

Once you choose an Output Insert Processing Module, you may click on the Fill Down button to populate remaining inserts with the insert that you have chosen for the first channel within the group.

ZC Wizard - SC 32 / SC 64

Zone Controller Wizard - SC 32 / SC 64

The SC 32 and SC 64 are semi-fixed architecture DSP matrix processors.

The configuration of Zone Controllers (ZCs) is made easy through the use of the Zone Controller Wizard.

The Wizards represent an easy way to set up your SC 32 and SC 64. These Wizards are designed to guide you step-by-step through the selection, options, connection and DIP switch assignment for each Zone Controller. Simply fill in the blanks provided in this step-by-step process and you have control.

When designing a system with an SC 32 or SC 64, in either online or offline mode, you will need to complete the following steps to properly configure your install.

To access the Zone Controller Wizard, click on the Tools Menu as seen below.

Move your mouse over the Wizards option.

A fly out menu will appear.

Click on the Zone Controller Wizard option.



The Welcome Screen for the Wizard will appear.



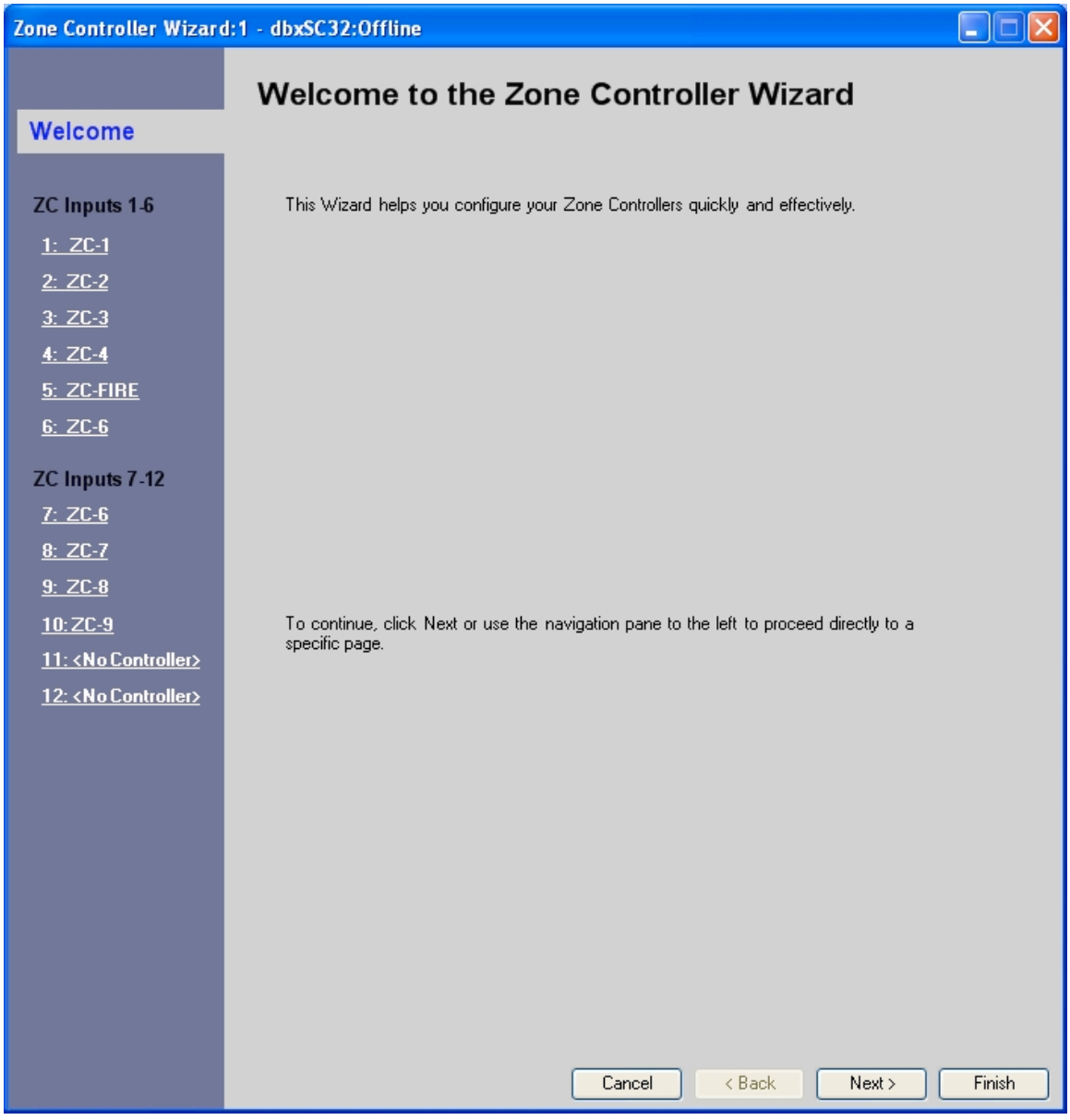
Please see the following sections for programming ZC Controllers.

Navigating the ZC Controller Wizard

Zone Controller Options

Navigating the ZC Wizard - SC 32 / SC 64

Navigating the Zone Controller Wizard is made easy through the Quick Links to the left side of the window or through the NEXT and BACK buttons located at the bottom of the Wizard Screen.



You may click on cancel at any time to exit out of the Wizard without saving any of the changes.

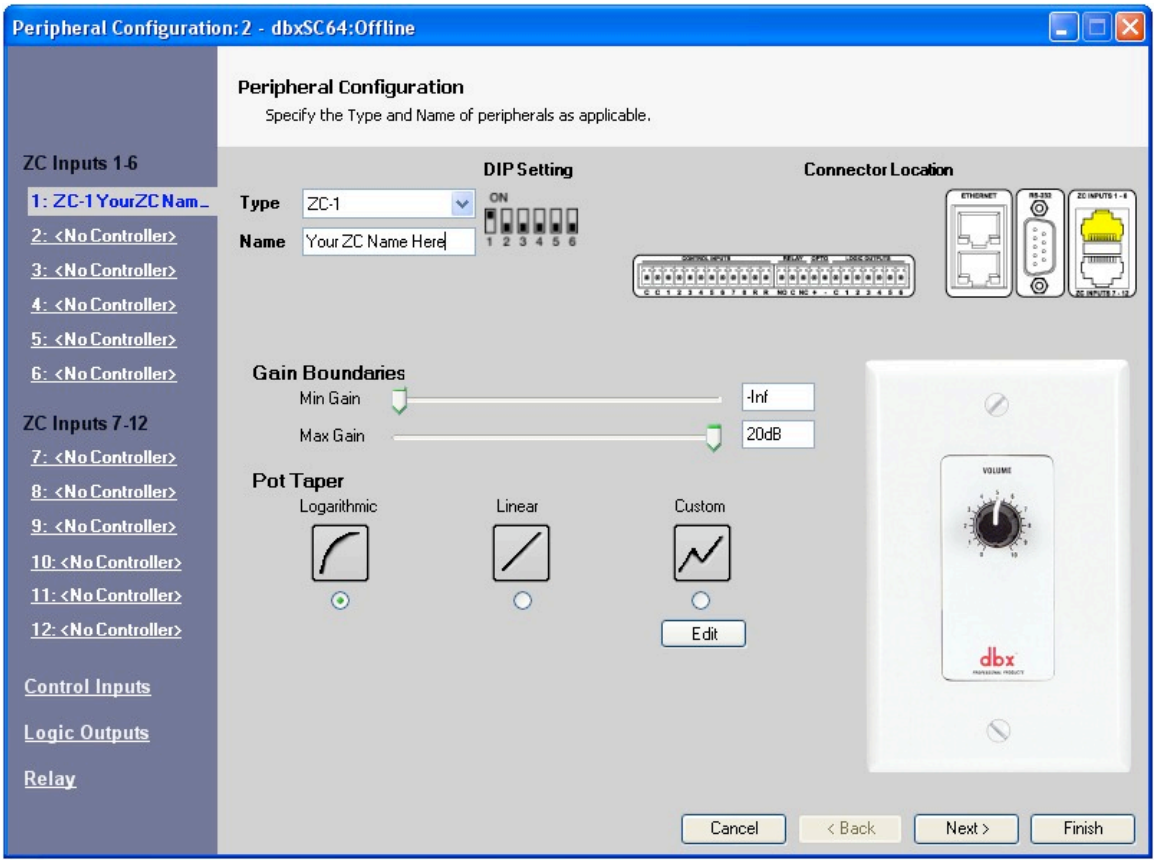
When you have completed any or all sections of this Wizard and wish to implement the changes made simply press the FINISH button located at the bottom right of the Zone Controller Wizard window. This will save your design to either an offline version of your device or load it straight into an online device.

Click on the NEXT button or on the 1: <type of controller> link to the left. You will have already inserted Zone Controllers in the Peripheral Configuration Wizard.

(See Peripheral Configuration)

In this example I have already assigned a ZC-1 to the 1: <No Controller> port in the peripherals Configuration.

The 1: ZC-1 window will appear as seen below.



In the main right portion of the window you will see the following.

1) Type - This is the ZC Controller that is attached to the 1: ZC-1 port.

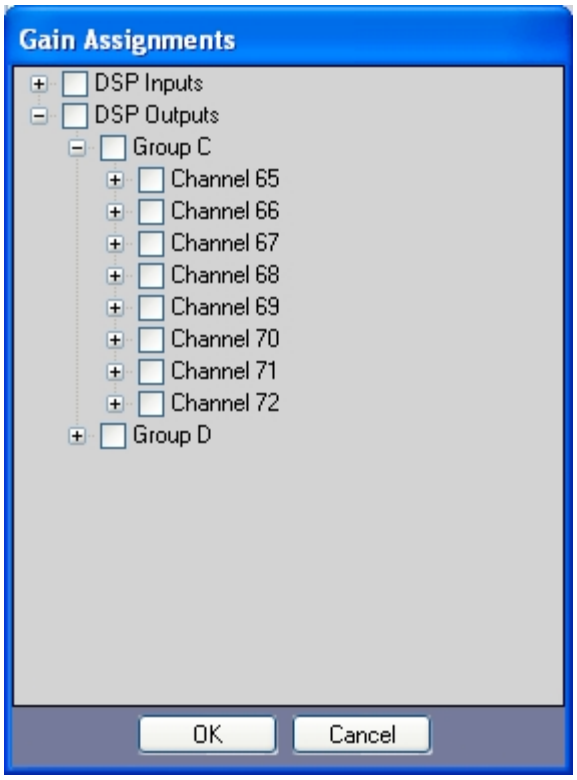
2) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Volume.

3) Action - The Action dropdown is where you will choose the action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-1 will only allow Actions as listed below.

a. Gain - Adjust level

4) Below this section is a Gain Assignments section.

When you click on Add/Remove, the following window will appear.



5) This window allows you to select which DSP Channel Input or Output Gains to control with the ZC-1 volume control. Multiple Gains can be assigned to a single ZC Controller.

Please see the following sections.

Zone Controllers

ZC-1

ZC-2

ZC-3

ZC-4

ZC-Fire

ZC-6

ZC-7

ZC-8

ZC-9

SC ZC Options - SC 32 / SC 64

SC ZC Options - SC 32 / SC 64

The SC 32 and SC 64 may use a wide array of external controls. One of the options is the ZC or Zone Controller.

The Zone Controllers offer extended utility to the SC 32 and SC 64. The nine Zone Controllers use analog DC voltage to provide logic control ranging from zone source selection, volume and muting, to Device Preset, Panel Preset and Venue Recall selection and fire safety muting. Wired with readily available and affordable CAT5 cable, with universally accepted RJ-45 connectors at distances up to 1000 ft, the ZC Zone Controllers offer simple yet elegant solutions to the contractor.

For wiring specifications see Wiring.

The Zone Controller options are as follows.

ZC-1

This remote device provides computer programmable rotary volume control for the dbx DriveRack 260, 220i, 4800, ZonePRO™ and SC devices. The remote device has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-1 and ZC-1-EU.





ZC-1

ZC-2

This remote device provides computer programmable rotary volume and push-button mute control for the dbx DriveRack 260, 220i, 4800, ZonePRO™ and SC devices. The remote device has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-2 and ZC-2-EU.



ZC-3

The remote device provides programmable rotary switch selection for the dbx DriveRack 260, 220i, 4800, ZonePRO™ and SC devices. The remote device provides rotary switch programmable source selection, page assignment, or scene selection. The remote has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-3 and ZC-3-EU.



ZC-4

The remote device provides programmable program selection via contact closures for the dbx DriveRack 4800, ZonePRO™ and SC devices. The remote device provides programmable source selection, page assignment, or scene selection. The remote has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-4.



ZC-FIRE

The remote device provides either output muting or programmable scene selection. Connection to the fire safety system shall be either through a relay or directly to the control voltage output. The remote device has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-Fire.



ZC-6

The remote device provides computer programmable push-button up/down volume control. The remote device has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-6 and ZC-6-EU.



ZC-7

The remote device provides preset selection or programmable push-to-talk page assignment. The remote device has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-7 and ZC-7-EU.





ZC-8

The remote device provides both programmable push-button up/down volume control, and programmable rotary switch source selection. The remote device has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-8 and ZC-8-EU.





ZC-9

The remote device provides programmable 8 position source selection. The remote device has DIP switches allowing identification with connection to the processing device via CAT 5 cable on RJ-45 connectors. Seen here is the ZC-9 and ZC-9-EU.





ZC-BOB

The remote device provides up to 6 RJ-45 input jacks for "Home Run" or parallel wiring configurations. The remote device has one output RJ-45 jack for connection to the dbx device. The ZC-BOB is designed to allow longer cable lengths to multiple controllers. Seen here is the ZC-BOB.


DriveRack ZC-BOB
ZoneController - Break Out Box

ZC1 - SC 32 / SC 64

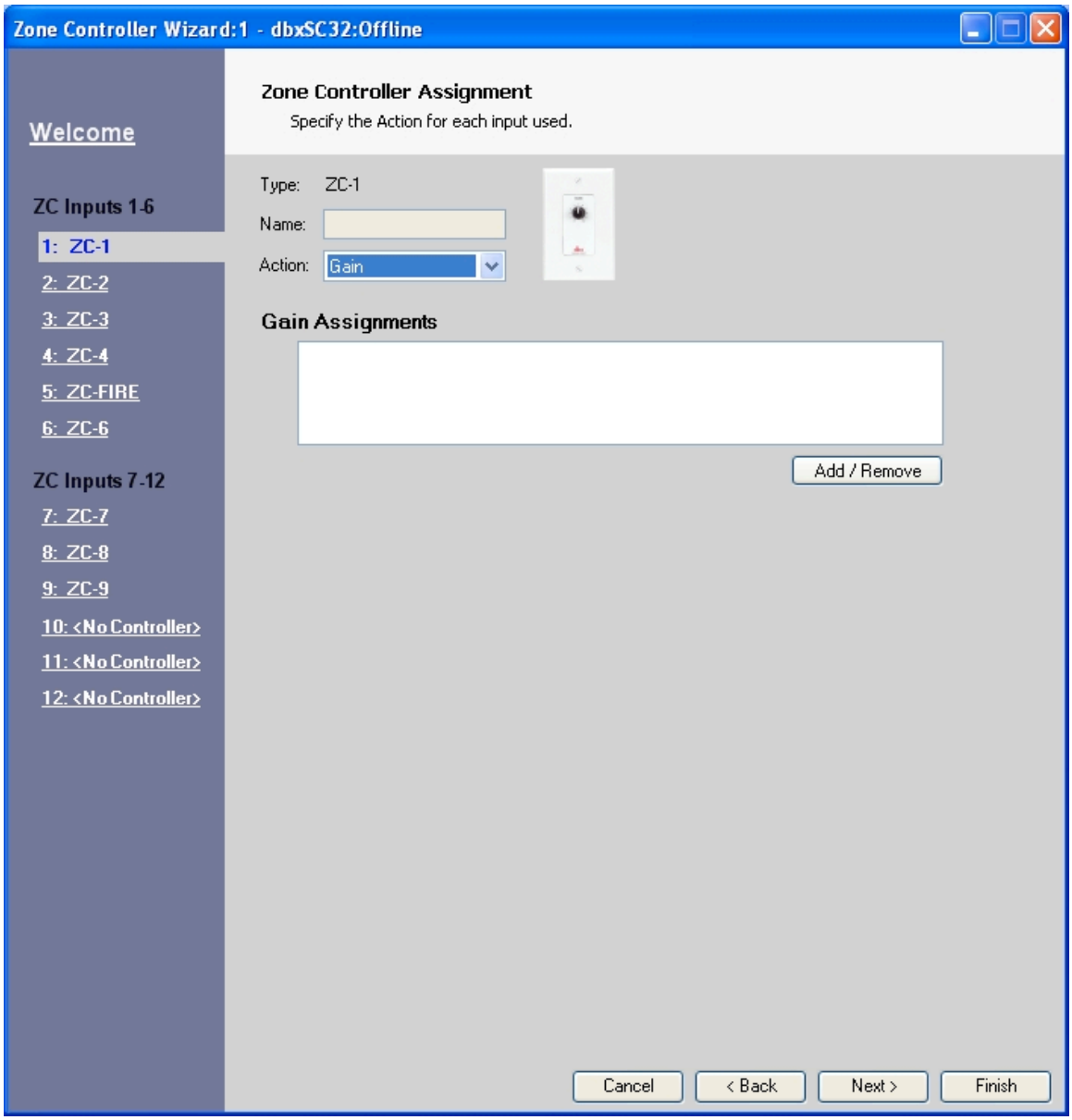
The ZC-1 controller is the most commonly used controller and is used for volume control of an input mic or line or output zone.

You can see below that a ZC-1 has already been configured in the Tools->Hardware Configuration->->Peripheral Configuration Wizard and is listed as 1: ZC-1 below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 1: ZC-1 link to the left.

The 1: ZC-1 window will appear as seen below.



In the main right section of the window you will see the following.

6) Type - This is the ZC Controller that is attached to the 1: ZC-1 port.

7) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Volume.

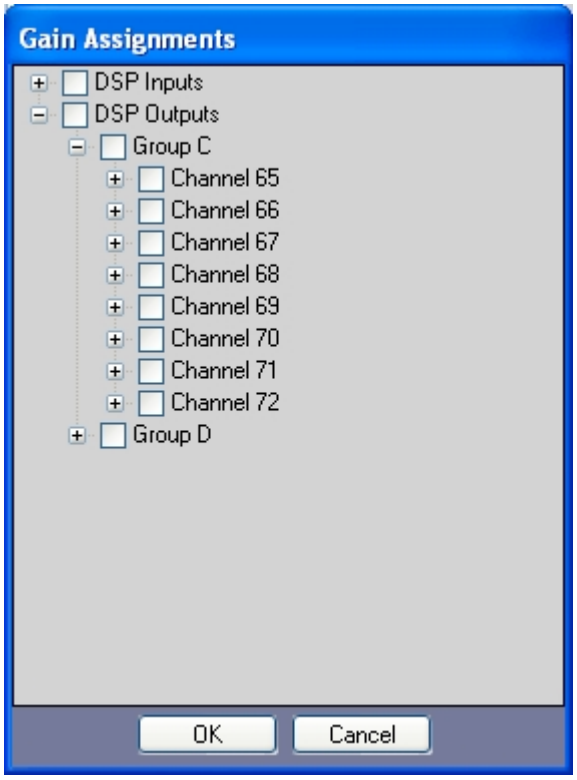
8) Action - The Action dropdown is where you will choose the action that the ZC Controller will complete when adjusted. There are several actions that a ZC

Controller may take. These are driven by the type of Controller. The ZC-1 will only allow Actions as listed below.

a. Gain - Adjust level

9) Below this section is a Gain Assignments section.

When you click on Add/Remove, the following window will appear.



10) This window allows you to select which DSP Channel Input or Output Gains to control with the ZC-1 volume control. Multiple Gains can be assigned to a single ZC Controller.

ZC2 - SC 32 / SC 64

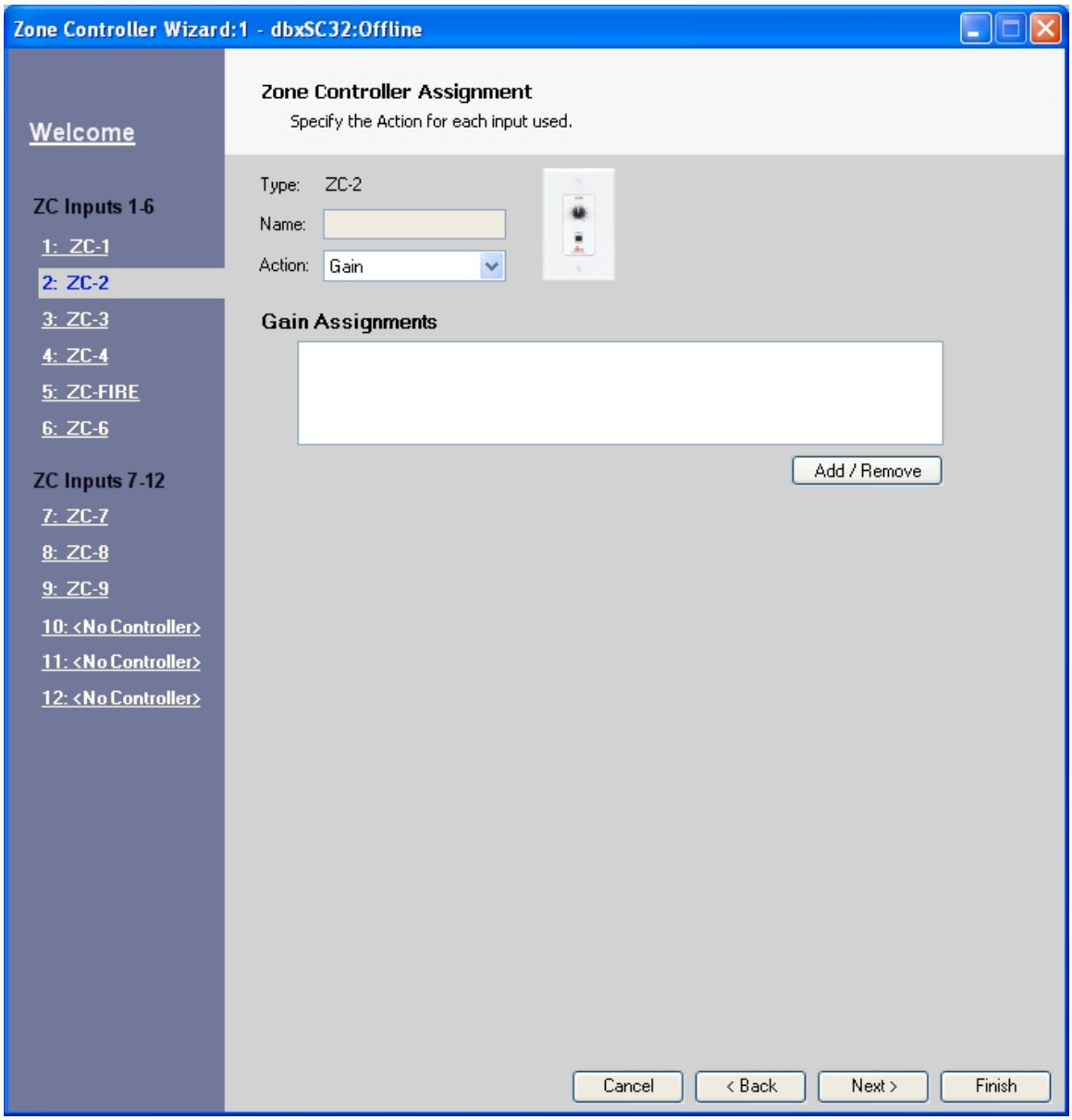
The ZC-2 controller is a commonly used control for volume control and mute of an input (mic or line) or output zone.

You can see below that a ZC-2 has already been configured in the Tools->Hardware Configuration->Peripheral Configuration Wizard and is listed as 2: ZC-2 below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 2: ZC-2 link to the left.

The 2: ZC-2 window will appear as seen below.



In the main right section of the window you will see the following.

11) Type - This is the ZC Controller that is attached to the 2: ZC-2 port.

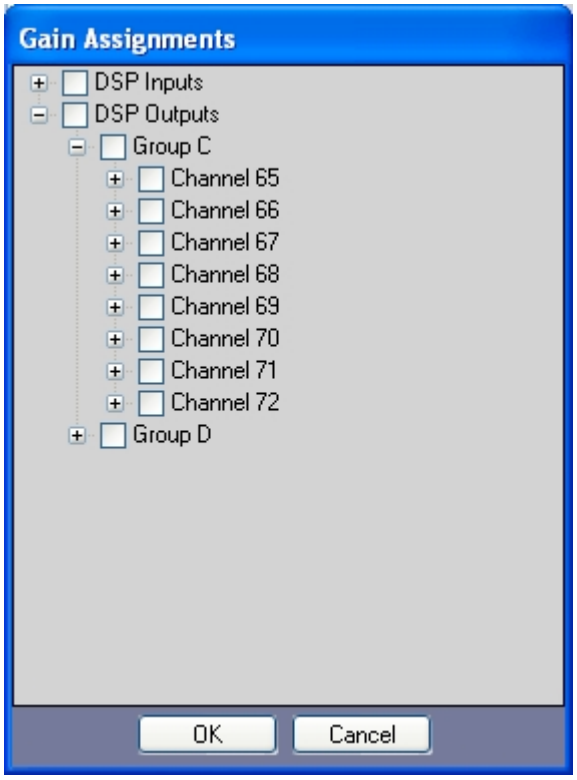
12) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Volume.

13) Action - The Action dropdown is where you will choose the action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-2 will only allow Actions as listed below.

a. Gain - Adjust level

14) Below this section is a Gain Assignments section.

When you click on Add/Remove, the following window will appear.



15) This window allows you to select which DSP Channel Input or Output Gains to control with the ZC-2 volume control. Multiple Gains can be assigned to a single ZC Controller.

ZC3 - SC 32 / SC 64

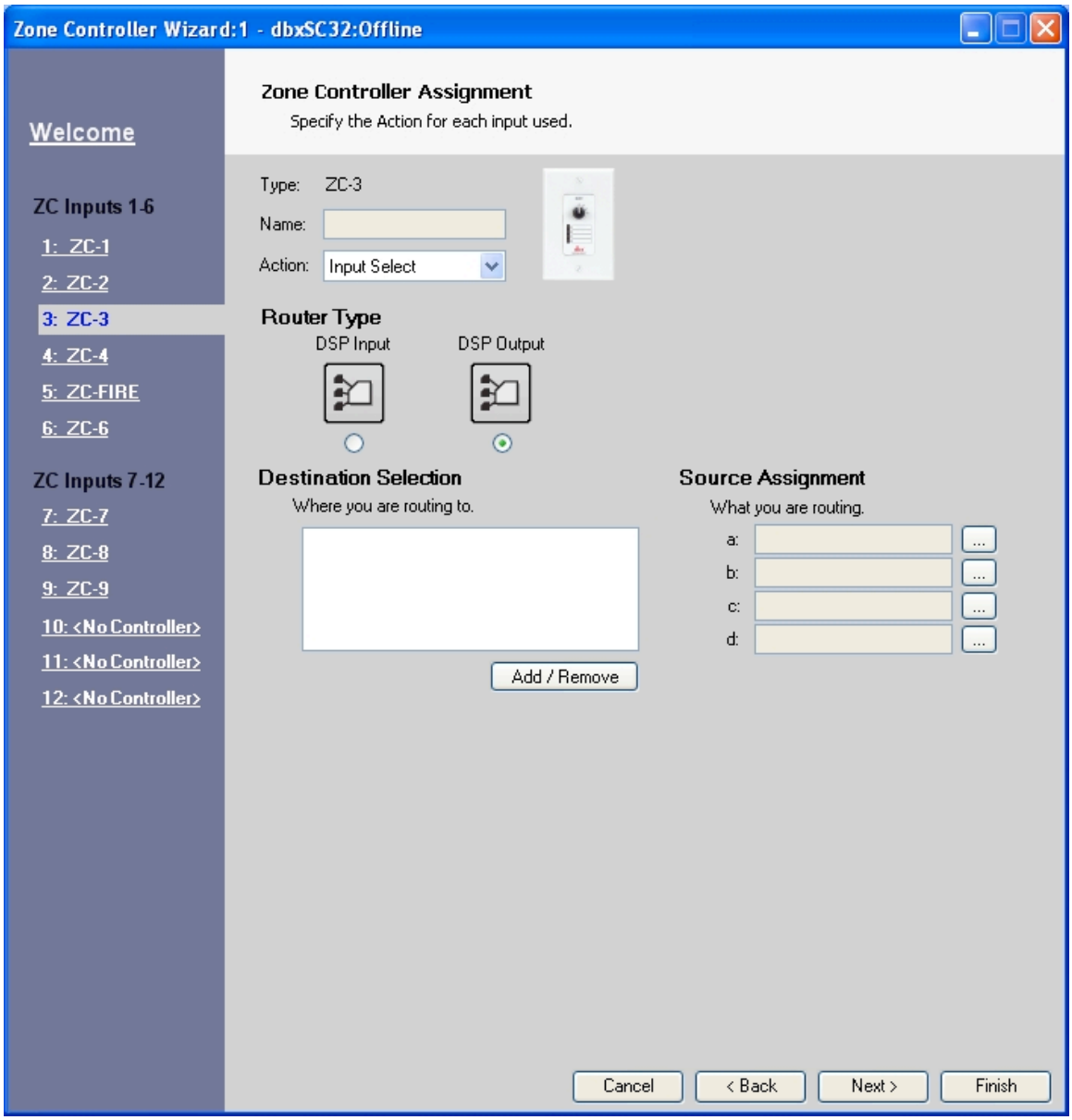
The ZC-3 controller is used to select sources, Device Presets, Panel Presets,Venue Recalls and for page steering.

You can see below that a ZC-3 has already been configured in the Peripheral Configuration Wizard and is listed as 3: ZC-3 below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 3: ZC-3 link to the left.

The 3: ZC-3 window will appear as seen below.



In the main right section of the window you will see the following.

1) Type - This is the ZC- Controller that is attached to the 3: ZC-3 port.

2) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Source.

3) Action - The Action dropdown is where you will choose the action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-3 will only allow Actions as listed below.

a. Input Select - Selects the input to be routed to an Input or Output

b. Actions Select - Selects any Actions to be performed. This may be in the form of Device Presets, Panel Presets or Venue Recalls assigned to the four positions.

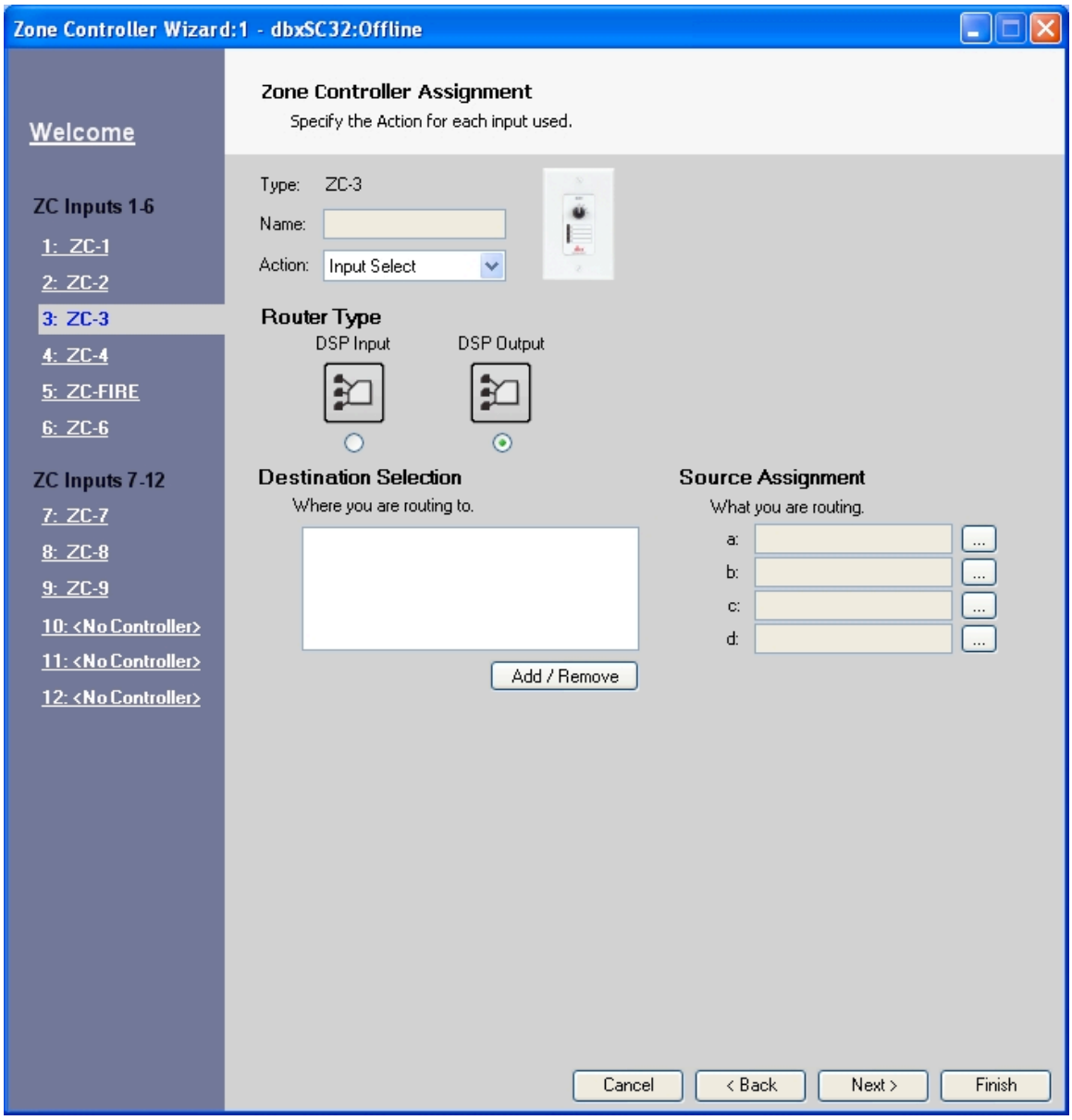
4) Router Type - This control allows you to choose the Input Router section or the Output Router section as the target for the Destination.

5) Destination Selection - Based on the Router Type selected, this control allows you to further narrow down which DSP Input(s) or DSP Output(s) are controlled via the ZC.

6) Source Assignment - This section determines what will be routed to the selected destination(s).

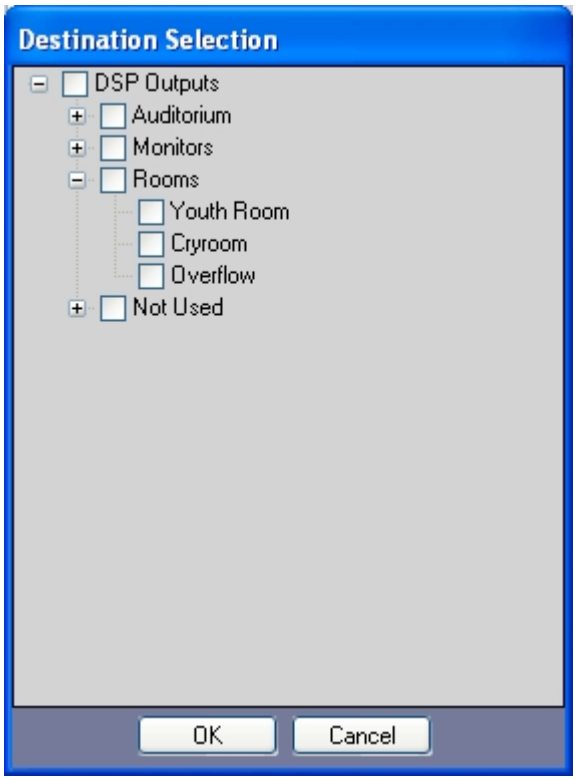
Action: Input Select

When Input Select is listed in the Action dropdown list, the following screen will display.



You will now choose a destination (or multiple destinations) where a Source will be routed.

Clicking on the Add/Remove button will bring up the following screen.



Select the Destinations from the list to which the Source will be routed.

Click on OK to save changes.

From the Source Assign section you will now click on the Source Assign button as seen below.



The Route Selection window will open.

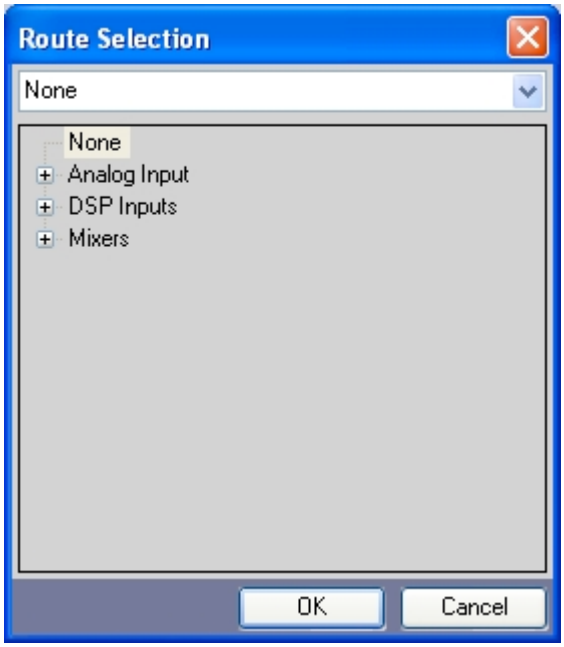
If DSP Input is selected for Router Type you will get the following options:

- Analog Input

If DSP Output is selected for Router Type you will get the following options:

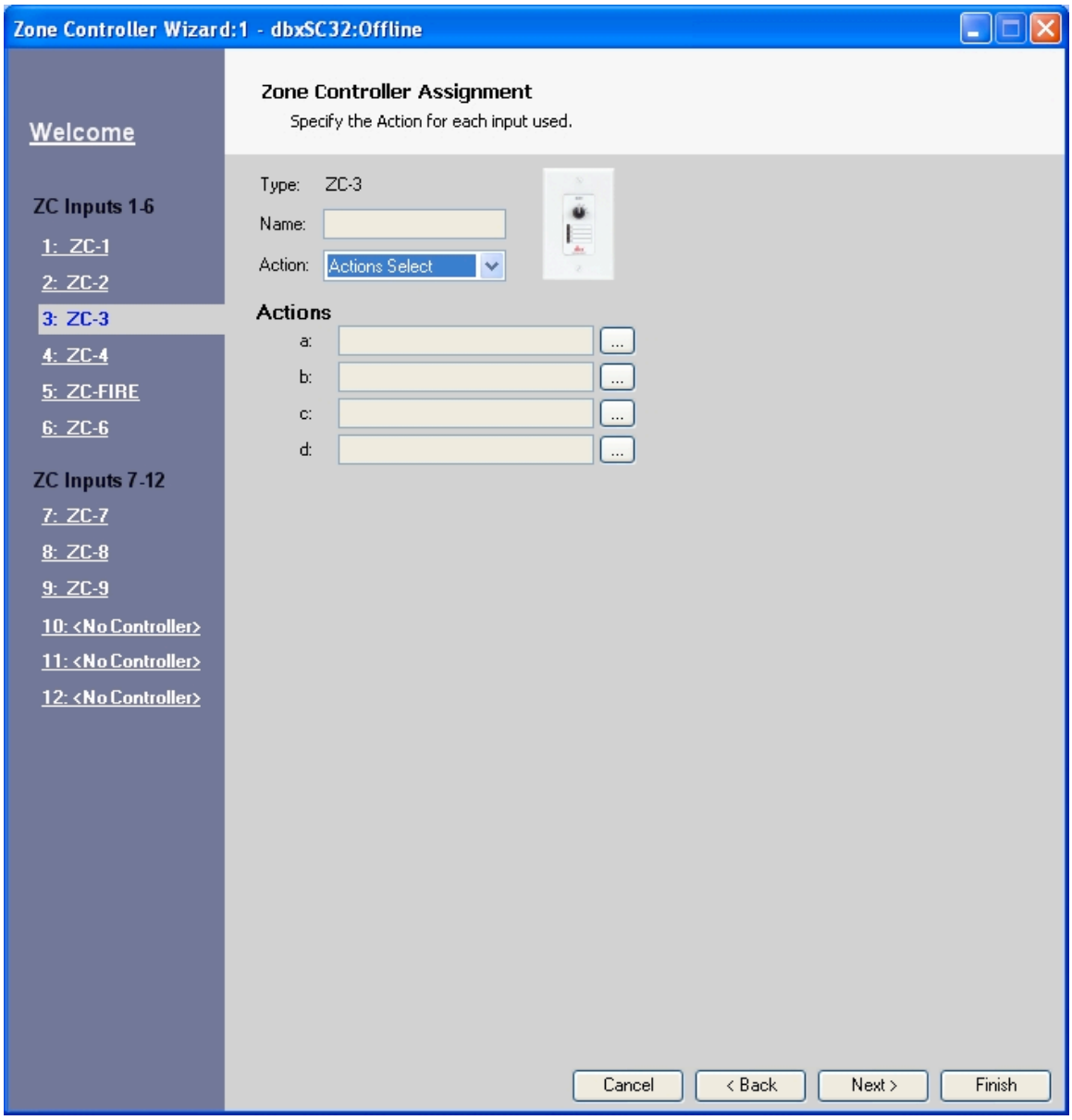
- Analog Inputs

- DSP Inputs
- Mixers



Action: Actions Select

When Actions Select is listed in the Action Dropdown Menu, the following screen will display.

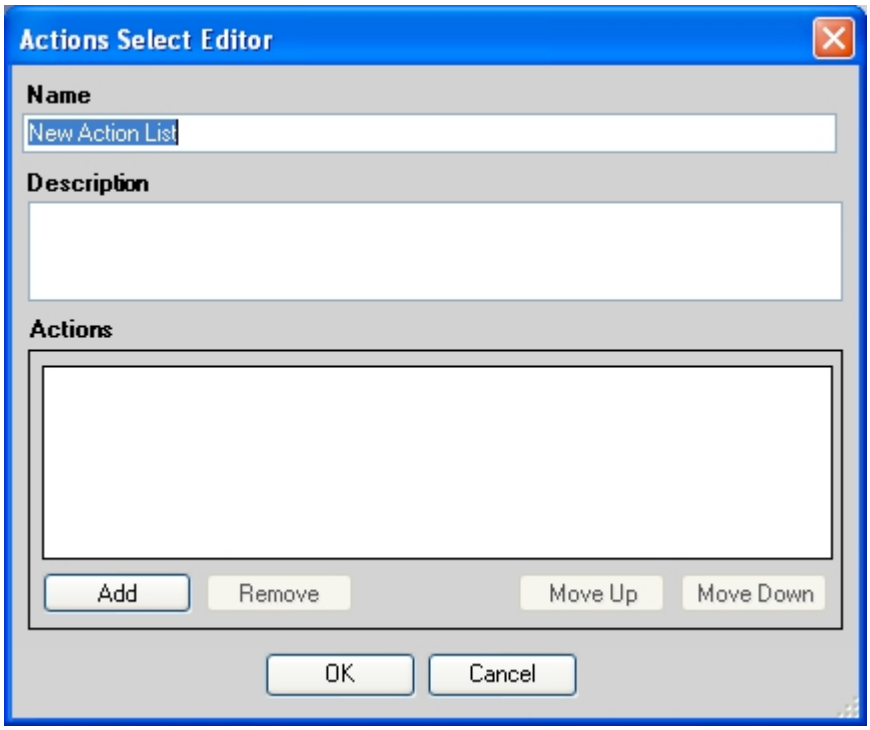


You will now choose an action to be taken when in the ZC-3 is switched through between "a" and "d".

Click on the button to the right of each letter to open the Action Select Editor.



The Action Select Editor opens as seen below.



The Action Select Editor allows you to name your Action List, provide a Description and Add and Remove Actions.

The Add and Remove buttons allow you to Add actions and Remove them as needed.

The Move Up and Move Down Buttons allow you to reorder the Actions within the list.

Click on the Add Button to create a new action for the ZC-3 in position "A".

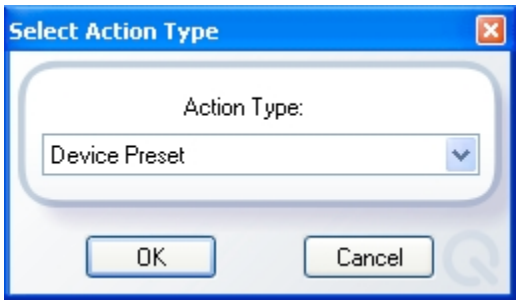
The Select Action Type window will appear.

The dropdown list will allow you to recall one of the following 3 actions.

1) Device Preset

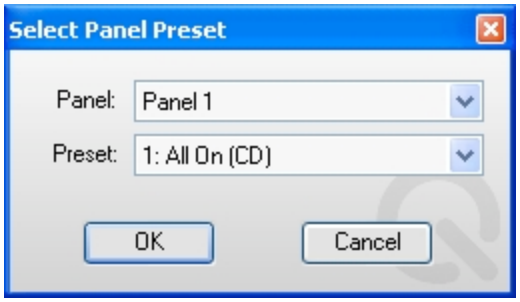
2) Panel Preset

3) Venue Recall



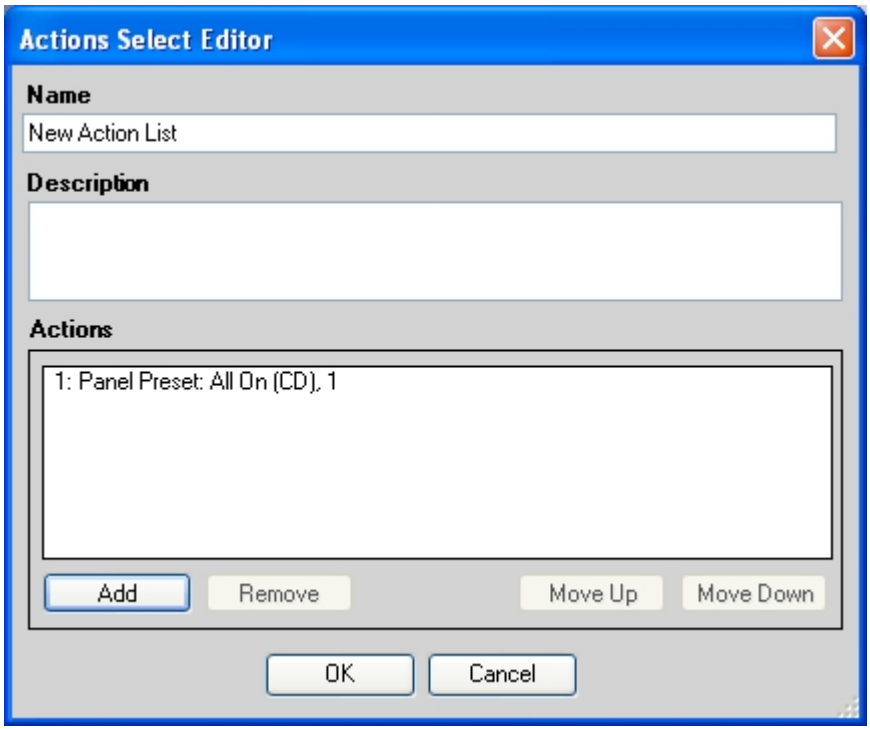
In this case I am going to choose a Panel Preset. Please see Panel Preset to create Panel Presets.

The Select Panel Preset window opens.



You may now select the Panel and the Panel Preset that will be recalled when the ZC-3 is changed between positions "A" and "D".

Once you click on OK, the changes will appear in the Actions Select window.



Click on OK and your Action is set.

Complete the preceding steps for actions in the "B", "C" and "D" positions.

ZC4 - SC 32 / SC 64

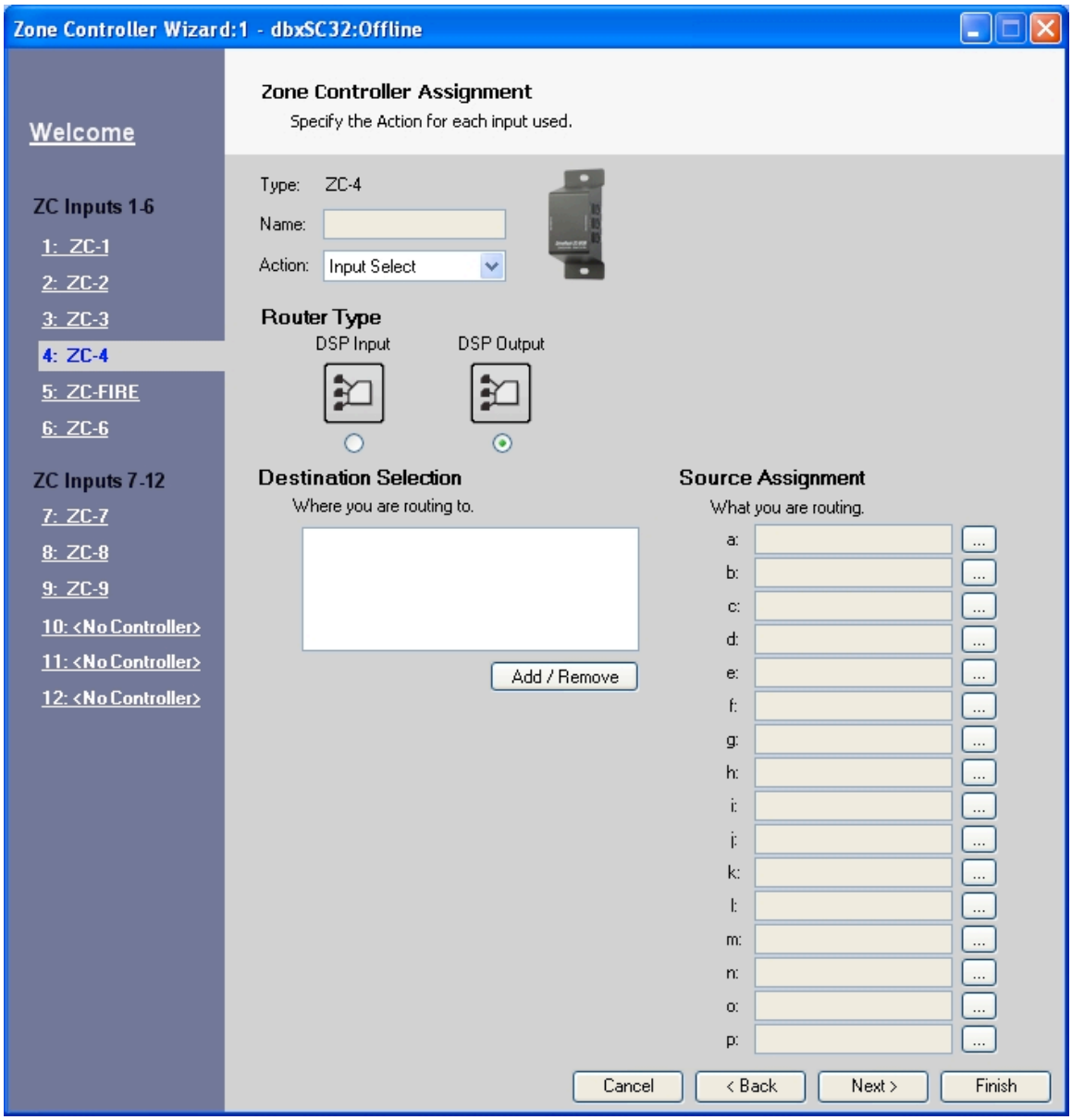
The ZC-4 controller is used to select sources, Device Presets, Panel Presets,Venue Recalls and for page steering.

You can see below that a ZC-4 has already been configured in the Peripheral Configuration Wizard and is listed as 4: ZC-4 below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 4: ZC-4 link to the left.

The 4: ZC-4 window will appear as seen below.



In the main right portion of the window you will see the following.

In the main right section of the window you will see the following.

7) Type - This is the ZC Controller that is attached to the 4: ZC-4 port.

8) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Source.

9) Action - The action dropdown is where you will choose the action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-4 will only allow Actions as listed below.

a. Input Select - Selects the input to be routed to an Input or Output

b. Actions Select - Selects any actions to be performed. This may be in the form of Device Presets, Panel Presets or Venue Recalls assigned to the 16 positions.

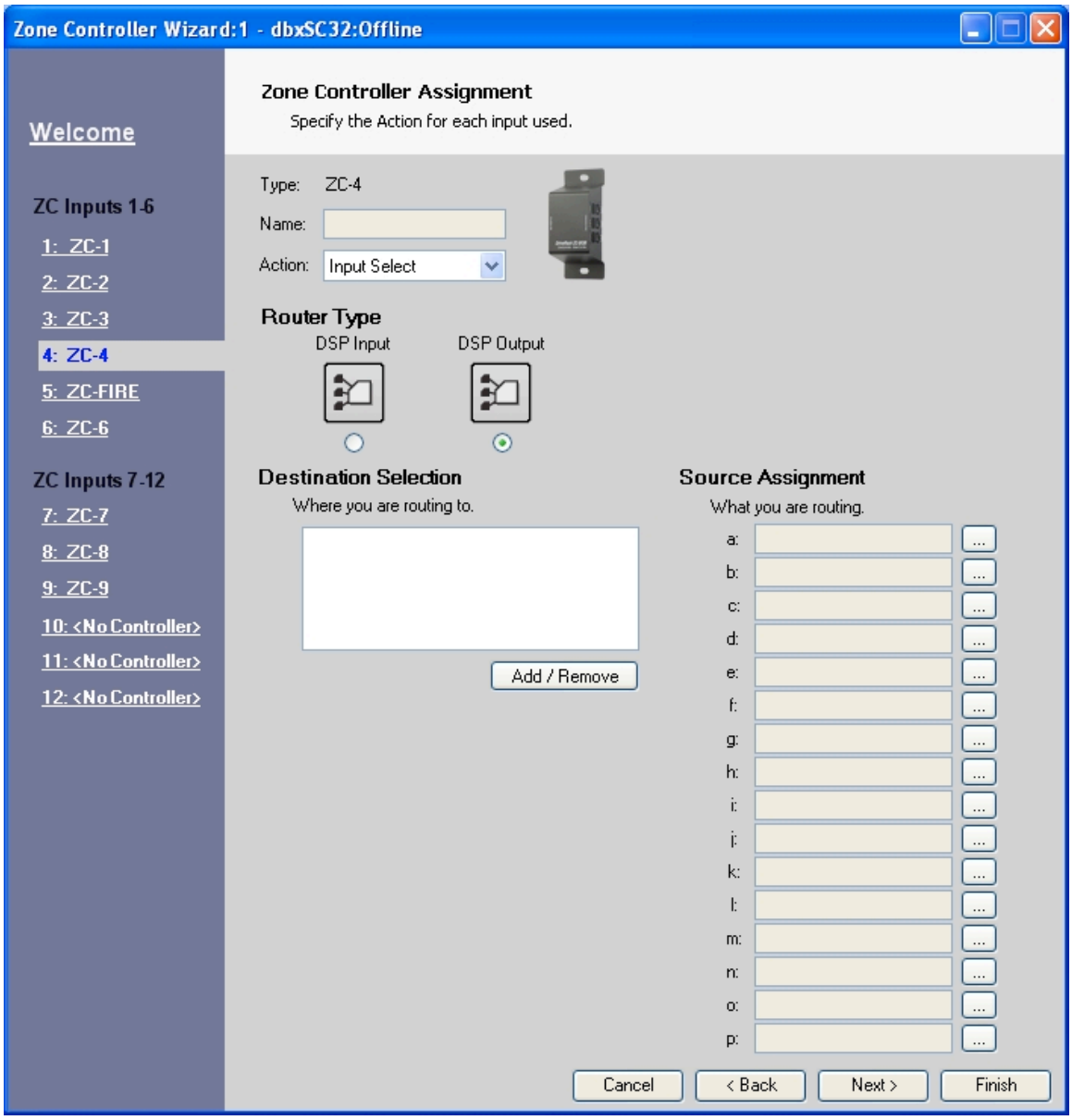
10) Router Type - This control allows you to choose the Input Router section or the Output Router section as the target for the Destination.

11) Destination Selection - This control allows you to choose where you are routing the assigned Source. Multiple destinations can be selected.

12) Source Assignment - This section determines what will be routed to the selected destination(s).

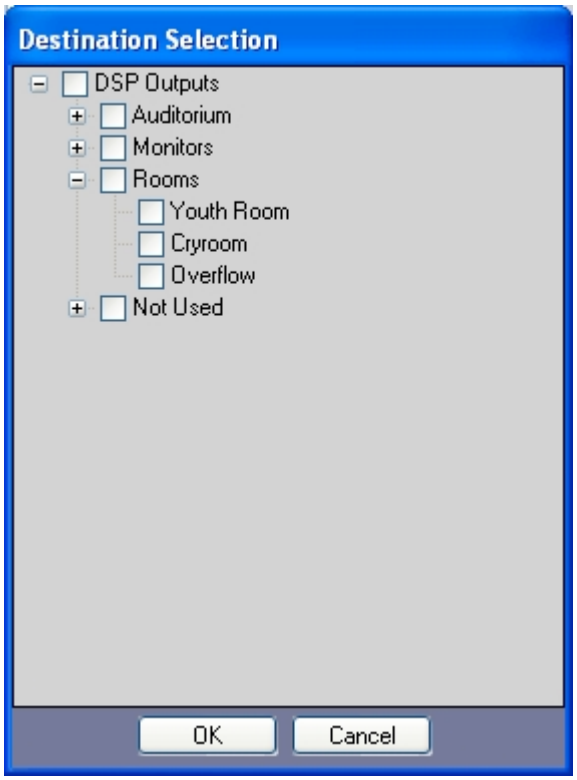
Action: Input Select

When Input Select is listed in the Action dropdown list, the following screen will display.



You will now choose a destination (or multiple destinations) where a Source will be routed.

Clicking on the Add/Remove button will bring up the following screen.



Select the Destinations from the list to which the Source will be routed.

Click on OK to save changes.

From the Source Assign section you will now click on the Source Assign button as seen below.



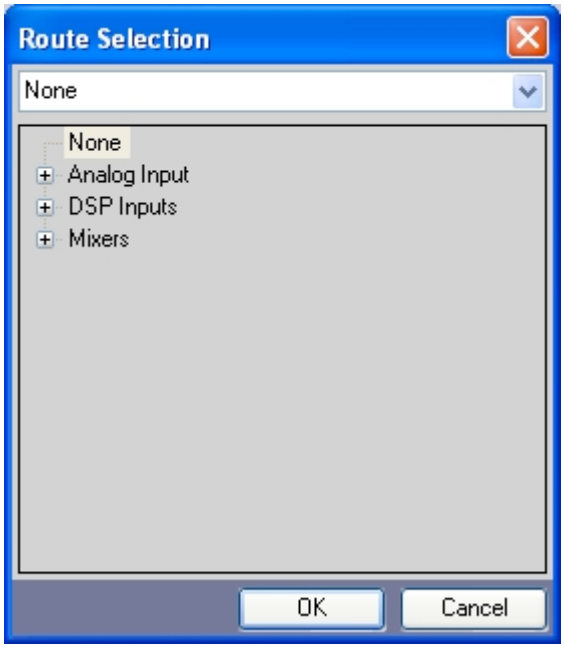
The Route Selection window will open.

If DSP Input is selected for Router Type you will get the following options:

- Analog Input

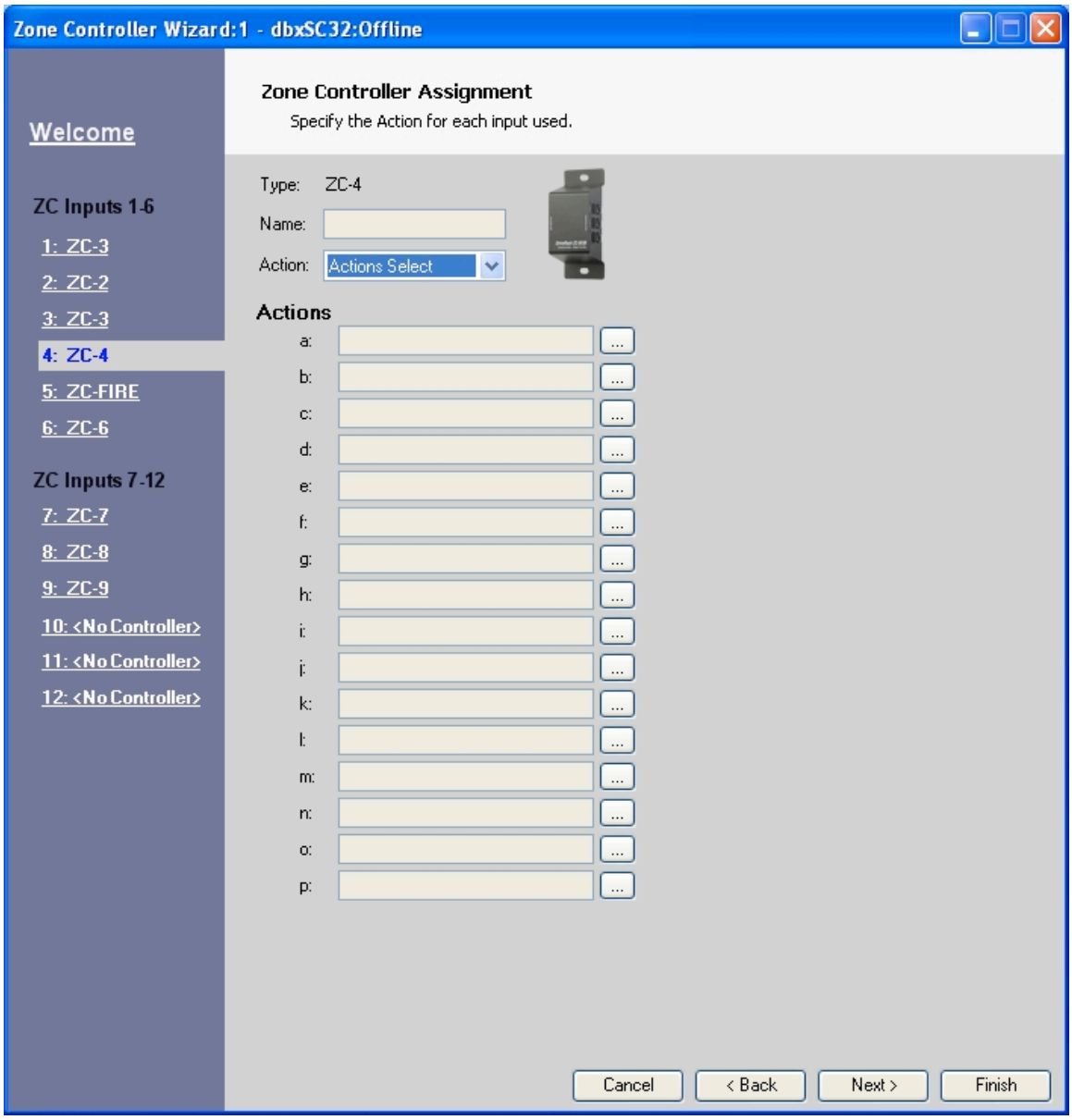
If DSP Output is selected for Router Type you will get the following options:

- Analog Inputs
- DSP Inputs
- Mixers



Action: Actions Select

When Actions Select is listed in the Action Dropdown Menu, the following screen will display.

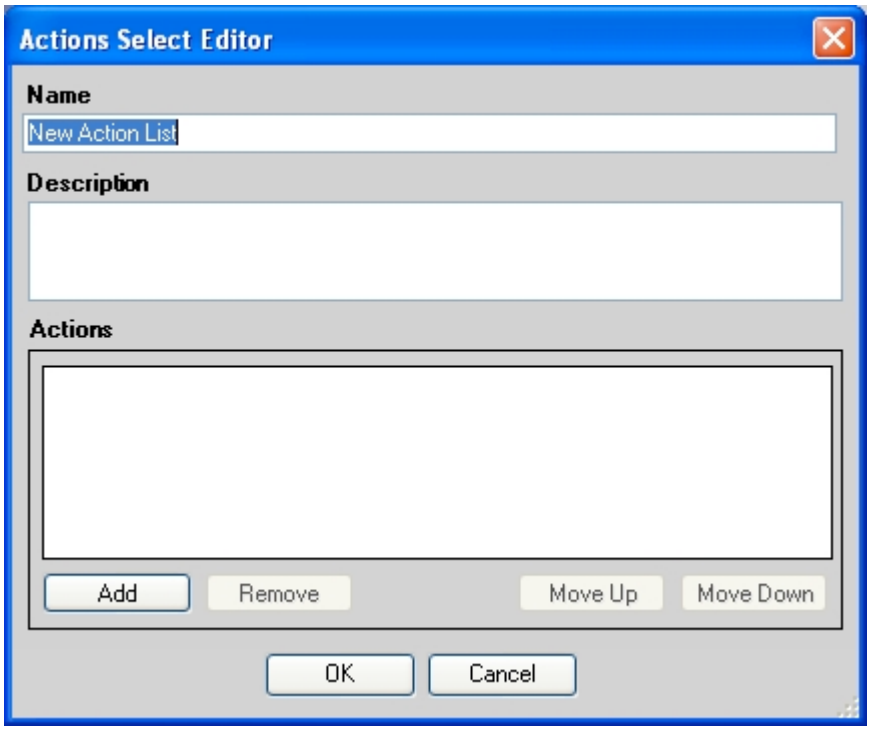


You will now choose an Action to be taken when the ZC-4 is switched through between "a" and "p" via binary contact closure.

Click on the button to the right of each letter to open the Actions Select Editor.



The Actions Select Editor opens as seen below.



The Actions Select Editor allows you to name your Action List, provide a Description and Add and Remove Actions.

The Add and Remove buttons allow you to Add actions and Remove them as needed.

The Move Up and Move Down Buttons allow you to reorder the Actions within the list.

Click on the Add Button to create a new action for this ZC-4 in position "a".

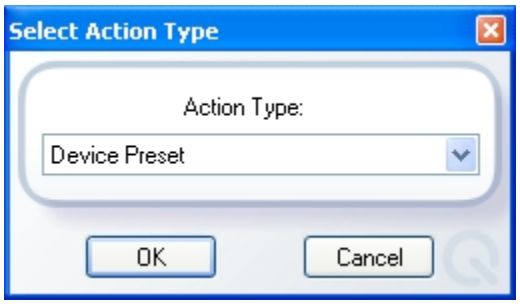
The Select Action Type window will appear.

The dropdown list will allow you to recall one of the following 3 actions.

4) Device Preset

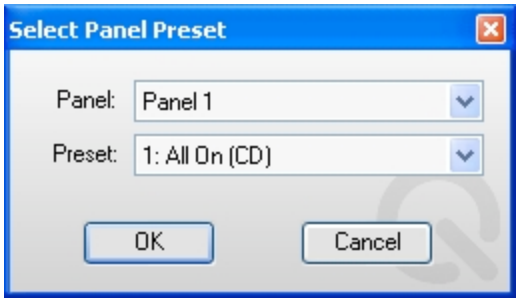
5) Panel Preset

6) Venue Recall



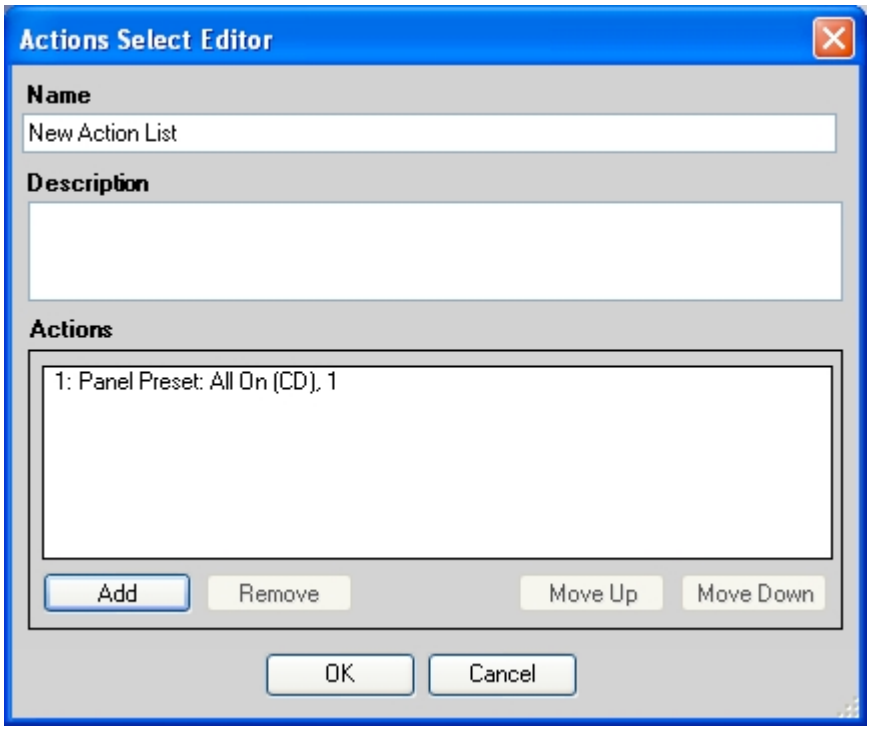
In this case I am going to choose a Panel Preset. Please see Panel Preset to create Panel Presets.

The Select Panel Preset window opens.



You may now select the Panel and the Panel Preset that will be recalled when the ZC-4 is changed between positions "a" through "p".

The changes once you click on OK will appear in the Actions Select window.



Click on OK and your action is set.

Complete the preceding steps for actions in the remaining positions.

ZCFIRE - SC 32 / SC 64

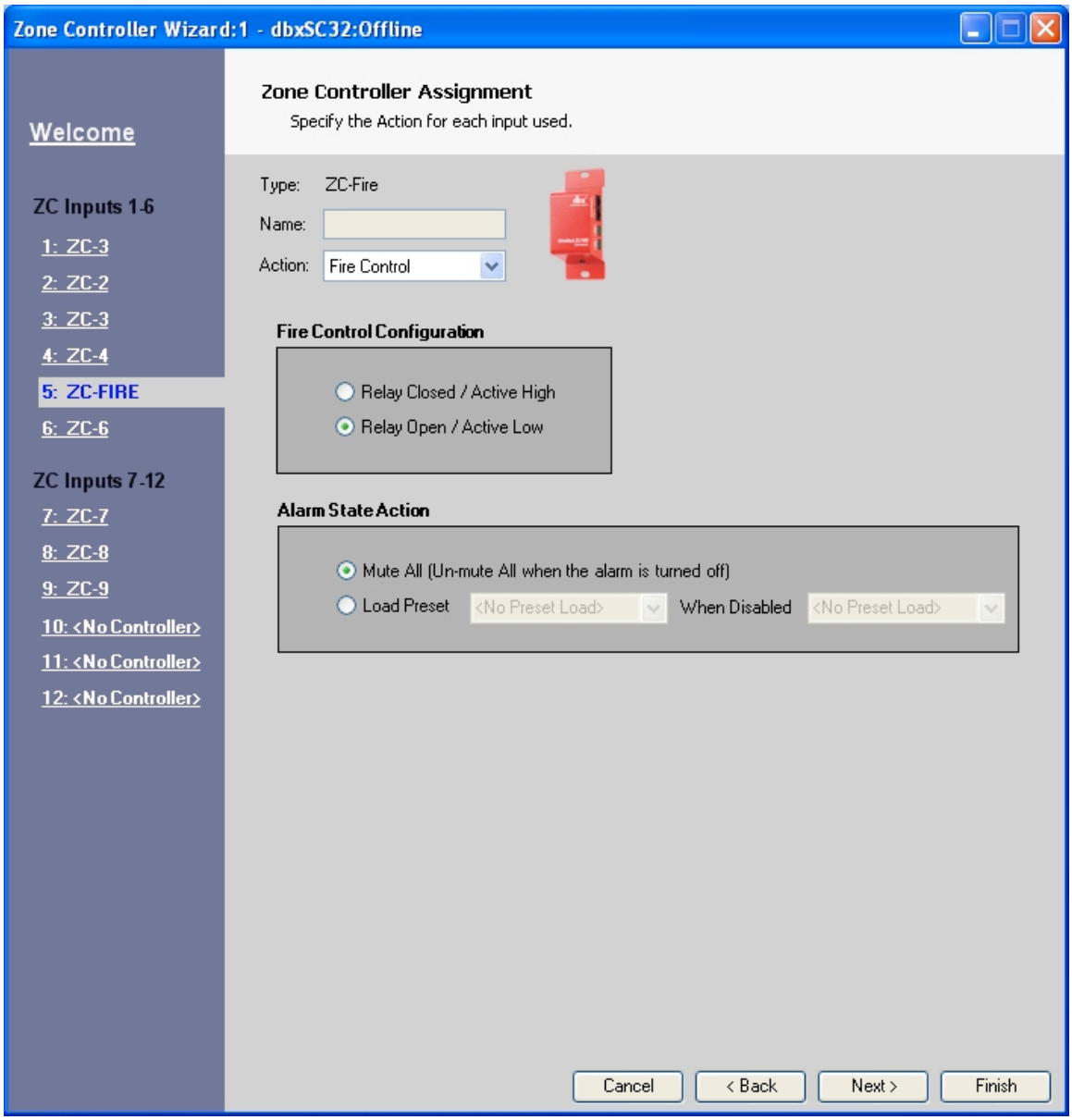
The ZC-FIRE controller is used for either output muting or programmable preset selection. Connection to the fire safety system shall be either through a relay or directly to the control voltage output .

You can see below that a ZC-FIRE has already been configured in the Peripheral Configuration Wizard and is listed as 5: ZC-FIRE below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 5: ZC-FIRE link to the left.

The 5: ZC-FIRE window will appear as seen below.



In the main right portion of the window you will see the following.

13) Type – This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Fire.

14) Action – The Action dropdown is where you will choose the Action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-FIRE will only allow Actions as listed below.

a. Fire Control

15) Fire Control Configuration – This allows you to choose whether the fire system will be considered on and active when the ZC-FIRE state port is high or low.

16) Alarm State Action – This section allows you to decide what the ZC-device will do when the fire system is active. The system will take one of two actions.

a. Mute all outputs when active

b. Load a specific preset when active. When this action is set you must also choose the preset that will be loaded when the fire state has ended.

ZC6 - SC 32 / SC 64

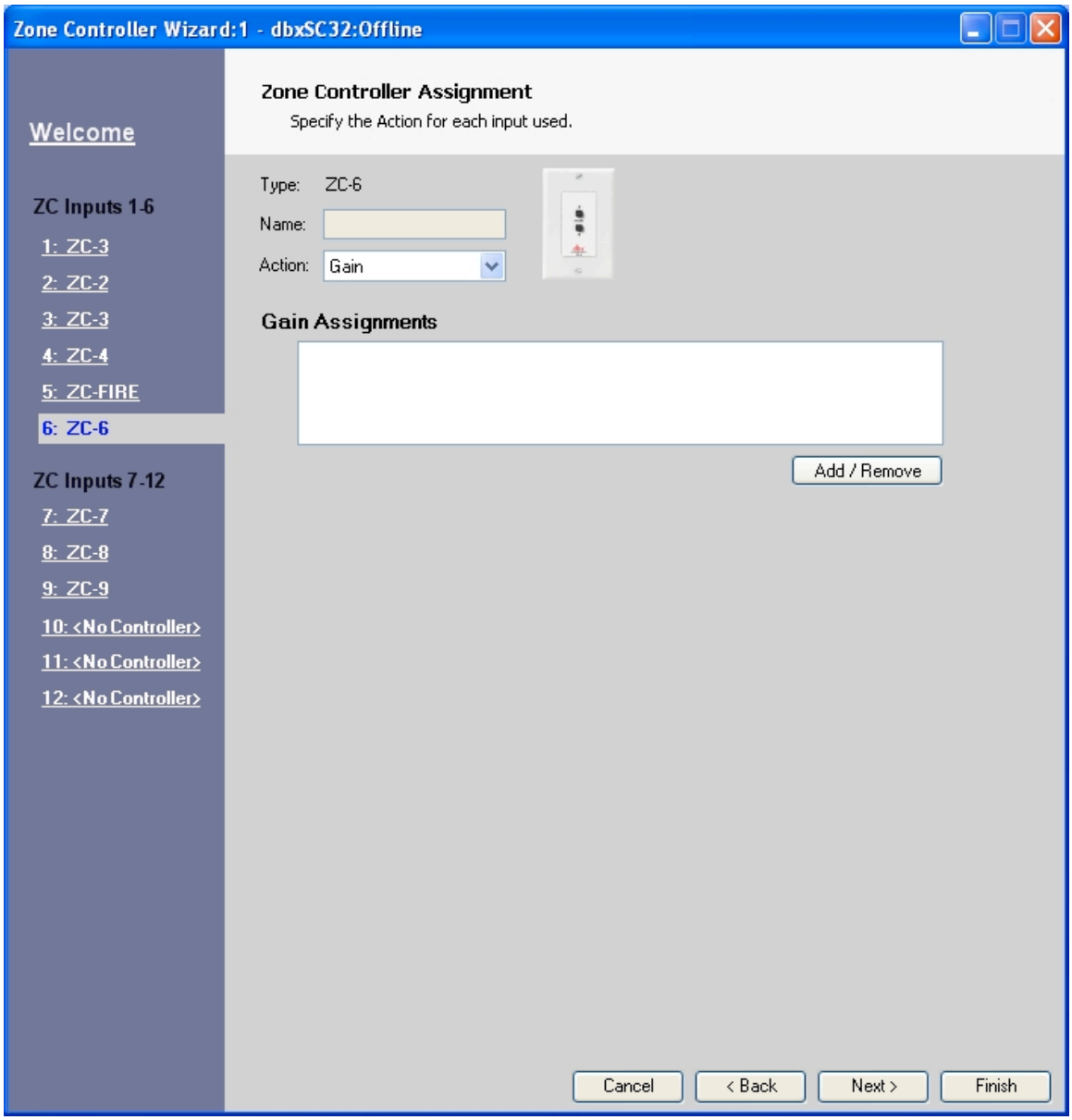
The ZC-6 controller is commonly used for volume control of an input (mic or line) or output zone.

You can see below that a ZC-6 has already been configured in the Peripheral Configuration Wizard and is listed as 6: ZC-6 below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 6: ZC-6 link to the left.

The 6: ZC-6 window will appear as seen below.



In the main right section of the window you will see the following.

17) Type - This is the ZC Controller that is attached to the 6: ZC-6 port.

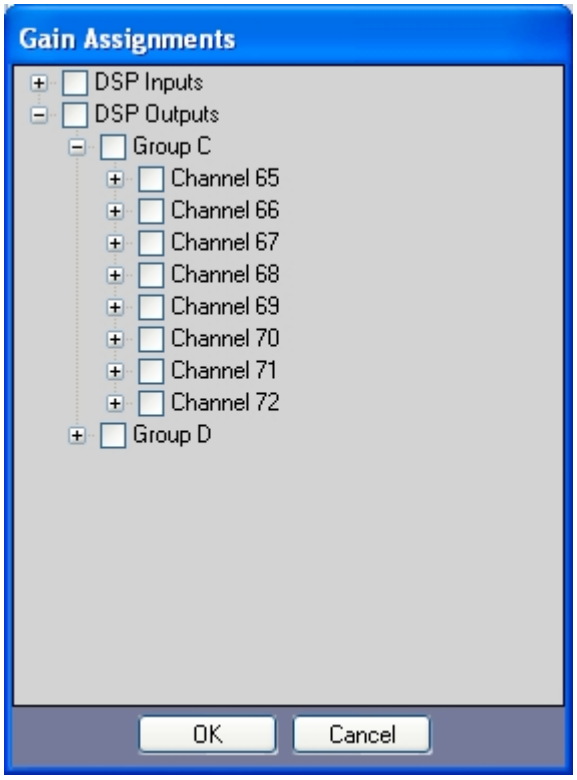
18) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Volume.

19) Action - The Action dropdown is where you will choose the Action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-6 will only allow Actions as listed below.

a. Gain - Adjust level

Below this section is a Gain Assignments section.

When you click on Add/Remove, the following window will appear.



This window allows you to select which DSP Channel Input or Output Gains to control with the ZC-6 volume control. Multiple Gains can be assigned to a single ZC Controller.

ZC7 - SC 32 / SC 64

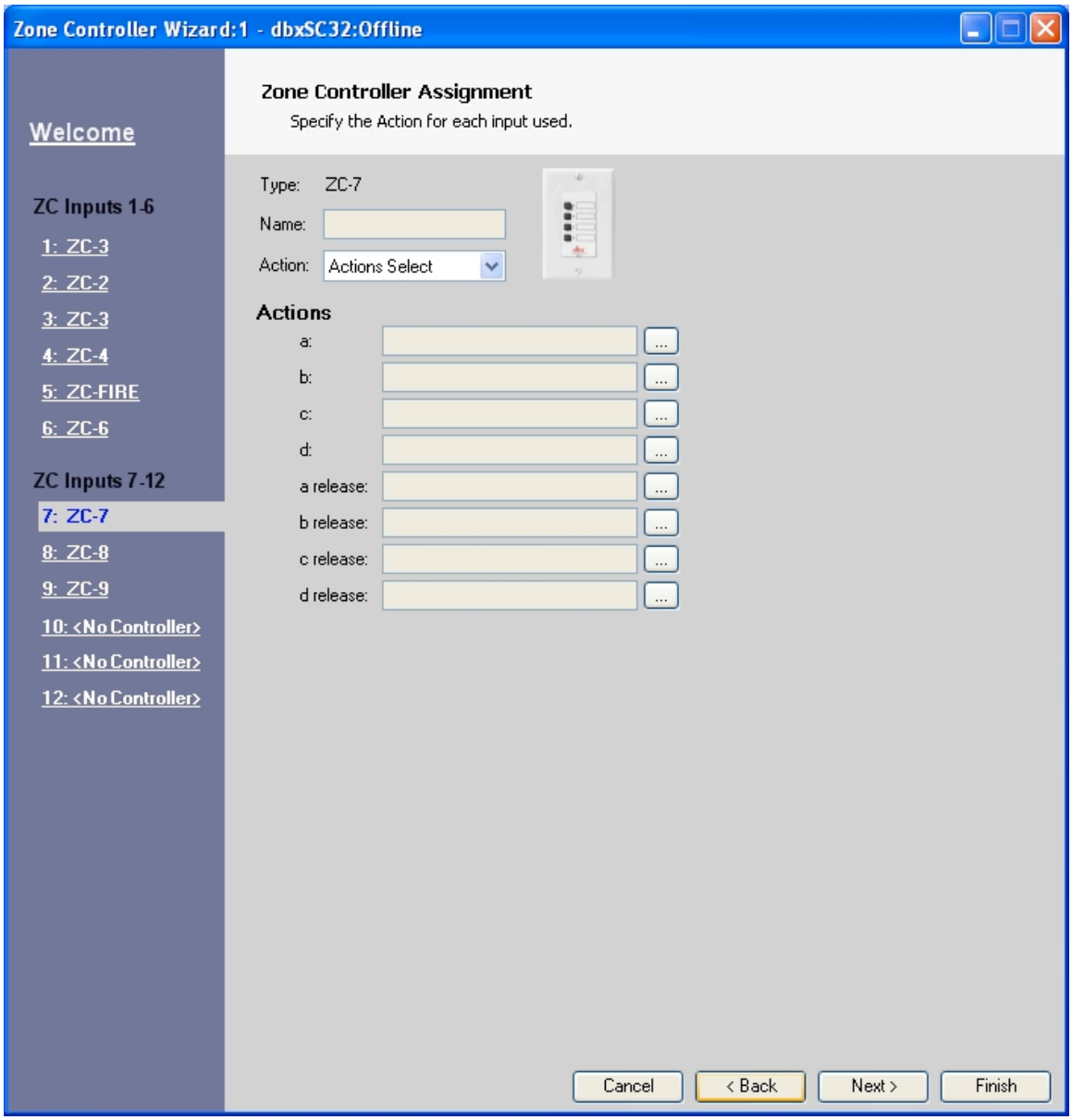
The ZC-7 controller is used for preset recall or page steering control of an input mic or line to an output zone.

You can see below that a ZC-7 has already been configured in the Peripheral Configuration Wizard and is listed as 7: ZC-7 below. If you don't see the Zone Controller you are looking for in the list to the left please see Peripheral Configuration.



Click on the NEXT button or on the 7: ZC-7 link to the left.

The 7: ZC-7 window will appear as seen below.



In the main right section of the window you will see the following.

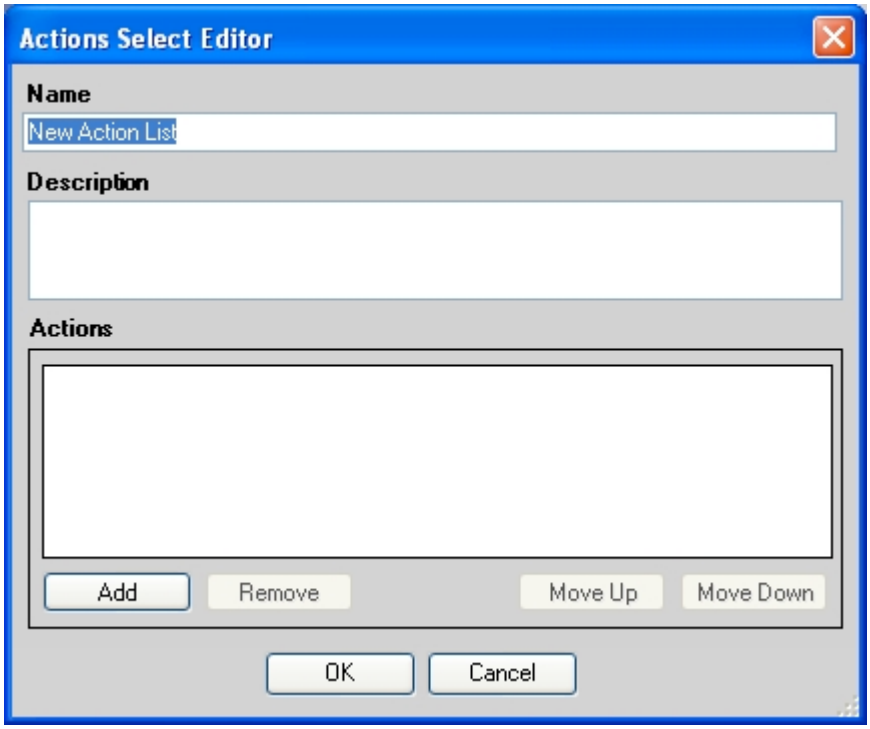
1) Type – This is the ZC Controller that is attached to the 7: ZC-7 port.

2) Name – This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Main Page.

3) Action – The Action dropdown is where you will choose the Action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-7 will only allow Actions as listed below.

a. Actions Select – Selects any actions to be performed. This may be in the form of Device Presets, Panel Presets or Venue Recalls assigned to the four buttons.

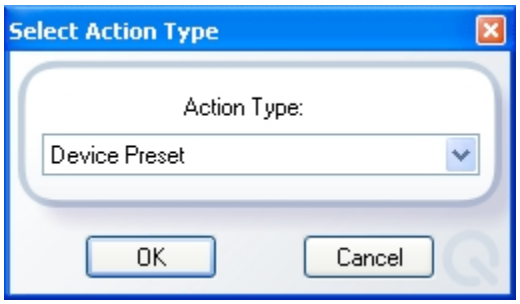
When you choose to add an action with the icon to the right of the a-d buttons, the following will appear.



This window allows you to select an action to be taken by the control when pressed.

Click on Add to select an action.

The following window will appear.



This window allows you to choose a Device Preset, Panel Preset or Venue Recall to occur when selected.

Multiple Actions can be assigned to a single button press or release.

See the following sections for more information

Creating a Panel Preset

Creating a Device Preset

ZC8 - SC 32 / SC 64

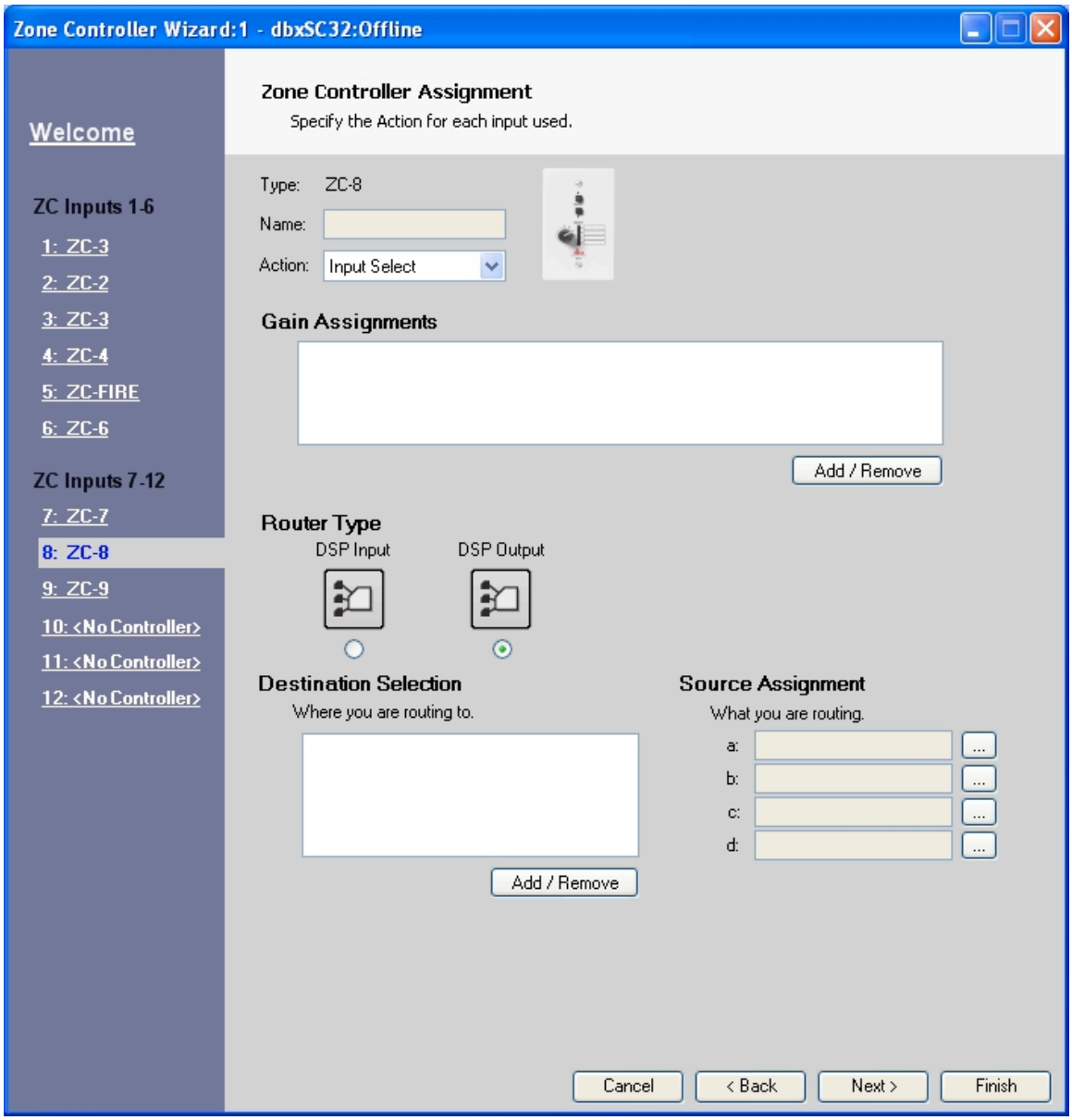
The ZC-8 controller is used to select sources, Device Presets, Panel Presets, and Venue Recalls via a four position rotary control and input, mixer or output zone volume via up/down volume buttons.

You can see below that a ZC-8 has already been configured in the Hardware Peripherals Configuration Wizard and is listed as 8: ZC-8 below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 8: ZC-8 link to the left.

The 8: ZC-8 window will appear as seen below.



In the main right section of the window you will see the following.

4) Type - This is the ZC Controller that is attached to the 8: ZC-8 port.

5) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Source.

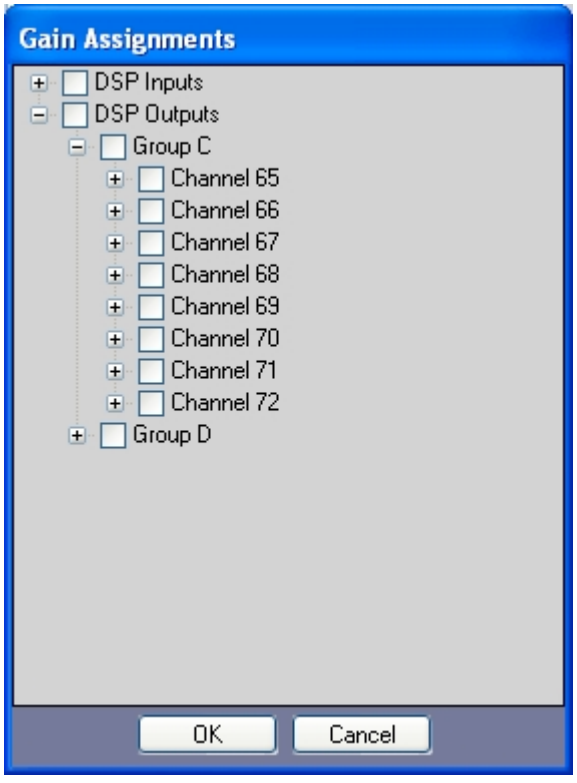
6) Action - The Action dropdown is where you will choose the action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-8 will only allow Actions as listed below.

a. Input Select - Selects the input to be routed to an Input or Output

b. Actions Select - Selects any actions to be performed. This may be in the form of Device Presets, Panel Presets or Venue Recalls assigned to the four positions.

7) Below this section is a Gain Assignments section.

When you click on Add/Remove, the following window will appear.



This window allows you to select which DSP Channel Input or Output Gains to control with the ZC-8 volume control. Multiple Gains can be assigned to a single ZC Controller.

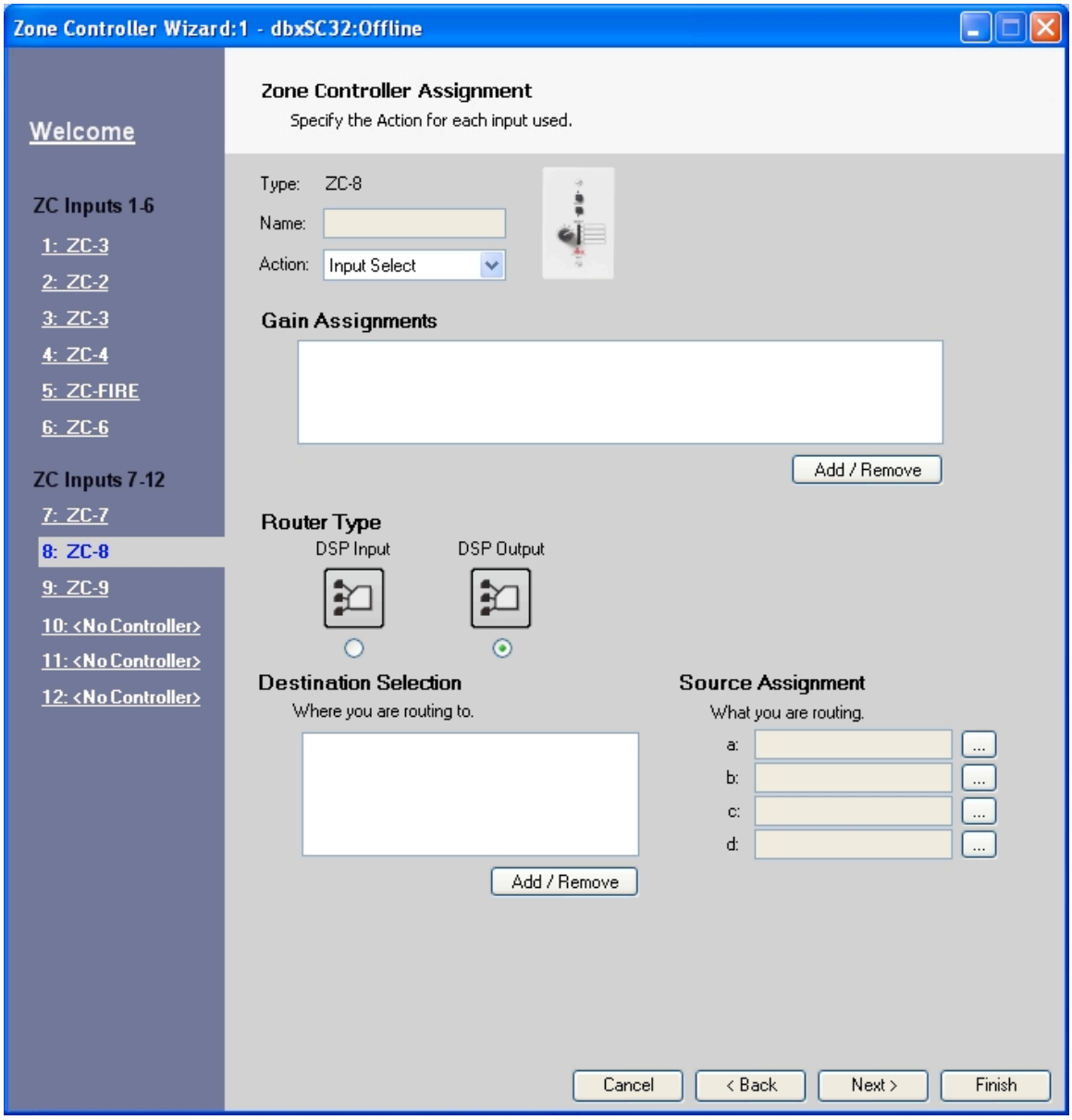
8) Router Type - This control allows you to choose the Input Router section or the Output Router section as the target for the Destination.

9) Destination Selection - This control allows you to choose where you are routing the assigned Source. Multiple destinations can be selected.

10) Source Assignment - This section determines what will be routed to the selected destination(s).

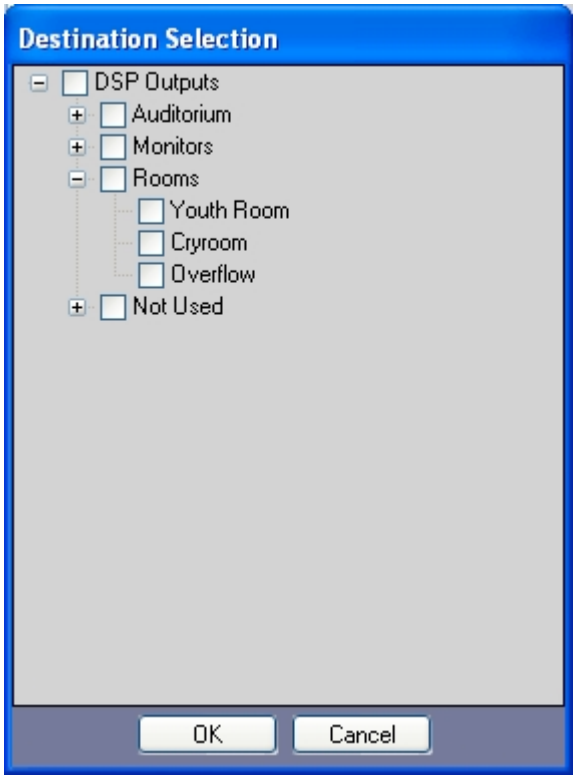
Action: Input Select

When Input Select is listed in the Action dropdown list, the following screen will display.



You will now choose a destination (or multiple destinations) where a Source will be routed.

Clicking on the Add/Remove button will bring up the following screen.



Select the Destinations from the list to which the Source will be routed.

Click on OK to save changes.

From the Source Assign section you will now click on the Source Assign button as seen below.



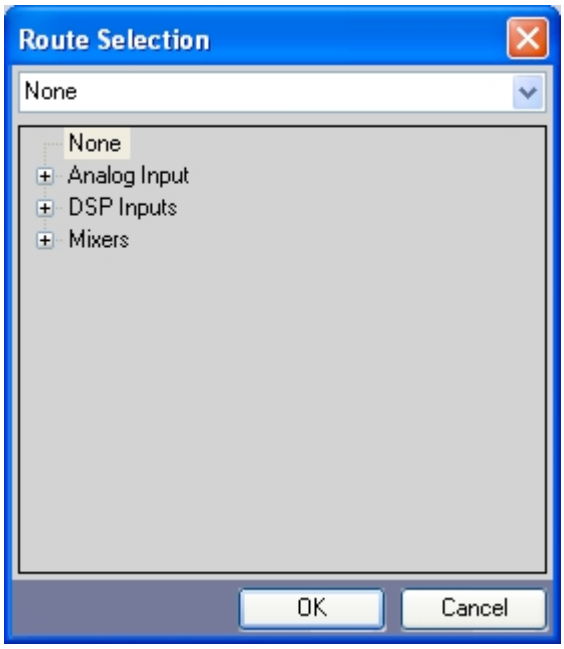
The Route Selection window will open.

If DSP Input is selected for Router Type you will get the following options:

- DSP Inputs

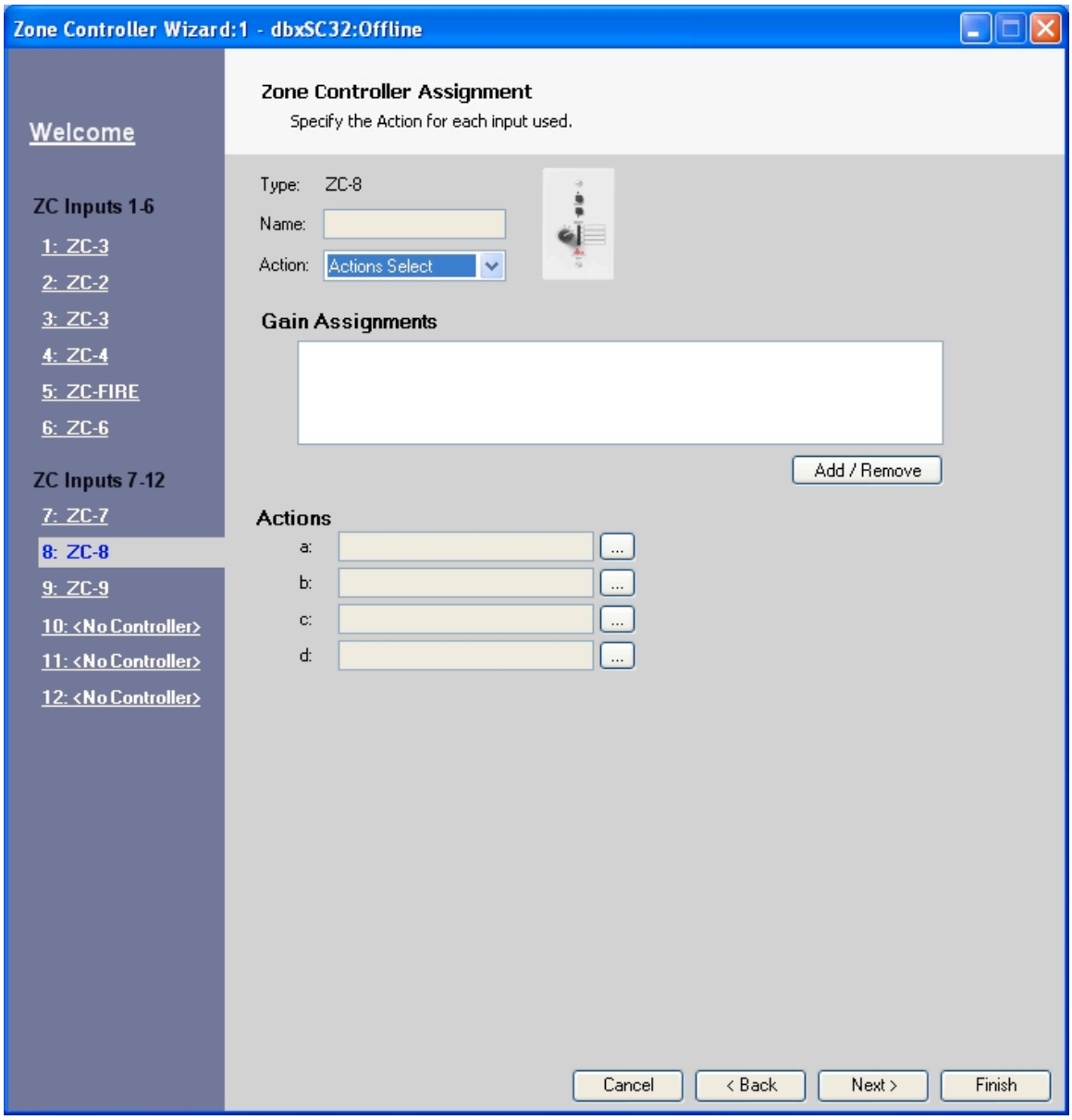
If DSP Output is selected for Router Type you will get the following options:

- Analog Inputs
- DSP Inputs
- Mixers



Action: Actions Select

When Actions Select is listed in the Action Dropdown Menu, the following screen will display.

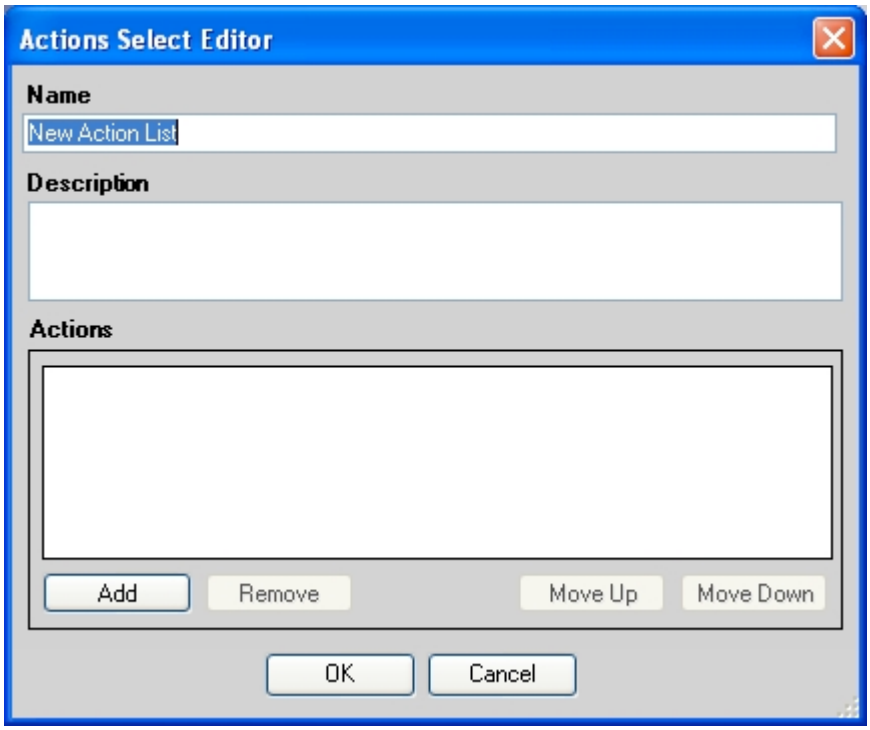


You will now choose an action to be taken when in the ZC-8 is switched through between "a" and "d".

Click on the button to the right of each letter to open the Action Select Editor.



The Action Select Editor opens as seen below.



The Actions Select Editor allows you to name your Action List, provide a Description and Add and Remove Actions.

The Add and Remove buttons allow you to Add actions and Remove them as needed.

The Move Up and Move Down Buttons allow you to reorder the Actions within the list.

Click on the Add Button to create a new action for this ZC-8 in position "A".

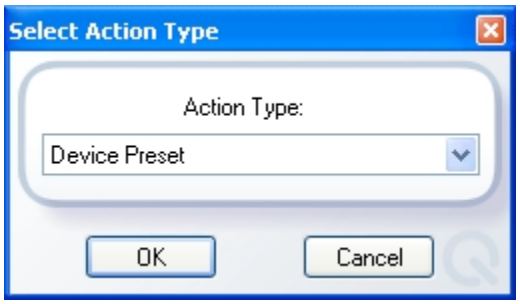
The Select Action Type window will appear.

The dropdown list will allow you to recall one of the following 3 actions.

1) Device Preset

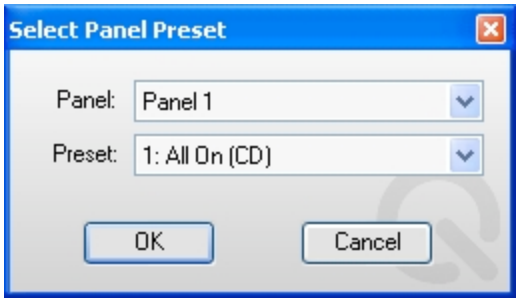
2) Panel Preset

3) Venue Recall



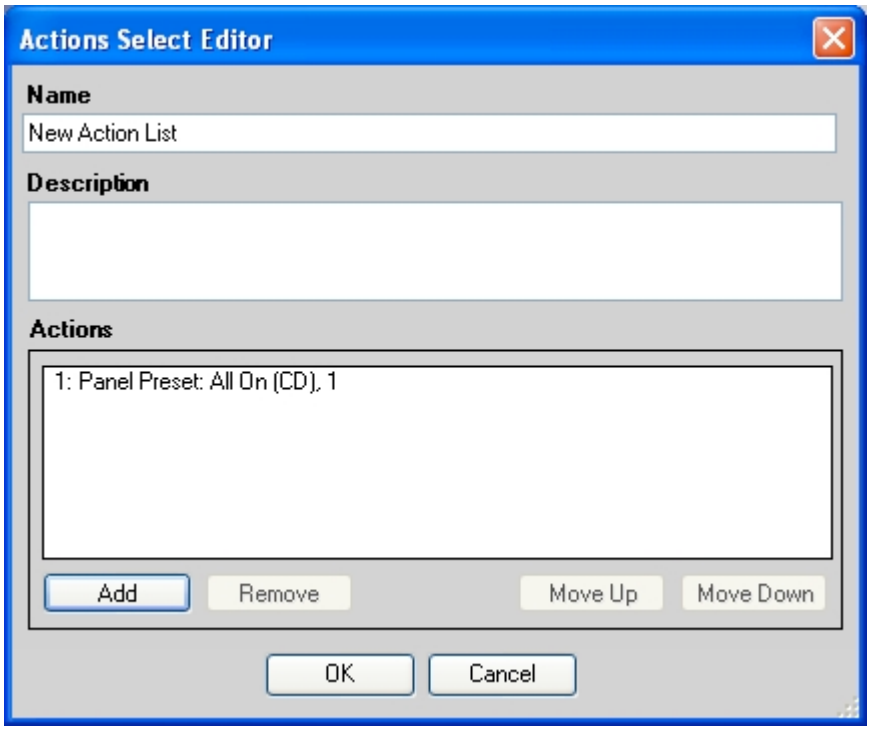
In this case I am going to choose a Panel Preset. Please see Panel Preset to create Panel Presets.

The Select Panel Preset window opens.



You may now select the Panel and the Panel Preset that will be recalled when the ZC-8 is changed between positions "A" through "D".

Once you click on OK, the changes will appear in the Actions Select window.



Click on OK and your Action is set.

Complete the preceding steps for actions in the "B", "C" and "D" positions.

ZC9 - SC 32 / SC 64

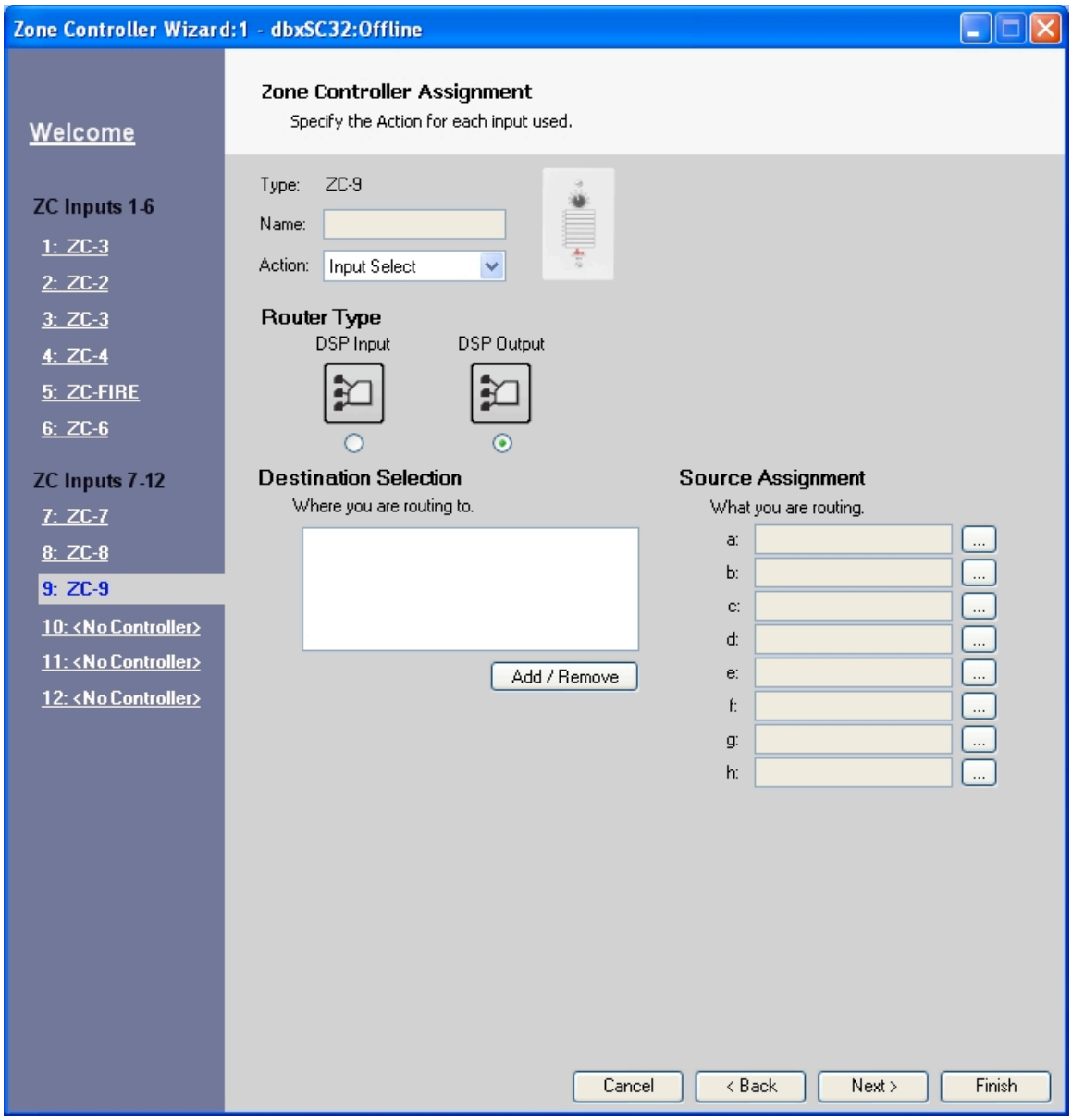
The ZC-9 controller is used to select sources/presets and may be used for page steering.

You can see below that a ZC-9 has already been configured in the Hardware Peripherals Configuration wizard and is listed as 9: ZC-9 below. If you don't see the Zone Controller you are looking for, in the list to the left, please see Peripheral Configuration.



Click on the NEXT button or on the 9: ZC-9 link to the left.

The 9: ZC-9 window will appear as seen below.



In the main right section of the window you will see the following.

11) Type - This is the ZC Controller that is attached to the 9: ZC-9 port.

12) Name - This is where the name of this ZC Controller, specified within the Peripheral Wizard, is displayed. Ex: Room 1 Source.

13) Action - The Action dropdown is where you will choose the Action that the ZC Controller will complete when adjusted. There are several actions that a ZC Controller may take. These are driven by the type of Controller. The ZC-9 will only allow Actions as listed below.

a. Input Select - Selects the input to be routed to an Input or Output

b. Actions Select - Selects any actions to be performed. This may be in the form of Device Presets, Panel Presets or Venue Recalls assigned to the eight positions.

14) Router Type - This control allows you to choose the Input Router section or the Output Router section as the target for the Destination.

15) Destination Selection - This control allows you to choose where you are routing the assigned Source. Multiple destinations can be selected.

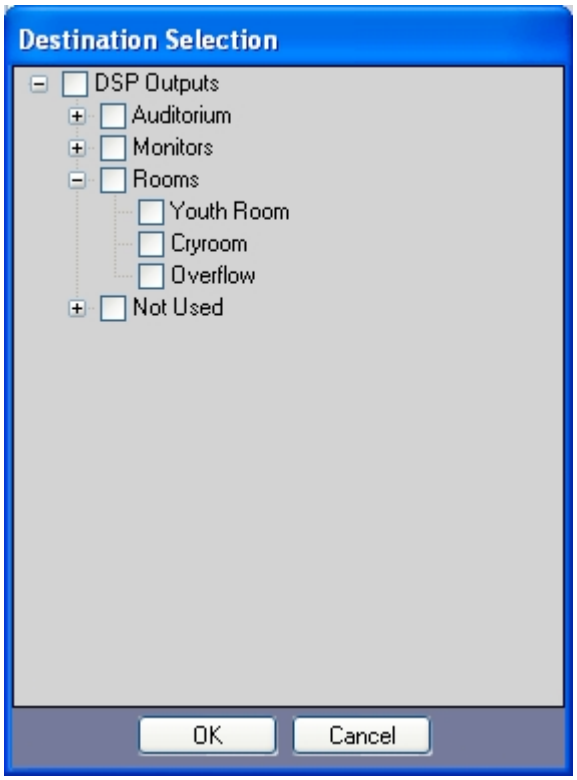
16) Source Assignment - This section determines what will be routed to the selected destination(s).

Action: Input Select

When Input Select is listed in the Action dropdown list, the following screen will display. ZC9 in ZC wizard

You will now choose a destination (or multiple destinations) where a Source will be routed.

Clicking on the Add/Remove button will bring up the following screen.



Select the Destinations from the list to which the Source will be routed.

Click on OK to save changes.

From the Source Assign section you will now click on the Source Assign Button as seen below.



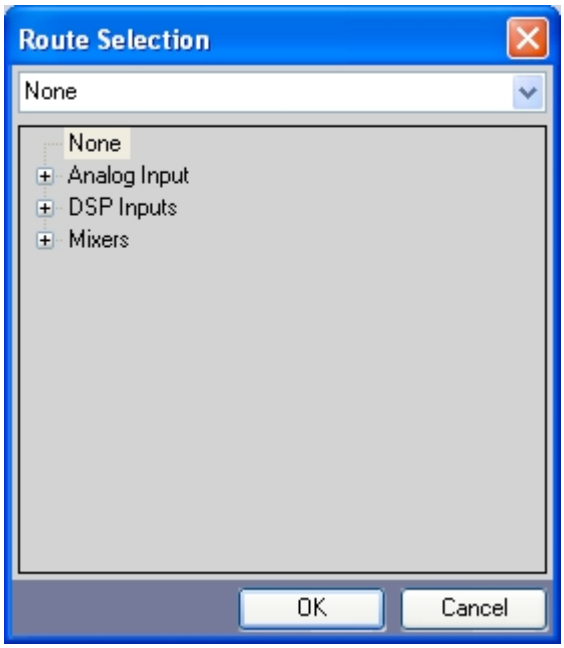
The Route Selection window will open.

If DSP Input is selected for Router Type you will get the following options:

- DSP Inputs

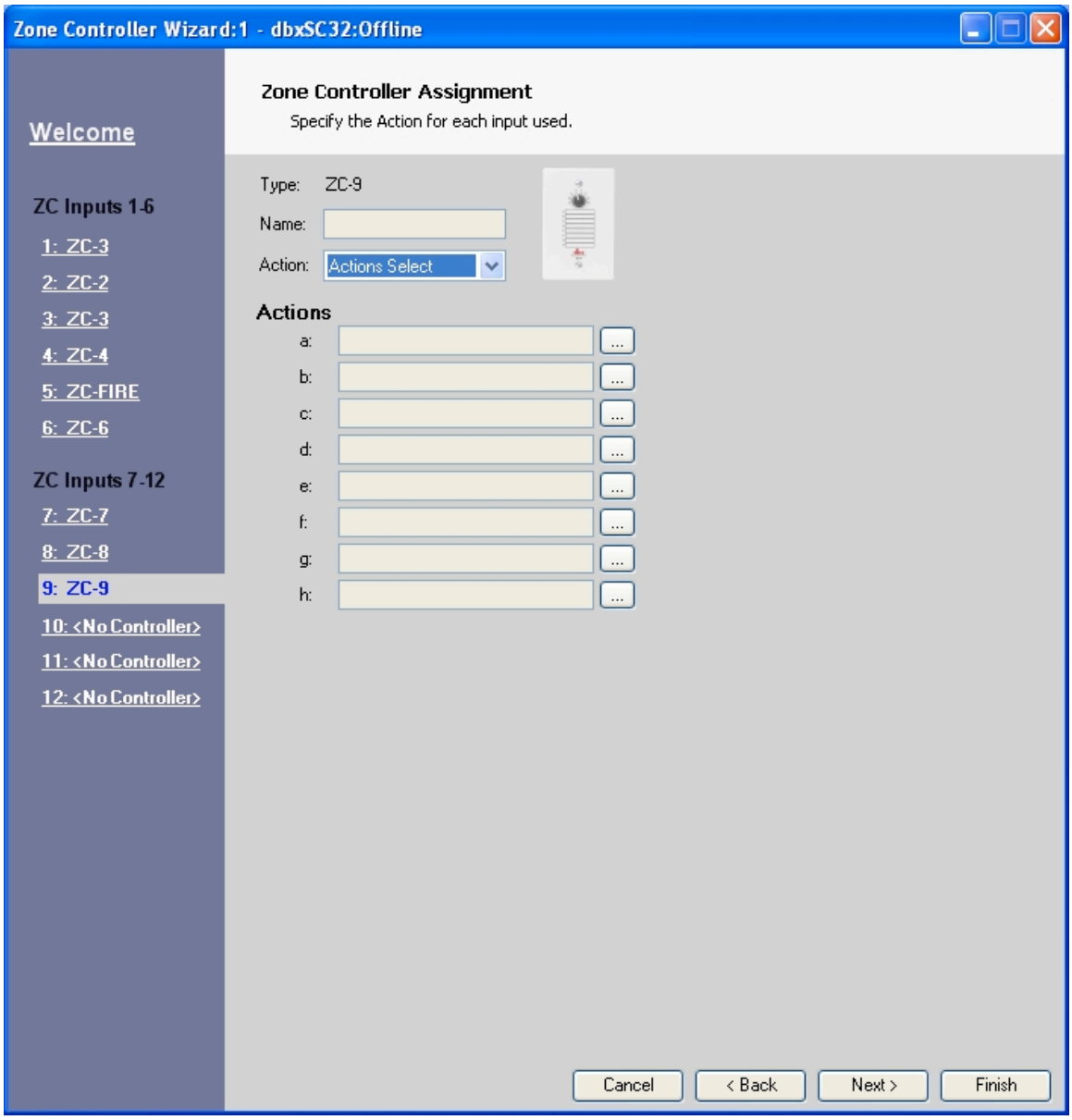
If DSP Output is selected for Router Type you will get the following options:

- Analog Inputs
- DSP Inputs
- Mixers



Action: Actions Select

When Actions Select is listed in the Action Dropdown Menu, the following screen will display.

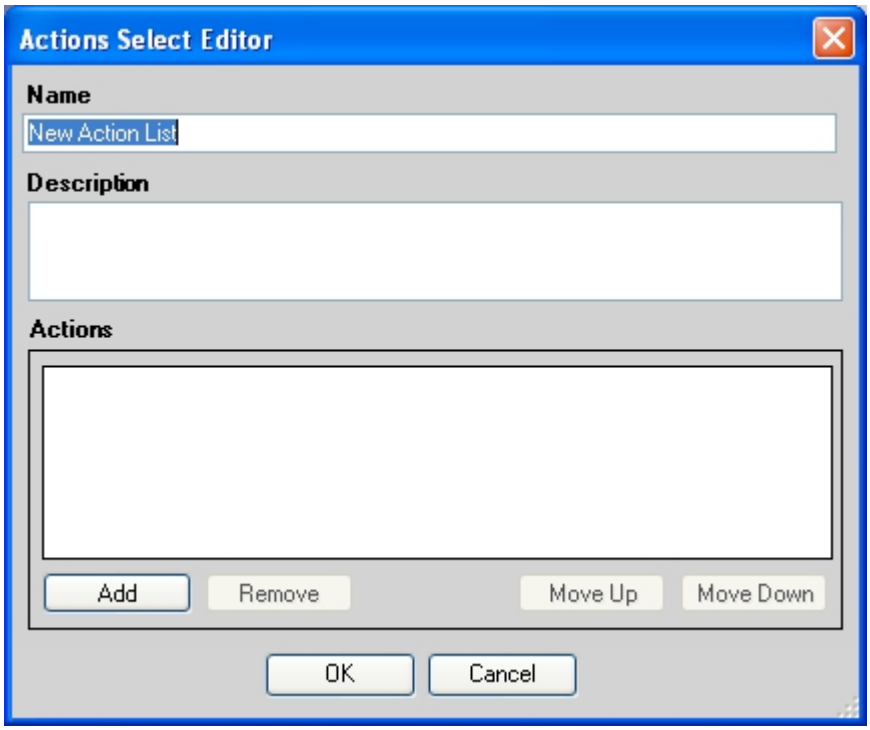


You will now choose an Action to be taken when in the ZC-9 is switched through between "a" and "h".

Click on the button to the right of each letter to open the Actions Select Editor.



The Actions Select Editor opens as seen below.



The Actions Select Editor allows you to name your Action List, provide a Description and Add and Remove Actions.

The Add and Remove Buttons allow you to Add Actions and Remove them as needed.

The Move Up and Move Down Buttons allow you to reorder the Actions within the list.

Click on the Add Button to create a new action for this ZC-9 in position "A".

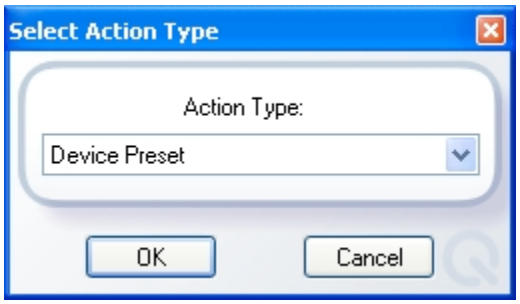
The Select Action Type window will appear.

The dropdown list will allow you to recall one of the following 3 actions.

4) Device Preset

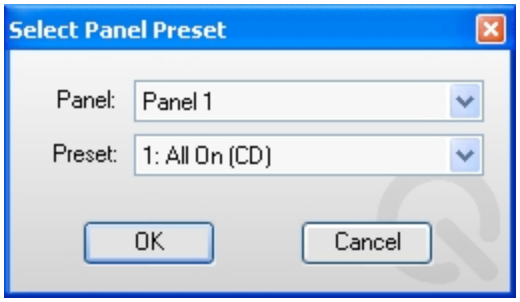
5) Panel Preset

6) Venue Recall



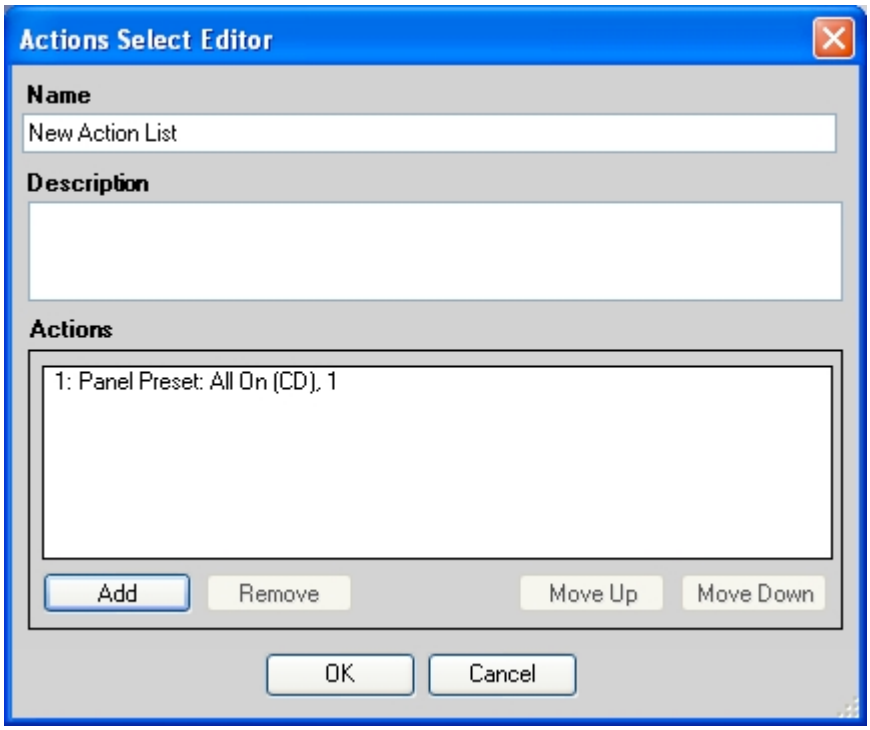
In this case I am going to choose a Panel Preset. Please see Panel Preset to create Panel Presets.

The Select Panel Preset window opens.



You may now select the Panel and the Panel Preset that will be recalled when the ZC-9 is changed between positions "A" through "H".

Once you click on OK, the changes will appear in the Actions Select window.



Click on OK and your action is set.

Complete the preceding steps for actions in the remaining positions.

ZC-BOB - SC 32 / SC 64

The ZC-BOB provides up to 6 RJ-45 input jacks for "Home Run" or parallel wiring configurations. This remote device has one output RJ-45 jack for connection to the dbx device. The ZC-BOB is designed to allow longer cable lengths to multiple controllers.

The ZC-BOB is non-programmable and non-powered.

A single connection from a ZC to a dbx device allows up to a 1000 foot cable run to that ZC. ZC controllers may be linked from one to the next (or daisy chained in a single run) but this comes at a price. As you daisy chain the controllers the overall length of the run must decrease.

The ZC-BOB resolves this issue. With the ZC-BOB attached to a dbx device with 25 feet or less of cable between the ZC-BOB and that device, you may get up to 1000 foot "Home Runs" to each of the 6 ZC controllers attached.



GPIO Wizard - SC 32 / SC 64

The SC 32 and SC 64 are preconfigured architecture DSP digital matrix processors.

The configuration of General Purpose Input/Output (GPIO), namely Control Inputs, Logic Outputs and The Relay are made easy through the use of the GPIO Wizard.

The Wizards represent an easy way to set up your SC 32 and SC 64. These Wizards are designed to guide you step-by-step through the selection and options for each GPIO. Simply fill in the blanks provided in this step-by-step process and you have control.

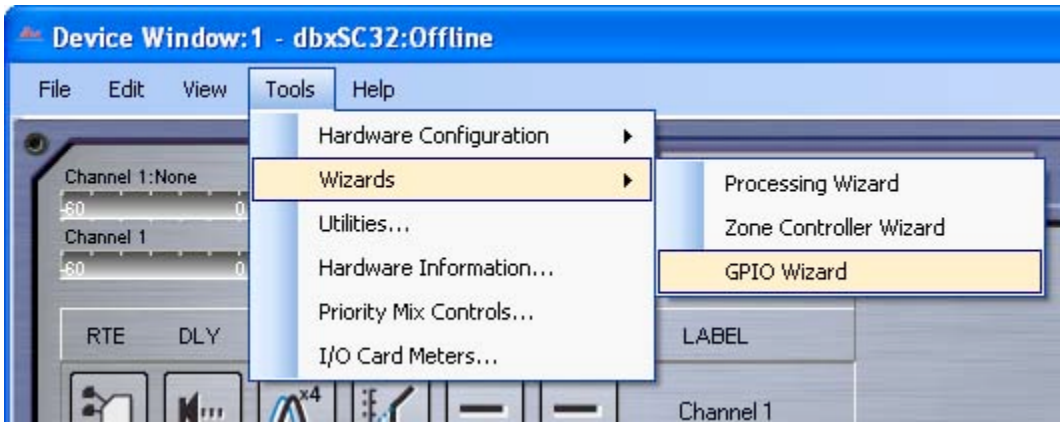
When designing a system with an SC 32 or SC 64 in either online or offline mode, you will need to complete the following steps to properly configure your install.

To access the GPIO Wizard, click on the Tools Menu as seen below.

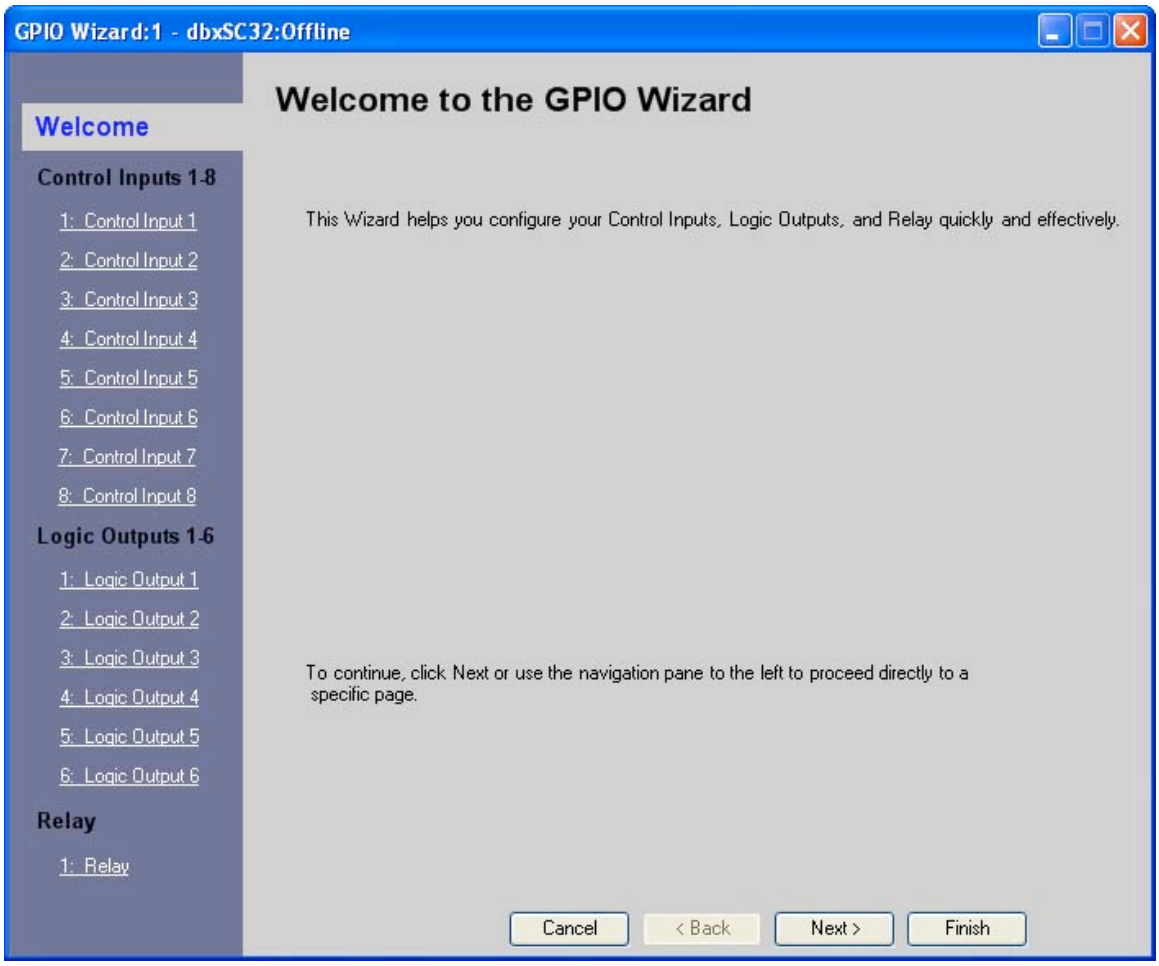
Move your mouse over the Wizards option.

A fly out menu will appear.

Click on the GPIO Wizard option.



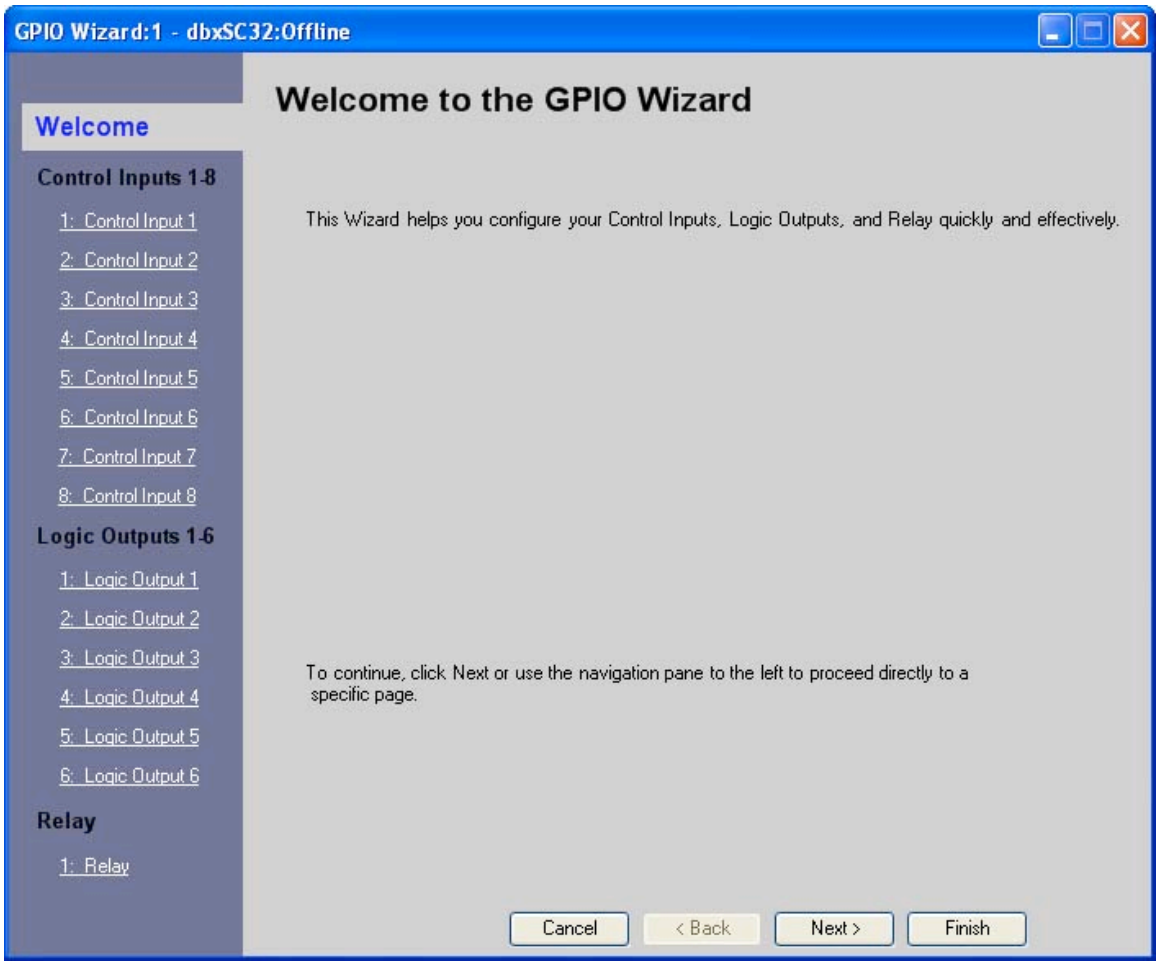
The Welcome Screen for the Wizard will appear.



Navigating the GPIO Wizard

Navigating the GPIO Wizard is made easy through the Quick Links to the left side of the window or through the NEXT and BACK buttons located at the bottom of the Wizard Screen.

Names of Control Inputs, Logic Outputs and the Relay configured in the Peripheral Configuration Wizard will be shown on the left side of the window.



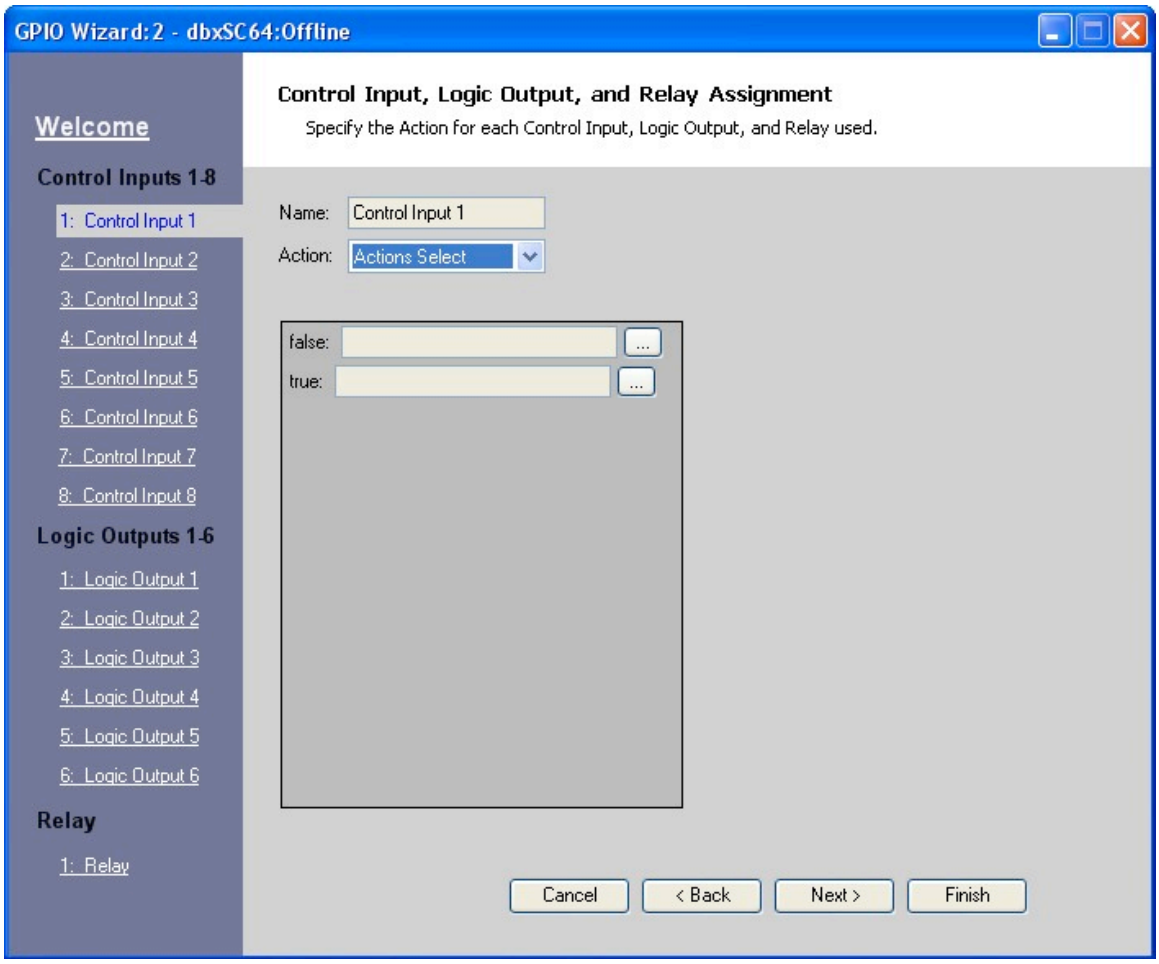
You may click on cancel at any time to exit out of the Wizard without saving any of the changes.

When you have completed any or all sections of this Wizard and wish to implement the changes made simply press the FINISH button located at the bottom right of the GPIO Wizard window. This will save your design to either an off-line version of your device or load it straight into an on-line device.

Click on the NEXT button or on the first Control Input link to the left. You may have already inserted Control Input names in the Peripheral Configuration Wizard.

(See Peripheral Configuration)

The Control Input 1 window will appear as seen below.



In the main right section of the window you will see the following.

Name - This is where the name of this Control Input, specified within the Peripheral Wizard, is displayed.

Action - The Action dropdown is where you will choose the Action that the Control Input will complete when adjusted. There are several actions that a Control Input may take. The Control Input will only allow Actions as listed below.

Actions Select - Selects any actions to be performed. This may be in the form of Device Presets, Panel Presets or Venue Recalls assigned to the Control Input.

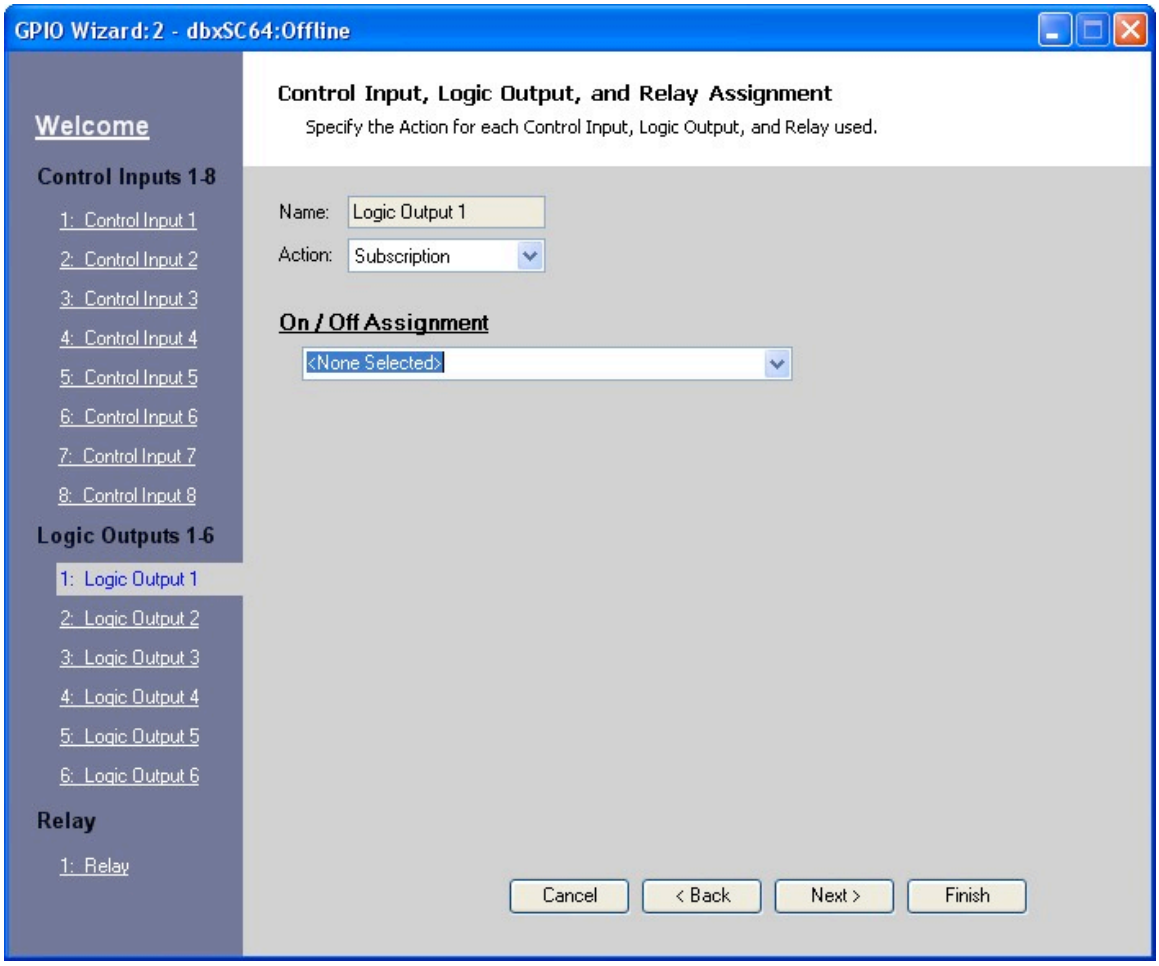
Subscription - Selects 'on/off' parameters to be controlled by the Control Input.

Click on the NEXT button or on each subsequent Control Input link to the left to configure the remaining Control Inputs.

Click on the NEXT button or on the first Logic Output link to the left. You may have already inserted Logic Output names in the Peripheral Configuration Wizard.

(See Peripheral Configuration)

The Control Output 1 window will appear as seen below.



In the main right section of the window you will see the following.

Name - This is where the name of this Logic Output, specified within the Peripheral Wizard, is displayed.

Action - The Action dropdown is where you will choose the what controls the Logic Output. The Logic Output will only allow Actions as listed below.

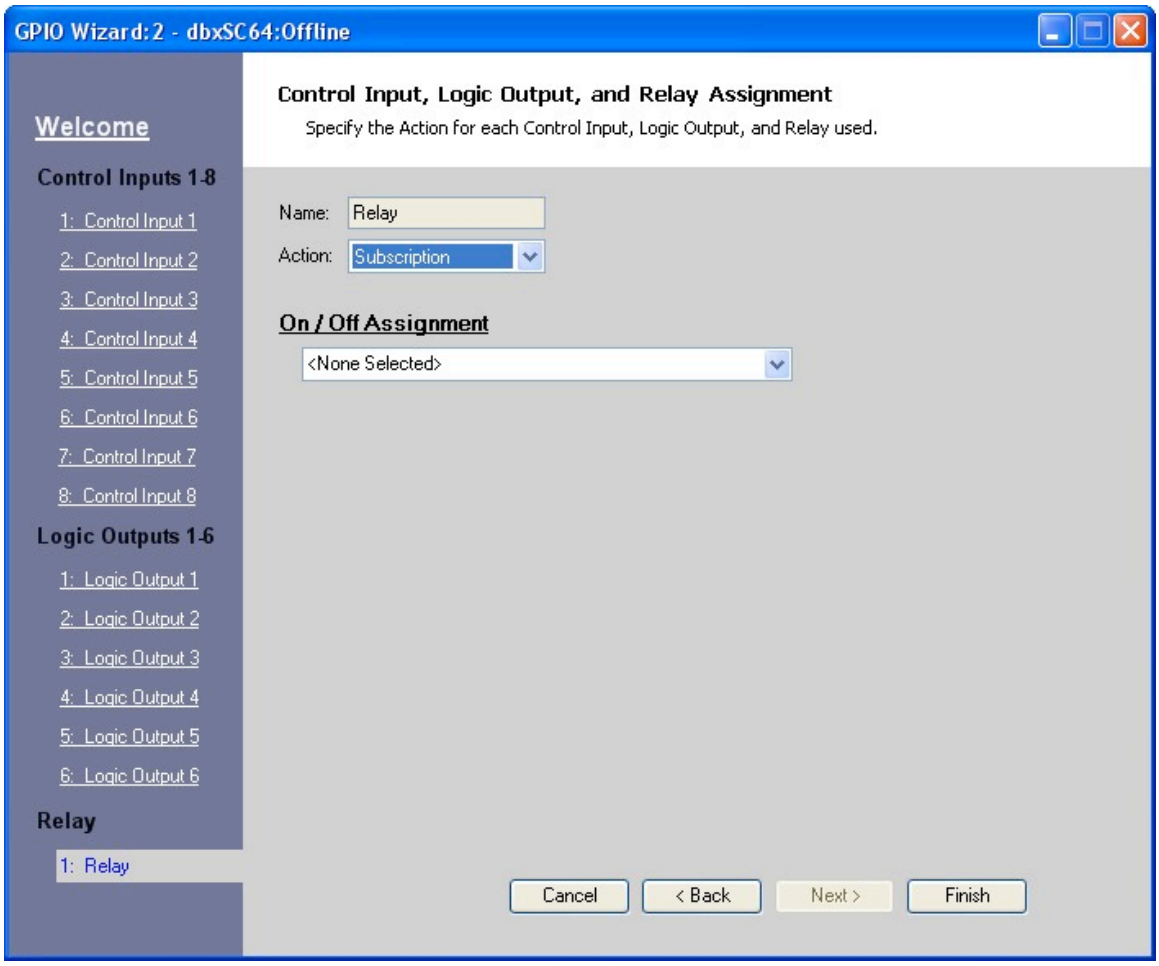
Subscription - Selects 'on/off' parameters to control the Logic Output.

Click on the NEXT button or on each subsequent Logic Output link to the left to configure the remaining Logic Outputs.

Click on the NEXT button or on the Relay link to the left. You may have already inserted a Relay name in the Peripheral Configuration Wizard.

(See Peripheral Configuration)

The Relay window will appear as seen below.



In the main right section of the window you will see the following.

Name - This is where the name of this Relay, specified within the Peripheral Wizard, is displayed.

Action - The Action dropdown is where you will choose what controls the Relay. The Relay will only allow Actions as listed below.

Subscription - Selects 'on/off' parameters to control the Relay.

Click on the FINISH button to implement the changes.

Utilities - SC 32 / SC 64

The Utilities section of the SC 32 and SC 64 allows you to adjust, set and monitor a number of items.

When the SC 32 and SC 64 are discovered by System Architect, they will automatically detect certain items within the device that will be displayed in Utilities.

To access Utilities simply click on the Tools Menu as seen below.

Click on the Utilities option.



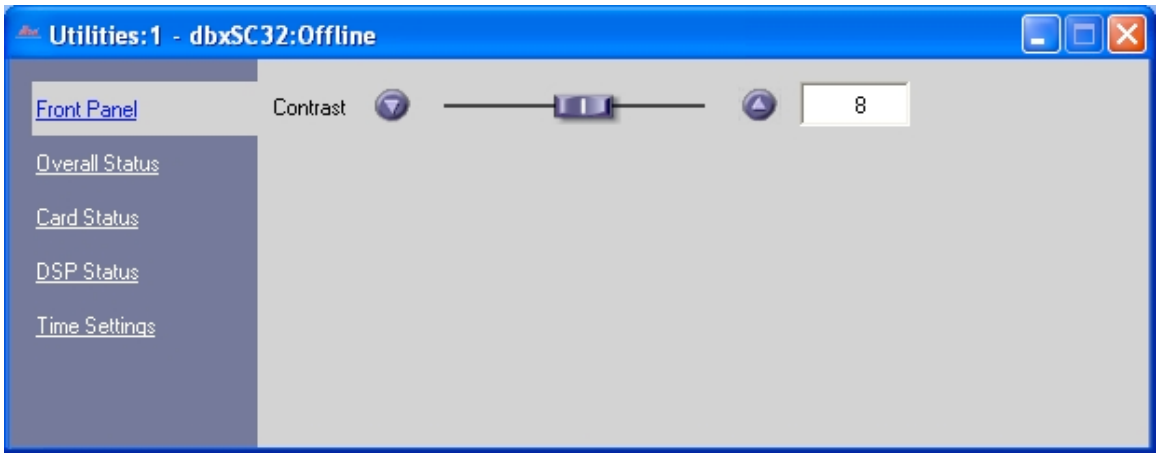
The Utilities window will appear.

This window contains links on the left side of the page for the Front Panel, Overall Status, Card Status, DSP Status and Time Settings as seen below.

Front Panel

Click on the Front Panel link. (opens as default)

The Front Panel section of Utilities allows you to change the contrast of the front panel of the SC device.



Overall Status

Click on the Overall Status link.

The Overall Status section allows you to see the current status of the following.

1) Audio Router

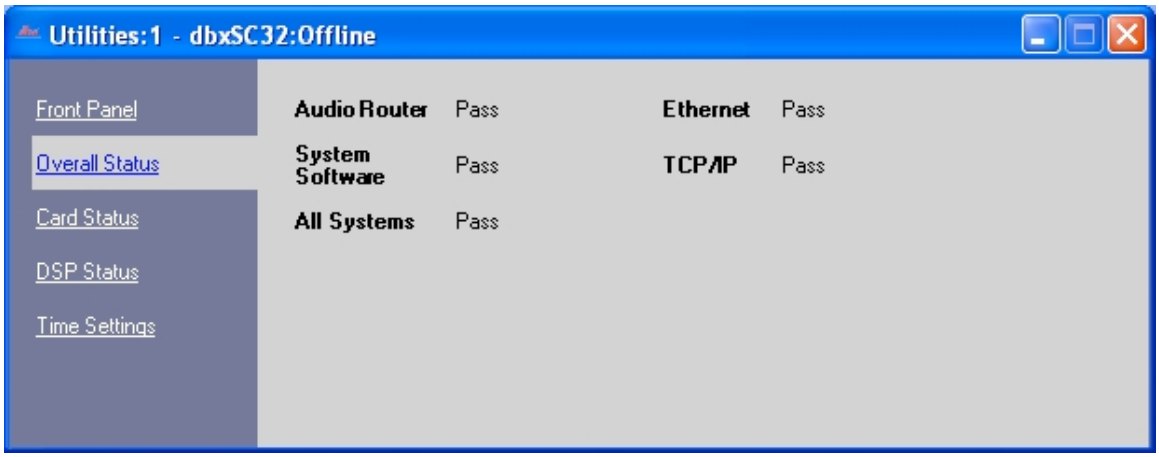
2) System Software

3) Ethernet

4) TCP/IP

5) All Systems

These will all show a pass (default when offline) or fail status.



Card Status

Click on the Card Status link.

The Card Status section allows you to see the current status of the following.

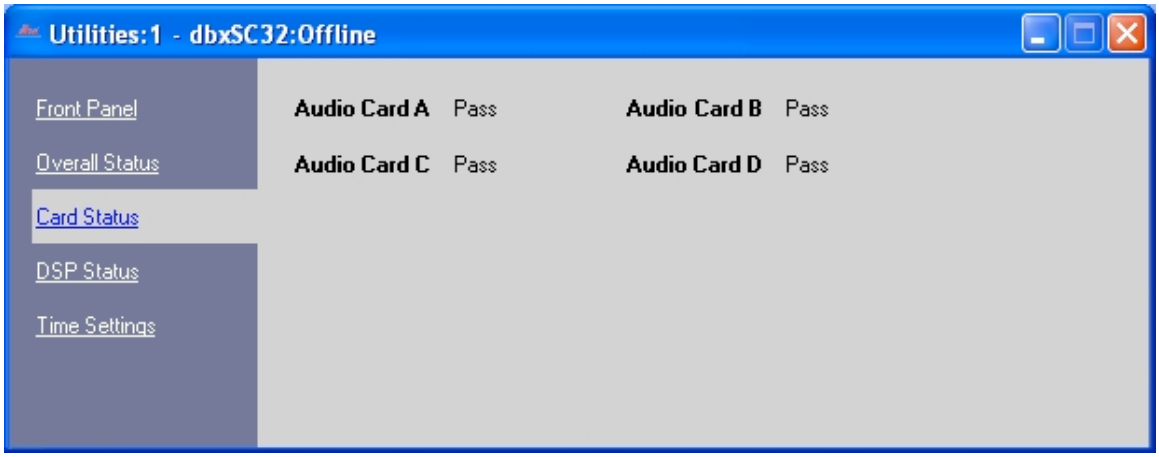
1) Audio Card A

2) Audio Card B

3) Audio Card C

4) Audio Card D

These will all show a pass (default when offline) or fail status. The Card Status section will only report status of cards that are loaded in online devices.



DSP Status

Click on the DSP Status link.

The DSP Status section allows you to see the current status of the following.

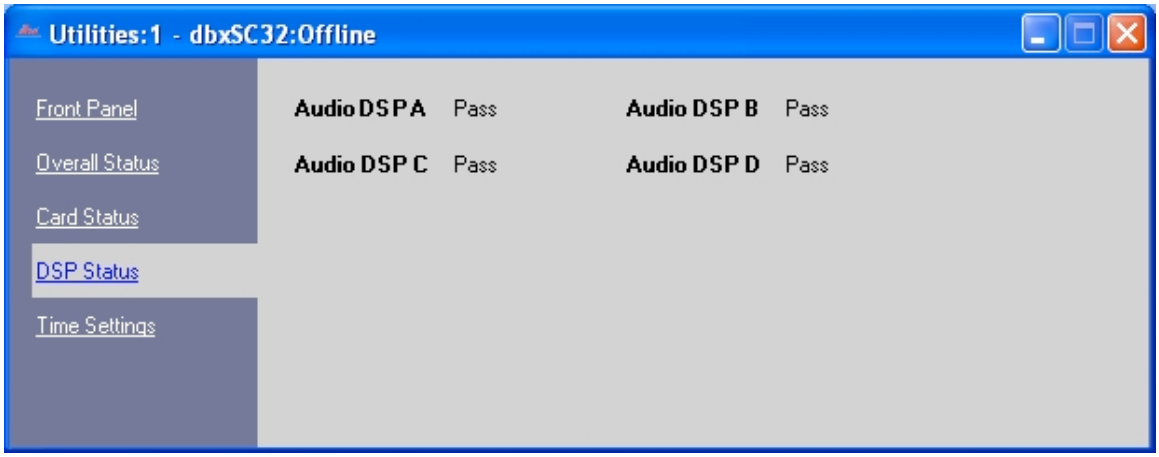
1) Audio DSP A

2) Audio DSP B

3) Audio DSP C

4) Audio DSP D

These will all show a pass (default when offline) or fail status. The DSP Status section will only report status of DSP per device selected. A through D for the SC 32 and A through H for the SC 64.



Time Settings

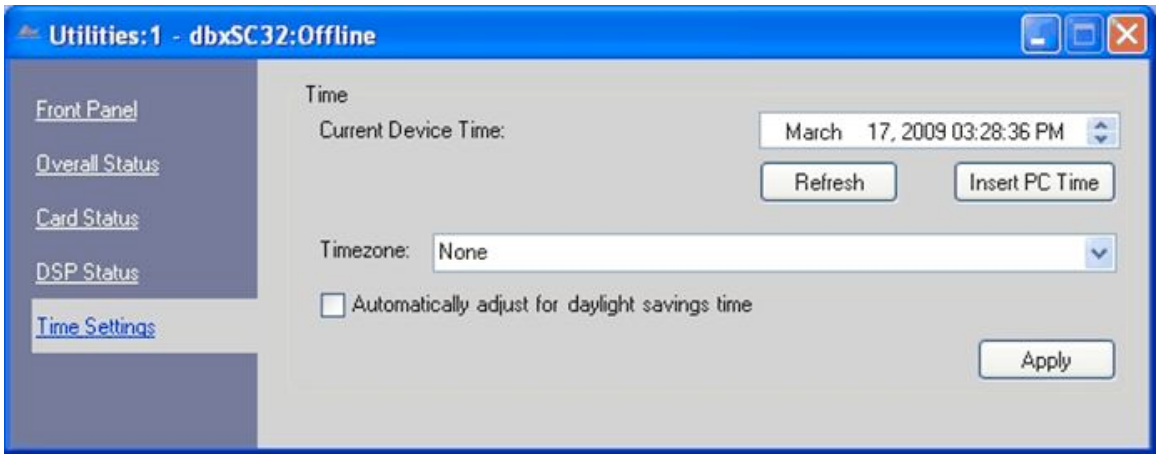
Click on the Time Settings link.

The Time Settings section allows you to see and change the following.

1) Current time and date. This is set through your computer by clicking on the Insert PC Time button or manually with the up and down arrows next to the time and date display.

2) Timezone. Clicking on the Timezone allows you to choose the country or part of the world that the install exists in.

3) Automatically adjust for Daylight Savings Time. Choosing this option will allow the SC device to change the current time and date based on the location in the world.



Input Card Setup - SC 32 / SC 64

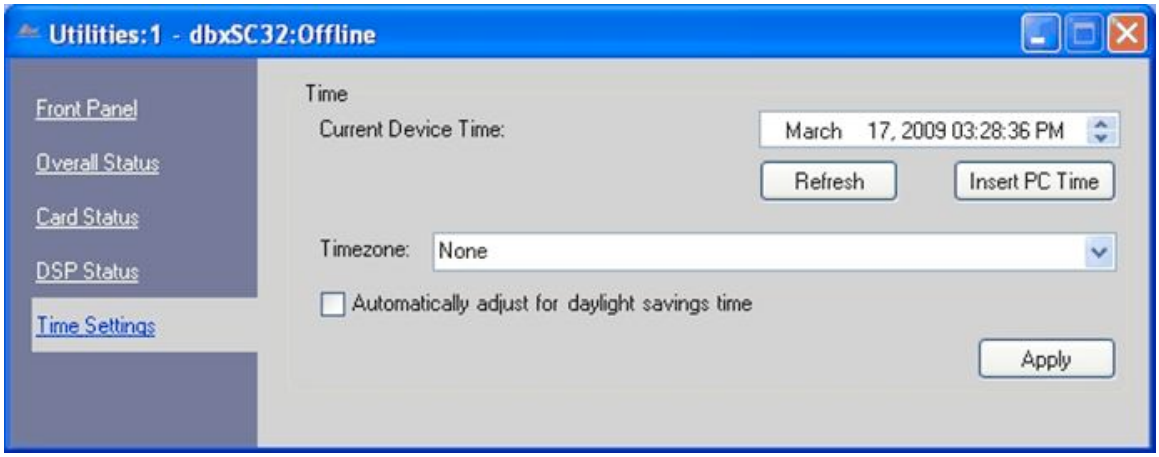
The Input Card Setup section of the Tools Menu for the SC 32 and SC 64 allows you to adjust Analog Input Gain, Input High Pass frequency, Signal Generator level and Sine Wave Generator Frequency.

When the SC 32 and SC 64 are discovered by System Architect, they will automatically detect certain items within the device that will be displayed in Input Card Setup. Only cards that are installed will be displayed in this section.

To access Input Card Setup simply click on the Tools Menu as seen below.

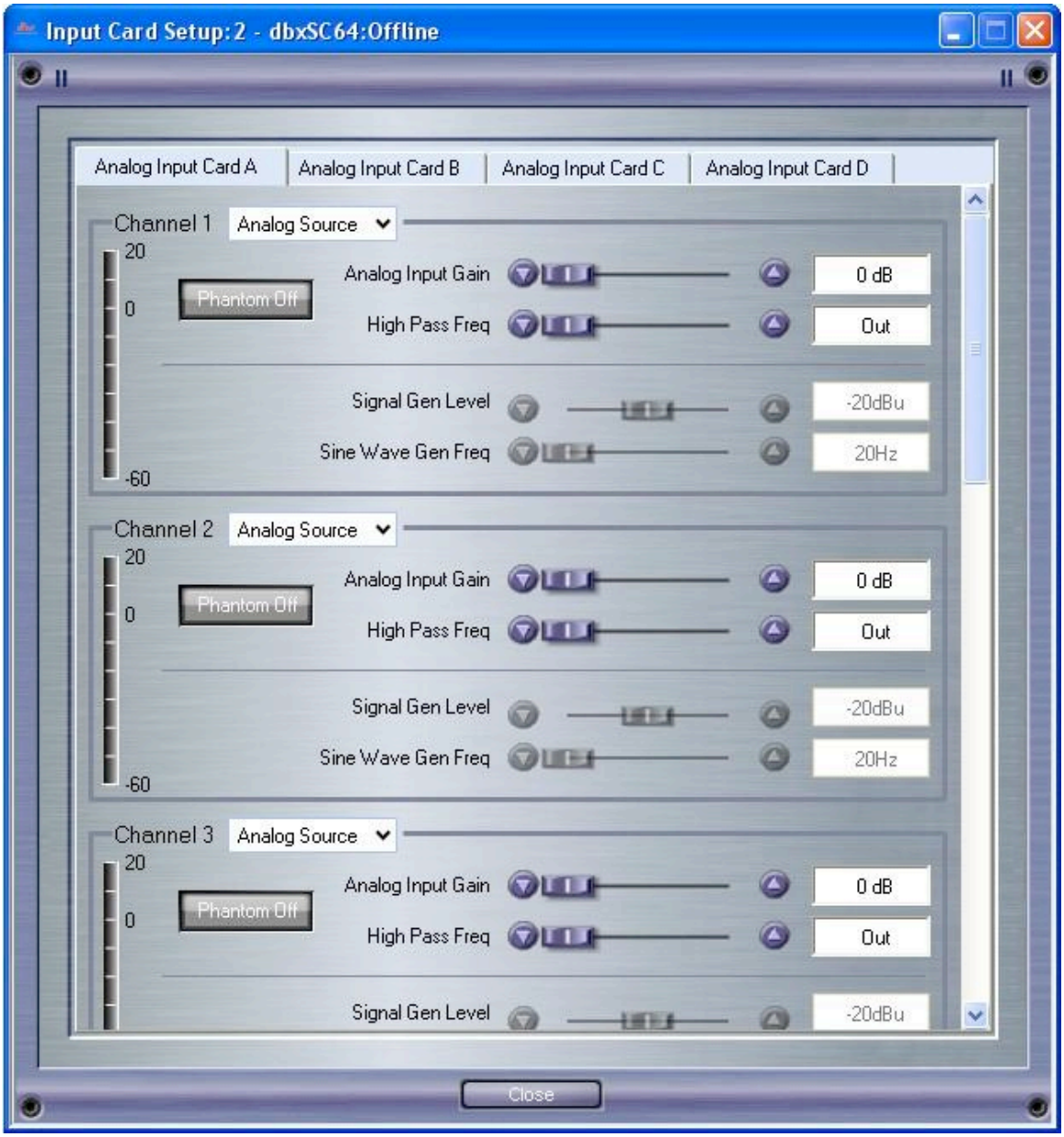


Click on the Input Card Setup option.



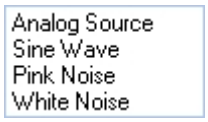
The Input Card Setup window will appear.

This window contains a tab at the top of the page for each of the Analog Input cards loaded into the device.



Input Channel Source Selection

Each channel contains a dropdown menu that selects the Analog Source or a Signal Generator consisting of a SineWave, Pink Noise or White Noise generator. Each selection will enable and disable the appropriate controls as described below.



Controls available when Analog Source is selected..

1) Analog Input Gain - this is the level of gain imposed on the input signal

2) High Pass Frequency - this is the lowest frequency that will pass forward to other DSP object from the input forward.

3) Phantom Power - this determines whether the input will have 48V power supplied or not.

You will be able to see the input level meter at all times and in all modes.

Controls available when Sine Wave is selected.

1) Signal Generator Level - this is the level of gain for the Sine Wave

2) Sine Wave Generator Frequency - this is the frequency of the sine wave

Controls available when Pink Noise or White Noise is selected.

1) Signal Generator Level - this is the level of gain for the Pink or White Noise Generator

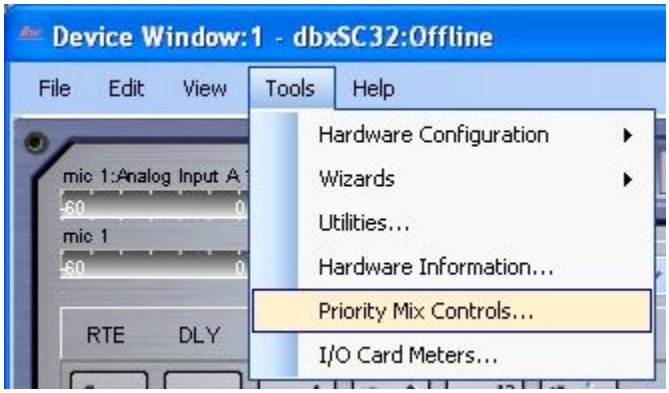
Complete the above as needed for each channel input as desired.

Priority Mix Controls - SC 32 / SC 64

The Priority Mix Controls section of the Tools Menu for the SC 32 and SC 64 allows you to adjust the nine (9) levels of priority override ducking used in the mixers of the SC 32 and SC 64.

To access Priority Mix Controls simply click on the Tools Menu as seen below.

Click on the Priority Mix Controls option.



The Priority Mix Controls window will appear.

This window contains the following controls for each priority override channel.

1) Depth - The gain reduction that will be imposed on all other channels with a lower priority number. (Numbers range from 1 to 10 with 1 being the highest priority)

2) Attack - The time it will take to override an existing source signal with the priority source signal.

3) Hold - How long the priority override will stay in place once the priority source signal is discontinued.

4) Release - The amount of time it will take to change back to the original source signal from the priority source signal once the hold time has expired.



The Priority Mix Controls are used to set a global priority setting to be used by all mixers. Each Priority Level can have a different Depth, Attack, Hold and Release. As Priorities are assigned within each channel of the Priority Mixer the parameters set here will be applied.

I/O Card Metering - SC 32 / SC 64

The I/O Card Metering section of the Tools Menu for the SC 32 and SC 64 allows you to see the input and output levels for each card loaded into the SC 32 and SC 64.

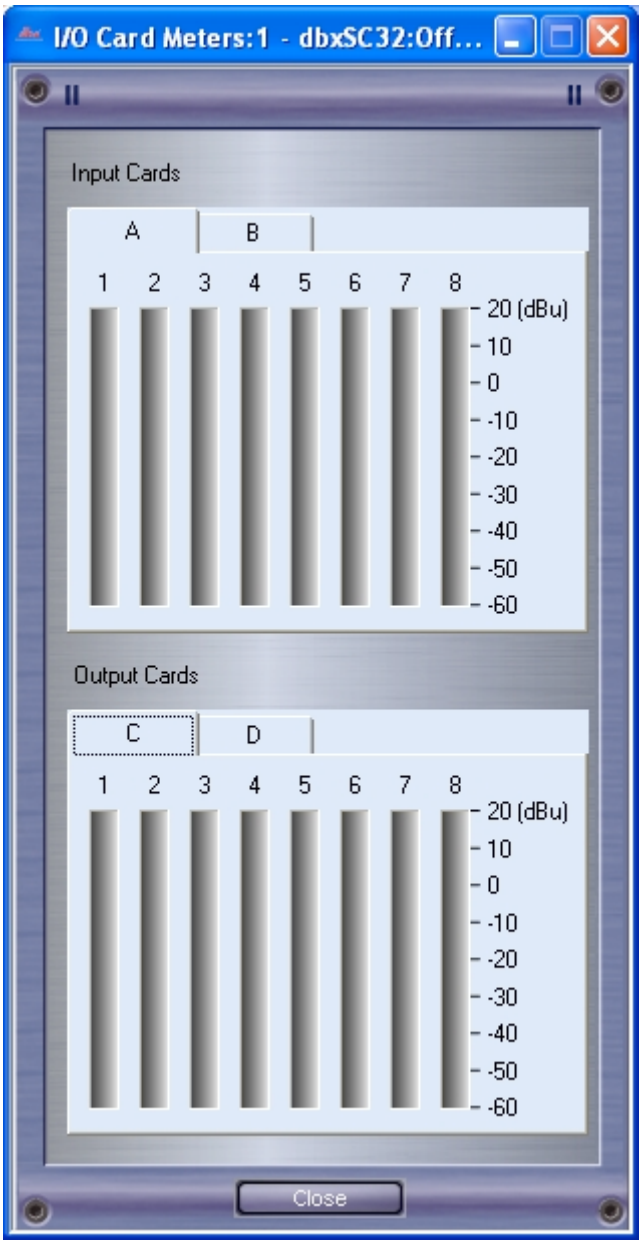
This is a prime location from which to drag meters to custom control panels.

To access I/O Card Metering simply click on the Tools Menu as seen below.

Click on the I/O Card Meters option.



The I/O Card Meters window will appear.

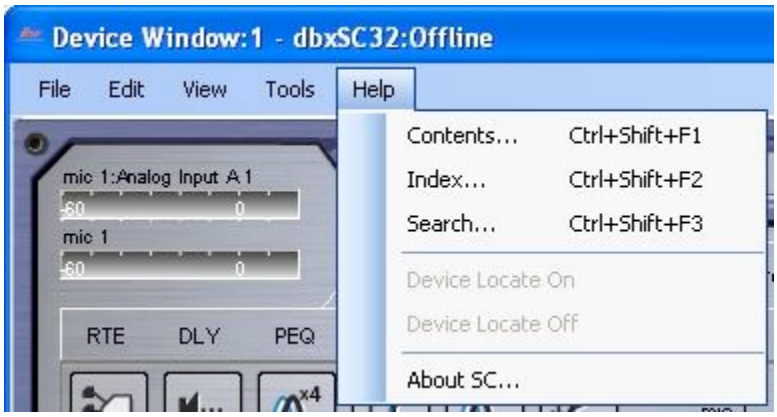


Each tab of the I/O Card Meters window will show the 8 meters associated with that Input or Output card.

Help - SC 32 / SC 64

The Help file is the most complete way to find information on topics for control and programming.

Click on the help menu option.



From this menu you may choose the following.

1) Contents - This will take you to the content tree with all topics as they relate to the SC 32 and SC 64.

2) Index - This is a list of all topics within System Architect including those for the SC 32 and SC 64.

3) Search - This brings you to a search page where you may type in what you are looking for within help and find related topics.

4) Device Locate On - This will make the front panel LCD display flash on and off for easy location of an online device within a rack of devices.

5) Device Locate Off - This turns off the locate LCD function.

6) About SC - This will give you information about the attached SC device.

Device Presets - SC 32 / SC 64

A Device Preset is a snapshot of the current state of the SC 32 / SC 64. It includes the parameter values of all of the Processing Modules in the current configuration.

Recall - Opens the Recall Preset dialog where you can select a preset to load.

Store - After parameters are adjusted, click the Store button and the Store Preset dialog will open allowing naming of the Device Preset as well as selection of which memory location (1-50) it will occupy in the device.

Delete - Opens the Delete Preset dialog, where you can select and delete Device Presets.



Processing Modules SC 32 / SC 64

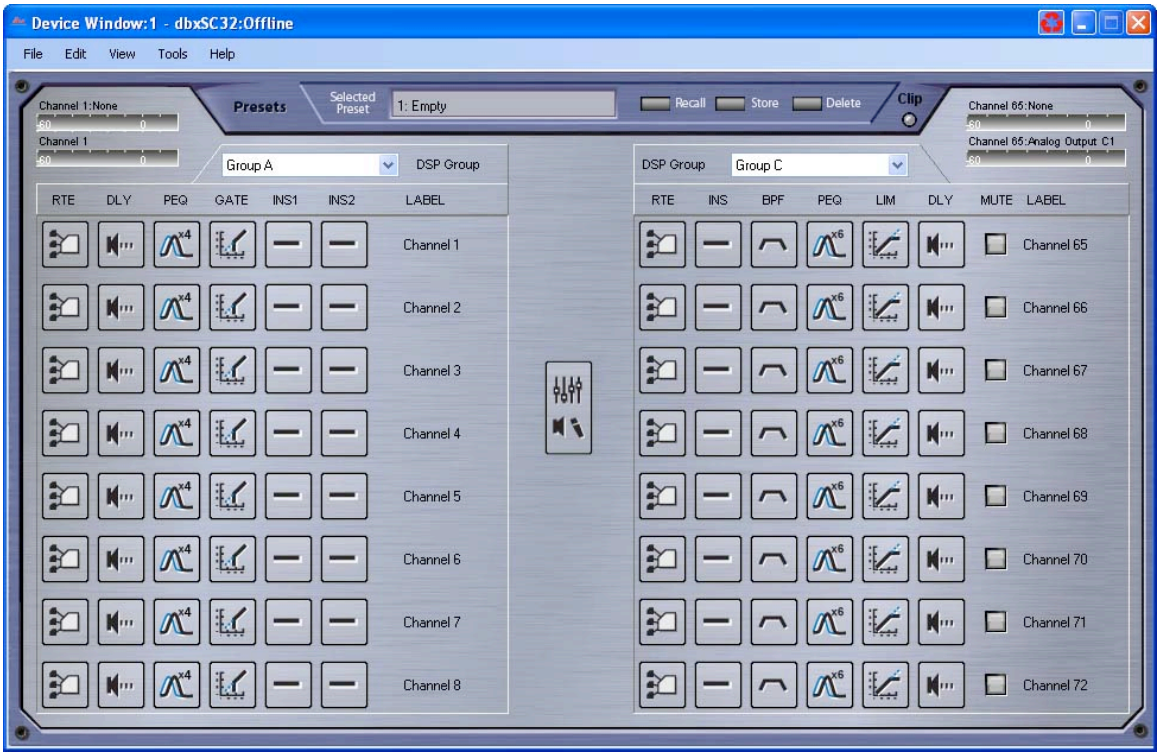
Processing Modules - SC 32 / SC 64

The SC 32 and SC64 are preconfigured architecture digital matrix processors. They have input processing with two configurable insert positions, a central matrix/mixer section and output processing with one configurable insert position.

The input and output processing contain multiple Processing Modules.

The input processing consists of a router, a delay, a 4-band parametric equalizer, a gate and two insert positions.

The output processing consists of a router, an insert position, a band-pass filter, a 6-band parametric equalizer, a limiter, a delay and a mute.

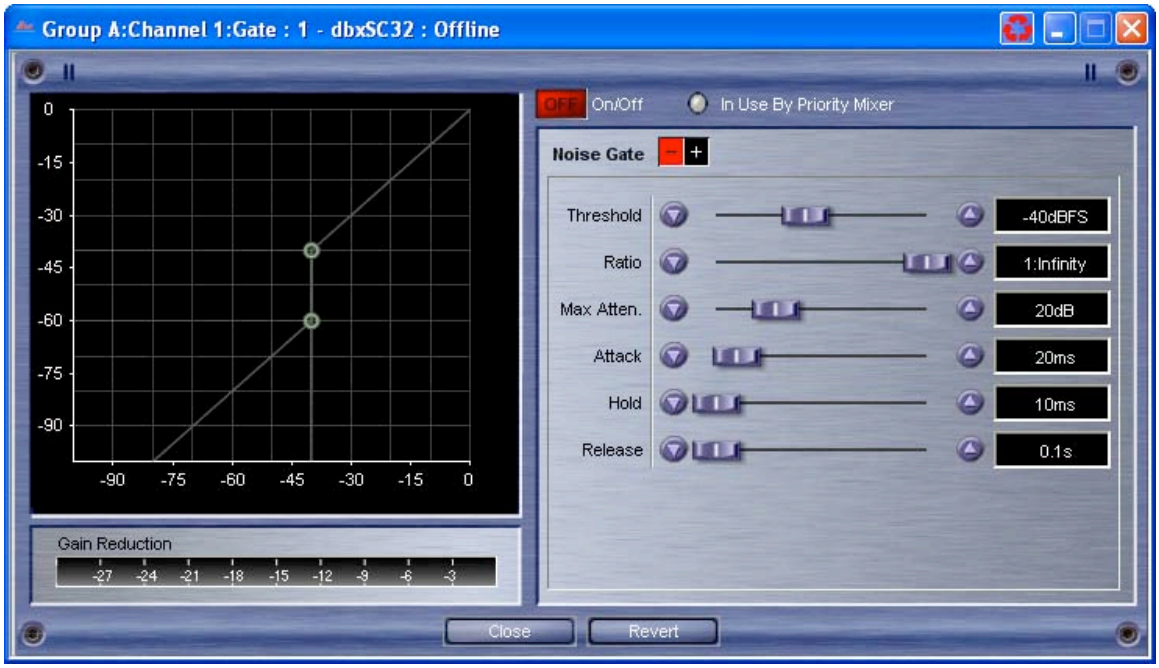


Double clicking on any Processing Module icon brings up the Editor for that Processing Module.

e.g. Double clicking on the Gate Processing Module icon



brings up the Gate editor



The table below shows the available insert Processing Modules for the input and output insert positions.

	Input Insert 1	Input Insert 2	Output Insert
Wire	✓	✓	✓
Advanced Feedback Suppression (AFS™)	✓		
Automatic Gain Control (AGC)	✓	✓	✓
Compressor	✓	✓	
De-Esser	✓	✓	
Sub-Harmonic Synthesizer	✓	✓	
12-Band Notch Filter	✓		
12-Band PEQ Filter	✓		
Ambient Noise Compensation (ANC)			✓
AutoWarmth®			✓
Gain			✓

Input Editors - SC 32 / SC 64

Input Editors - SC 32 / SC 64

Processing in the SC 32 / SC 64 can broken into two distinct sections, Input and Output. Input Processing includes everything in the signal path before Mid Mixer/Router. As each processing function is represented by an icon, the Input Processing functions are the group of icons on the left side of the control panel and can include up to 48 different icons or modules. The Input Editors are shown below.



Input Editors can be broken down into columns representing each type of processing.

Input Router (RTE)

Input Delay (DLY)

Input 4-Band Parametric EQ (PEQ)

Input Gate (GATE)

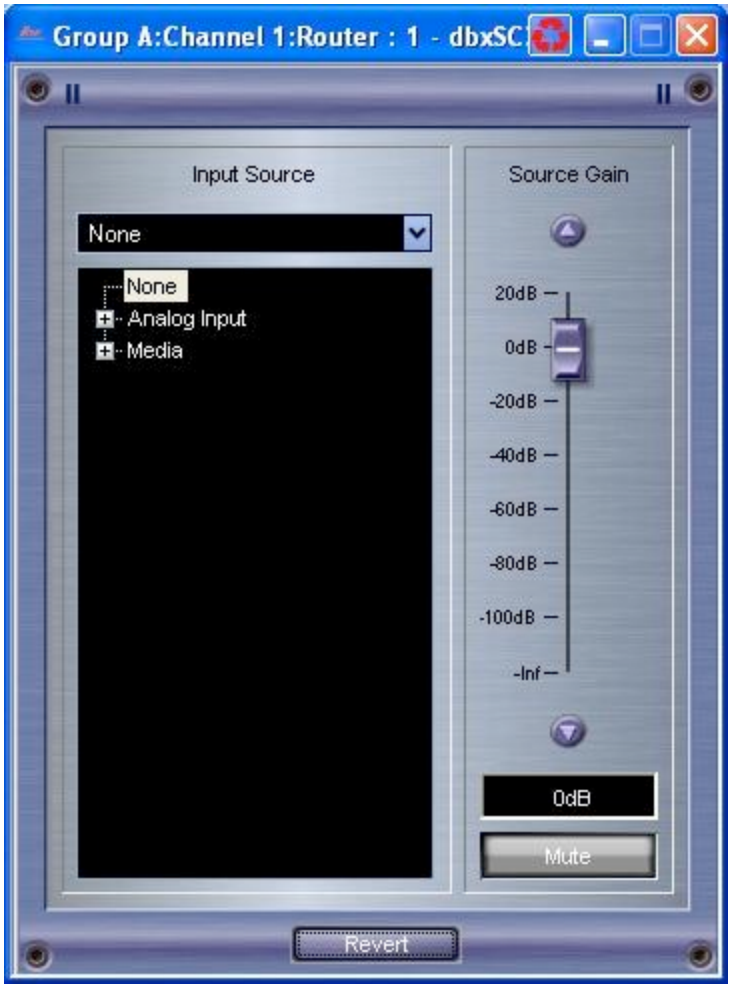
Input Inserts (INS1, INS2)

Input Router - SC 32 / SC 64

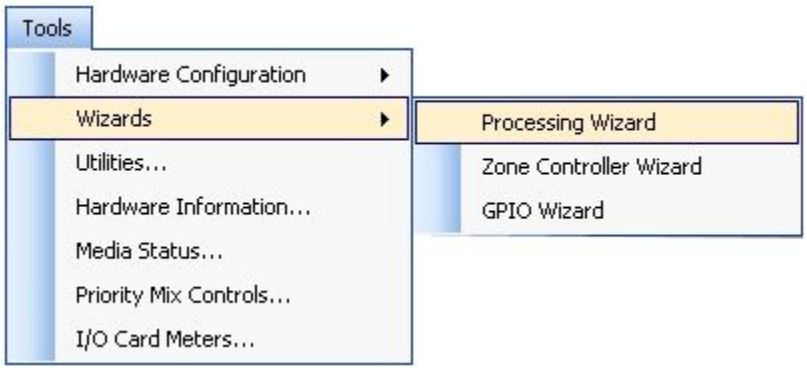


Router - The Input Router allows you to adjust Source Gain for each channel signal path.

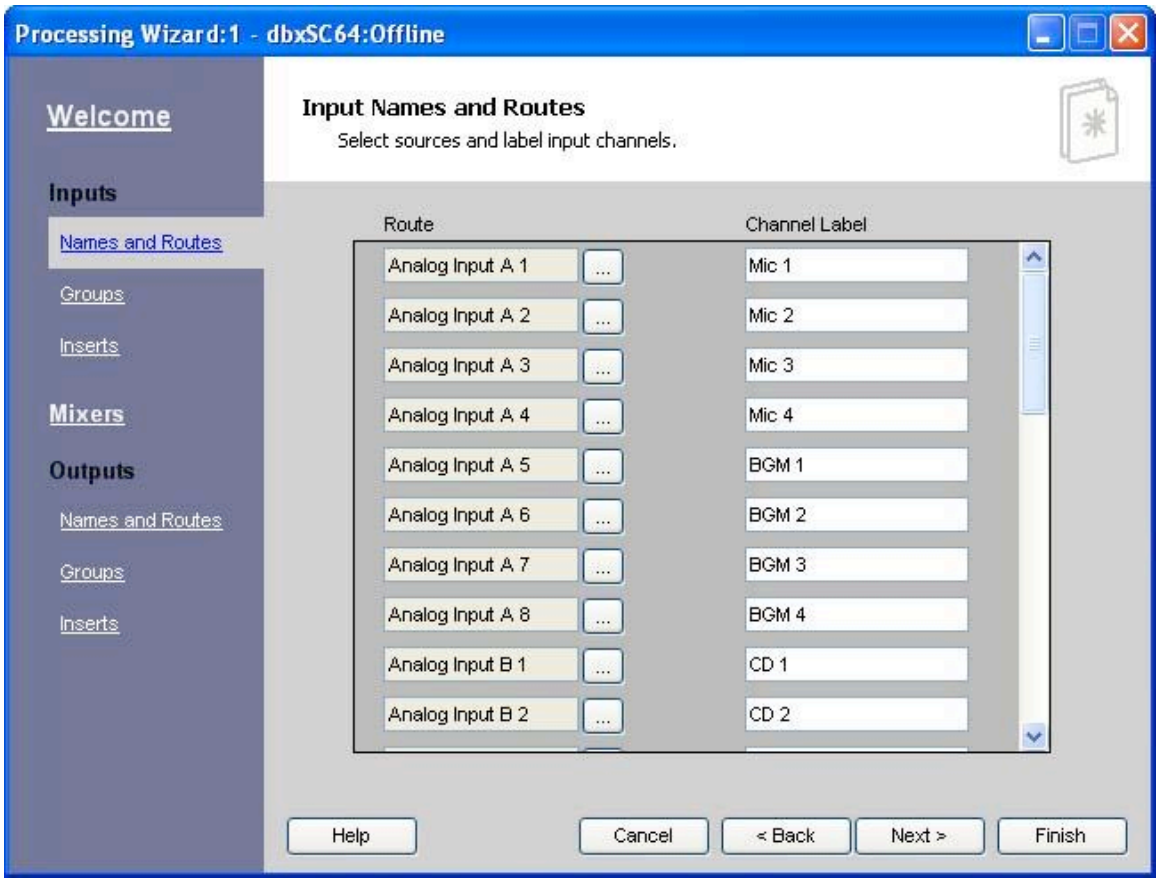
Input Router editor:



To configure this section, select Tools > Wizards > Processing Wizard.



Click on the Names and Routes link (under Inputs) to configure Routes and Channel Labels.



Input Delay - SC 32 / SC 64

The input delay section is used to time align or delay input signals as needed.

When the icon below is double clicked the window below will appear and allow for quick access for input signal delay settings.



Delay - Processing circuit used to delay one or more of the output signals by a controllable amount. This feature is used to correct for loudspeaker drivers that are mounted such that their points of apparent sound origin (not necessarily their voice coils) are not physically aligned.



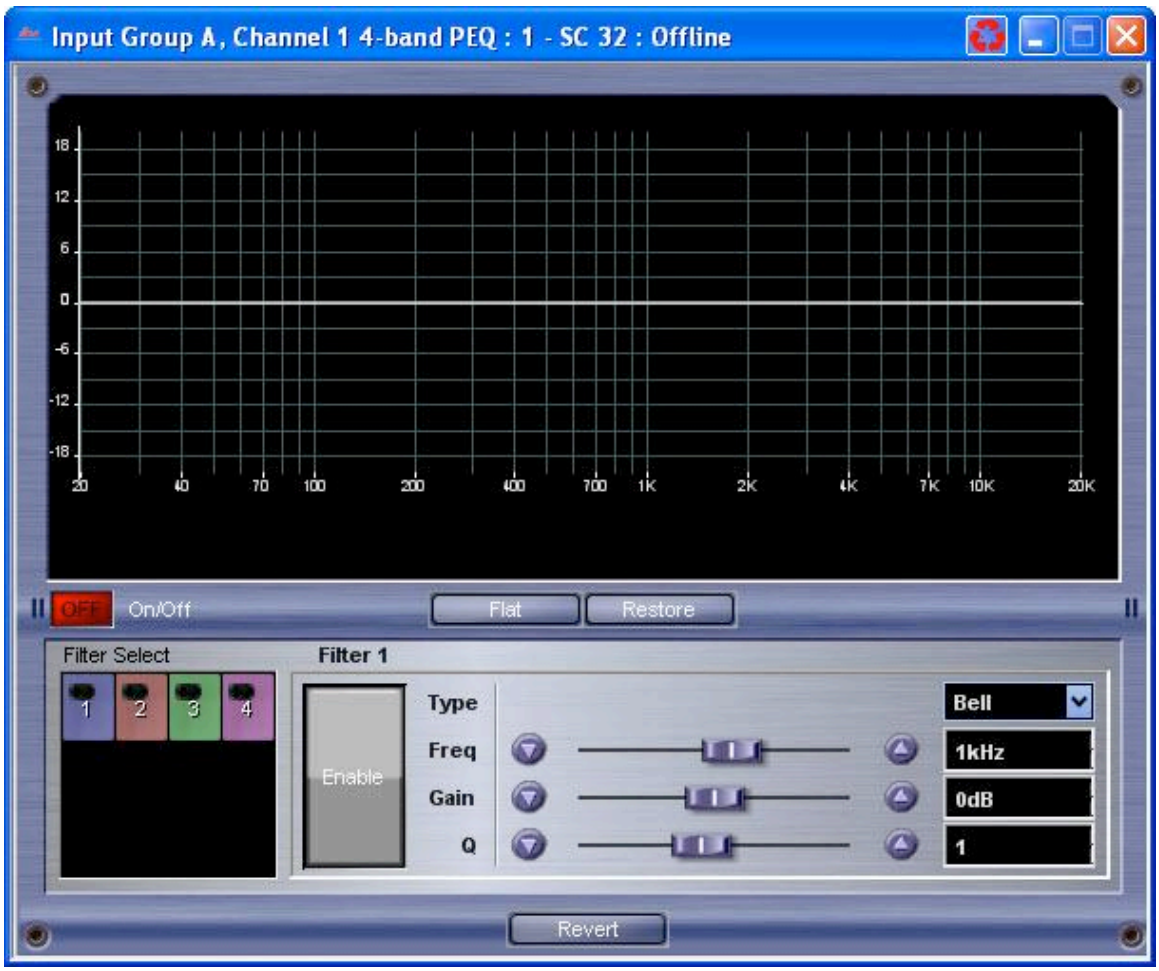
On/Off Button - Each input has a delay On/Off button for the channel delay.

Delay Time Fader - This fader defines the delay time to be used either in seconds, feet or meters.

Input 4-Band Parametric EQ - SC 32 / SC 64



4-Band Parametric EQ - This 4-band Parametric Equalizer offers adjustment of all the "parameters" of the filter; these parameters include Type, Frequency, Gain, and "Q". This lets you control the amplitude of each band as well as shift the center frequency and adjust the bandwidth of the filter.



On/Off Button - Turns the PEQ Processing Module on and off; when in the Off position, the signal path bypasses this algorithm.

Flat Button - This flattens the PEQ.

Restore Button - This restores the PEQ after it has been flattened.

Filter Select 1-4 - This allows the user to select a filter to work with.

Filter Enable Button - This button provides individual on/off control of each PEQ filter.

Freq Fader - This fader allows the user to select the center frequency of a Bell PEQ filter or the corner frequency of a Shelf filter.

Gain Fader - This provides control of the boost or cut of the selected filter.

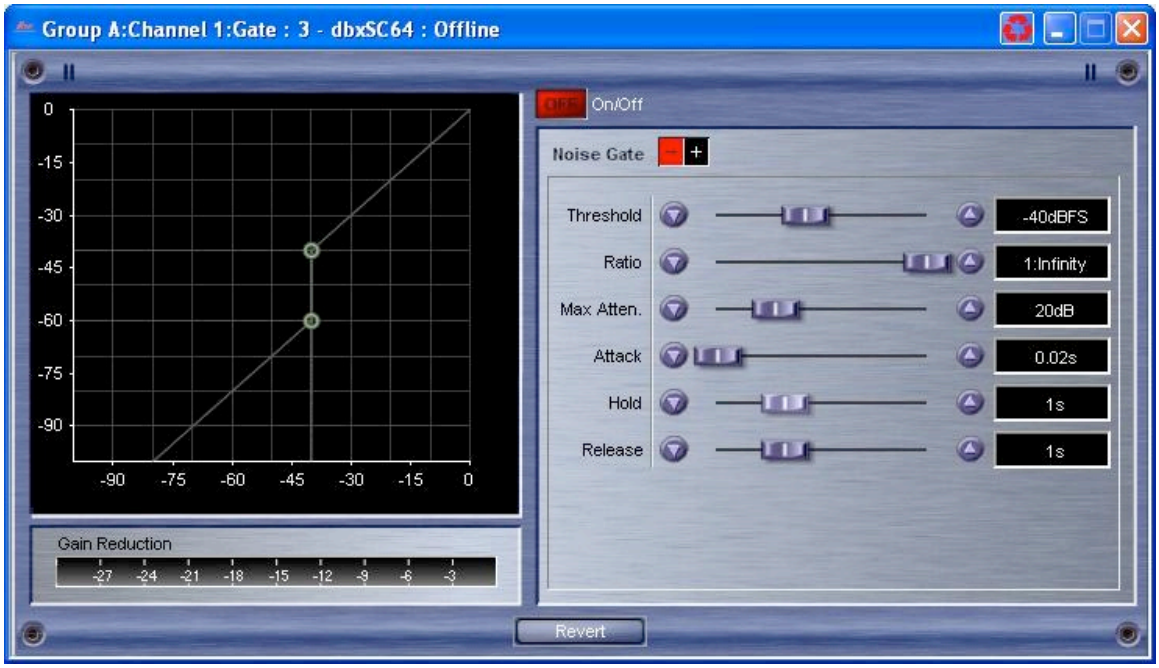
Q Fader - This provides control of the Bell filter width or slope of a Shelf filter.

Type Selection - This allows any of the filters to be switched between Bell, Low Shelf and High Shelf filter types.

Input Gate - SC 32 / SC 64



Gate - A fixed "infinite" downward expansion ratio. Used extensively for controlling unwanted noise, such as preventing "open" microphones from introducing extraneous sounds into an audio system. When the incoming audio signal drops below the user set-point (the threshold point) the expander prevents any further output by reducing the gain to "zero".



On/Off Button - Turns the Gate on and off; when in the Off position, the signal path bypasses this algorithm.

Threshold Fader - The Threshold fader sets the level at which the gate opens. Anything above the Threshold passes, while signal that is lower than the Threshold is attenuated. Beware, setting the Threshold to high can cut off the tail end of signals as they fade out (the sustain of a guitar note, a held piano chord, a reverb tail, etc.).

Ratio Fader - This is where you decide how much downward expansion you want. This Ratio works opposite from that of the compressor or limiter. If a ratio of 1:4 is selected, a signal that is 1dB below the Threshold will be reduced in gain so that the resultant signal is 4dB below the Threshold.

Max Atten. Fader - This fader sets the amount of maximum attenuation applied to the signal once it has fallen below the Threshold.

Attack Fader - This fader sets the time it takes for the volume of the sound to go from attenuated its original level.

Hold Fader - The Hold fader sets the amount of time the gate is held open after the signal passes below the Threshold point.

Release Fader - The Release fader sets the speed at which the gate "closes" or attenuates when the end of the Hold time is reached.

Input DSP Inserts - SC 32 / SC 64

Input Inserts - SC 32 / SC 64

The following icons, when configured through the Processing Wizard, will appear on the control panel. When you double click the Processing Module icon on the Device Window, the editor for the DSP function will open.

Once the editor is open you may choose to change any of the parameters.

Advanced Feedback Suppression (AFS™)

Automatic Gain Control (AGC)

Compressor

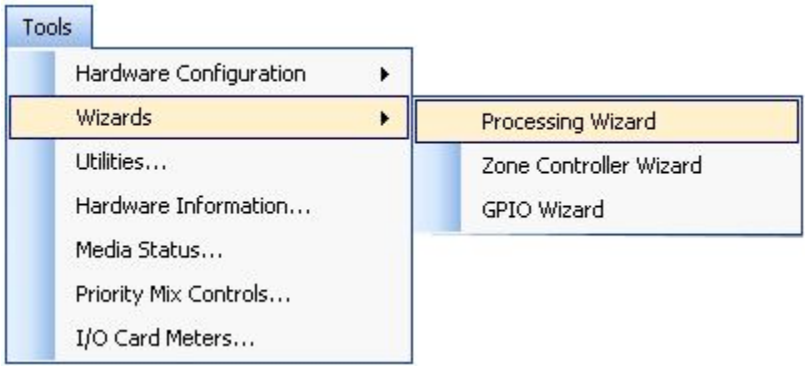
De-Esser

12-Band Notch Filter

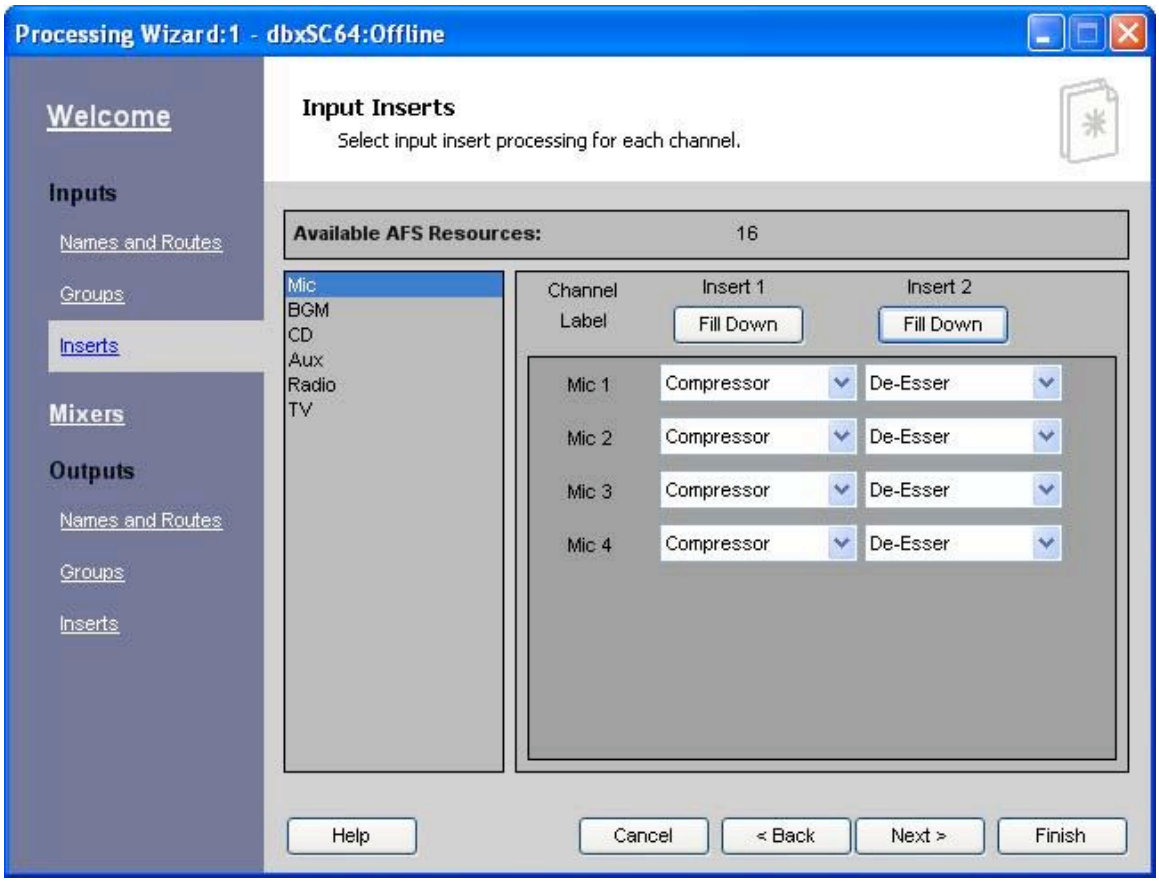
12-Band PEQ Filter

Sub-Harmonic Synthesizer

Inserts, Input DSP - To access this section, select Tools from the menu bar. Then select Processing Wizard.



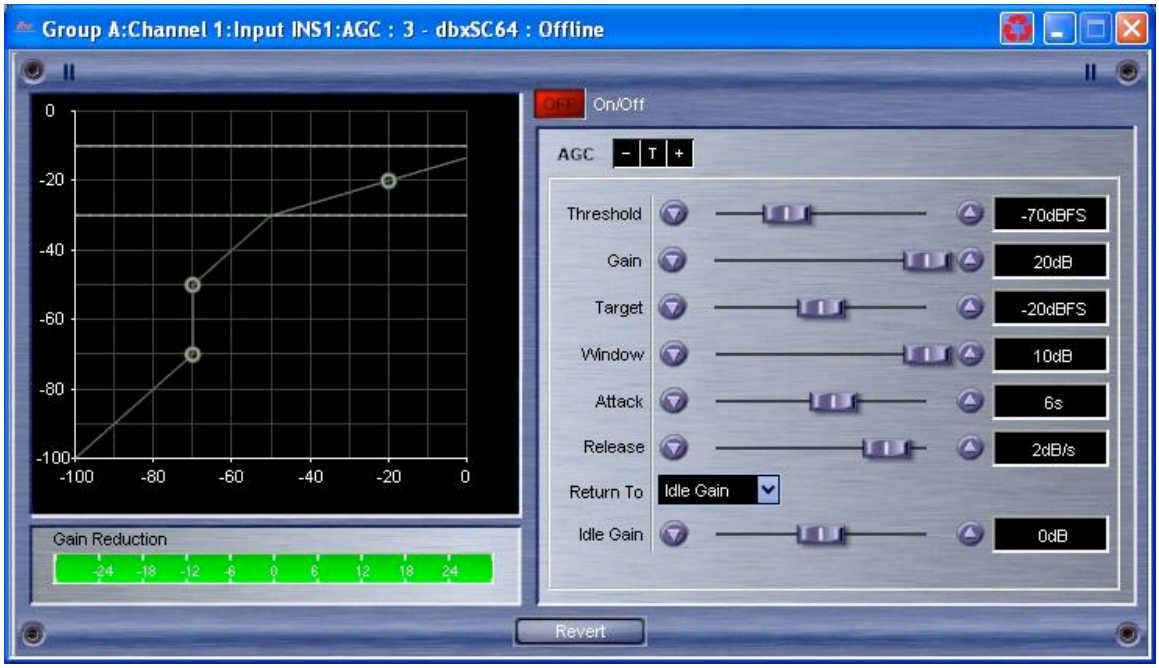
Click on the Inserts link (under Inputs).


Processing Wizard:1 - dbxSC64:Offline
Welcome
Inputs
Names and Routes
Groups
Inserts
Mixers
Outputs
Names and Routes
Groups
Inserts
Input Inserts
Select input insert processing for each channel.
Available AFS Resources:
16
Mic
BGM
CD
Aux
Radio
TV
Channel Label
Insert 1
Fill Down
Insert 2
Fill Down
Mic 1
Compressor
De-Esser
Mic 2
Compressor
De-Esser
Mic 3
Compressor
De-Esser
Mic 4
Compressor
De-Esser
Help
Cancel
< Back
Next >
Finish

Auto Gain Control - SC 32 / SC 64



Automatic Gain Control - The AGC is used to keep the average level of a signal at a constant level. High level signals are reduced by a fast limiter to prevent distortion by clipping. The AGC Threshold meters show what region of the AGC the input signal is in, T (yellow) within the Window, A + (red) Limiter, A - (green) adding Gain



On/Off Button - The On/Off button turns the Auto Gain Control on and off; when in the Off position, the signal path bypasses this algorithm.

Threshold Fader - This fader changes the level at which the AGC recognizes a signal as a legitimate level to be increased into the AGC level Window. The Threshold also defines the lower limit of the AGC. This prevents the AGC from adding gain to low level signals or noise.

Gain Fader - This is the maximum amount of Gain to be applied to the signal after it crosses the Threshold limit in an attempt to reach the Target.

Target Fader - This is the user defined optimum signal level to be achieved and maintained.

Window Fader - This fader adjusts the size of the Window around the target. Decreasing the size of the Window maintains tighter control of the signal, while opening the Window up provides less control.

Attack Fader - This fader sets the length of time after a signal crosses the Threshold that gain or gain reduction will be applied.

Release Fader - This fader is the rate of change that will take effect after the signal level has fallen below the Threshold and will no longer be controlled by algorithm.

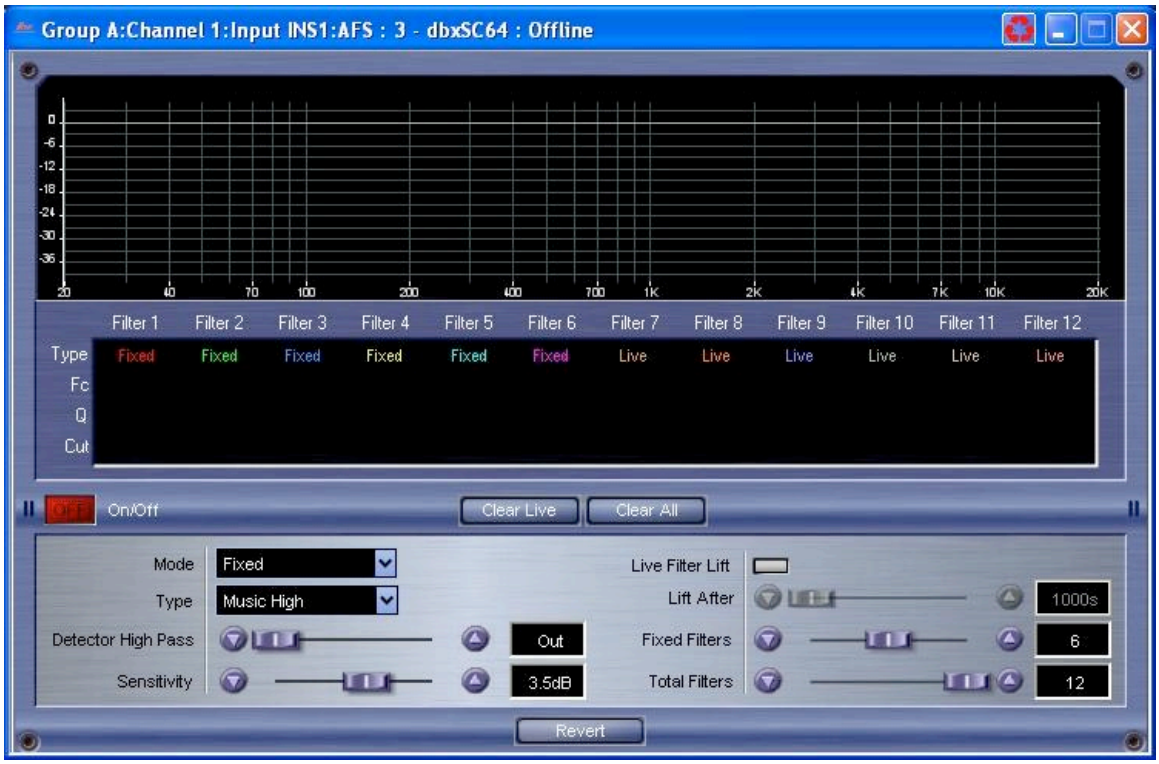
'Return To' Selection - This determines whether the AGC will return to an Idle Gain setting or a Last Gain Setting.

Idle Gain Fader - This fader determines the Idle Gain setting for when the 'Return To' selection is set to Idle Gain.

Advanced Feedback Suppression - SC 32 / SC 64



AFS - The SC 32 / SC 64 offers the dbx exclusive Advanced Feedback Suppression (AFS™) algorithm as a Processing Module. This employs Precision Frequency Detection to find the exact center of the feedback down to one-hundredth of a Hertz (0.01Hz). Once the AFS algorithm knows the exact center, it is relatively simple to place a sharp notch filter in that location, removing the feedback without damaging the surrounding audio.



On/Off Button - Turns the AFS module on and off; when in the Off position, the signal path bypasses this algorithm.

Clear Live - This parameter clears the live filters to their default state.

Clear All - This resets all feedback filters to their nominal (no cut) state.

Mode Selection - This determines whether the AFS algorithm is working in Fixed mode or Live mode.

Fixed Mode - When the mode is set to Fixed, the algorithm updates only the fixed filters. Fixed mode is designed to help setup the AFS algorithm and is more

sensitive. In Fixed mode, once filters are set they remain stored as part of the program until reset. Fixed mode is typically used before the performance without any input signal.

Live Mode - When the mode is set to Live, the algorithm updates only the live filters. In Live mode, the live filters automatically detect and remove feedback during the performance. When all of the live filters have been used, they begin to 'round robin'. Essentially this means that the first live filter set will clear and be reassigned to the new feedback frequency.

Type Selection - This allows the type of program material to be selected. Options are Speech, Music Low, Music Medium and Music High.

Live Filter Lift - Live Filter Lift assigns a timer to each Live filter. Once the timer for that filter has elapsed, the algorithm checks to see if that filter is still necessary, if not the filter is lifted maintaining the sonic fidelity of the system. If the filter is still needed the timer is reset and the algorithm will check again once it has run out again.

Lift After Fader - This parameter allows the user to set the timer length for the Live Filter Lift portion of the algorithm.

Detector - This parameter sets a high pass filter in the path of the AFS detector. There may be occasions where the AFS algorithm is removing too much low end because it is being triggered by synthesizer or bass notes that are not really feedback. This parameter provides a mechanism to make the AFS algorithm less sensitive to low frequency thereby setting fewer filters in the bass region.

Sensitivity Fader - The AFS algorithm is very effective when the audio has a nominal level of 0 dBu, however if the audio is too low in level the AFS algorithm may not catch feedback as quickly as possible. By increasing or decreasing the sensitivity you can adjust for audio that is either too loud or too soft and help the AFS function properly.

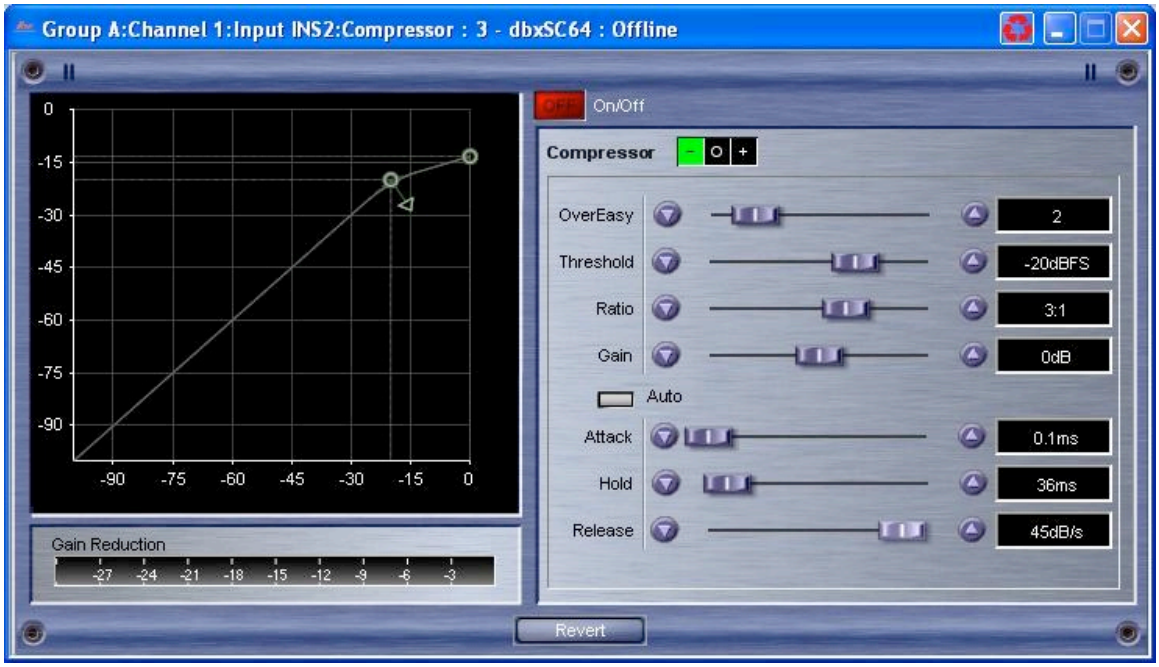
Fixed Filters Fader - This allows the user to select how many of the total number of filters are Fixed and how many are Live. The Fixed/Live filter usage will be indicated at the bottom of each page of the feedback elimination effect. 'F' indicates an available fixed filter, and 'L' indicates an available live filter. A blocked out F or L indicates a filter that is set, or in use.

Total Filters Fader - This fader determines the total number of filters to be used.

Input Compressor - SC 32 / SC 64



Compressor - The Compressor Processing Module is used to reduce the dynamic range of the signal passing through it. This is normally done through the use of a VCA (Voltage Controlled Amplifier), whose gain is a function of a control voltage applied to it.



On/Off Button - Turns the Compressor module on and off; when in the Off position, the signal path bypasses this algorithm.

OverEasy Fader - OverEasy is a soft-knee smoothing function that occurs about the compression threshold; the higher the OverEasy number the greater the smoothing.

Threshold Fader - Threshold is the signal level at which the Compressor begins gain reduction. If the Threshold is set to -10 dBu, then any signal that has a level higher than -10 dBu is compressed while any signal that has a level lower than -10dBu is left at the original level. For most signals the most natural compression is achieved when most of the signal content remains just below the threshold and only the peaks cross the threshold.

Ratio Fader - Ratio is the amount the Compressor reduces the signal level of the sound that is above the threshold. A 2:1 ratio means that if the incoming signal is

2dB over the threshold the Compressor will reduce the gain with a resulting signal that is 1dB over the threshold. For light compression, choose a lower ratio, while heavy compression requires a higher ratio. A setting of Inf:1 makes the Compressor act as a limiter.

Gain Fader - This parameter is used to compensate for the gain lost during compression. By using heavy compression on a signal and then boosting the signal with the ‘make-up’ Gain, the user can create a signal that sounds much louder than it actually is.

Auto Button On/Off - When Auto mode is on, the algorithm dynamically sets the Attack, Hold, and Release times for the Compressor. The Auto mode constantly adjusts these parameters in real time for optimum performance from the Compressor. You will find that for most applications, not only is using the Auto mode faster and easier but by letting the Compressor constantly tweak these parameters for you will result in a better end result.

Attack Fader - Attack is how fast the Compressor starts to compress the signal after it passes the Threshold. Fast attack is useful when dealing with very fast transients. The Attack fader is not active when in Auto mode.

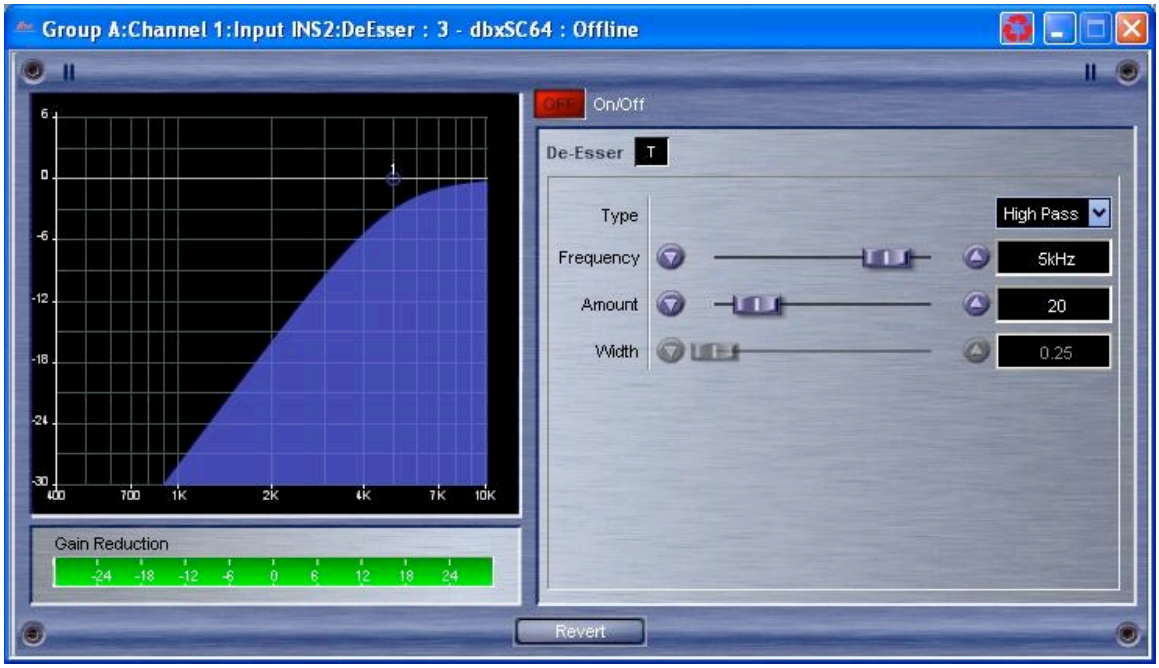
Hold Fader - Hold is the time the compressor remains in compression mode after the signal has dropped below the Threshold. A longer hold time is useful in smoothing out the sound when compressing several fast peaks that are fairly close together in time. The Hold fader is not active while in Auto mode.

Release Fader - Release is how fast the signal comes out of compression. The Release is in dB per second. For example, if Release is set to 5 dB /sec, and the signal is at 10dB of gain reduction, the release time is 2 seconds. Having a release time that is either too fast or too slow for the signal can result in audible artifacts called ‘pumping’ or ‘breathing’. This can cause volume drops in your signal that may not be desired. The Release fader is not active while in Auto mode.

Input De-Esser - SC 32 / SC 64



De-Esser - The De-Esser Processing Module is ideal for removing unwanted vocal sibilance.



On/Off Button - Turns the De-Esser on or off; when in the Off position the algorithm is bypassed in the signal chain.

Type Selection - This allows selection between High Pass and Band Pass detection filter types.

Frequency Fader - This is the center frequency the De-Esser uses when in Band Pass mode or the corner frequency used when in High Pass mode.

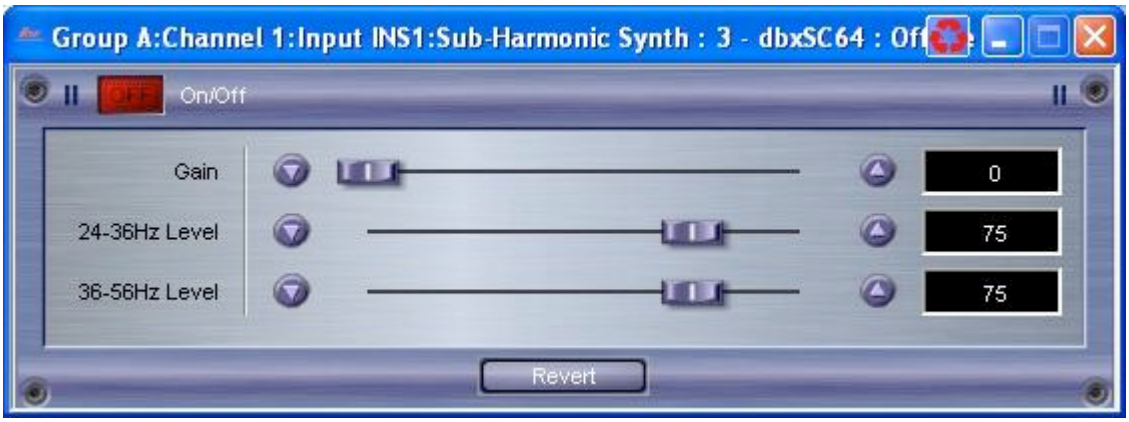
Amount Fader - This fader determines the amount of De-Essing. This fader is very much like a combination threshold / ratio control. A higher the number or amount the greater the degree of De-Essing applied to the signal.

Width Fader - Sets the Q or width of the Band Pass filter when in Band Pass mode.

Input SubHarmonic Synthesizer - SC 32 / SC 64



Sub-Harmonic Synthesizer - The Sub-Harmonic Synthesizer Processing Module has been specifically optimized to enhance Bass audio material.



On/Off Button - Turns the Sub-Harmonic Synthesizer Processing Module on and off; when in the Off position, the signal path bypasses this algorithm.

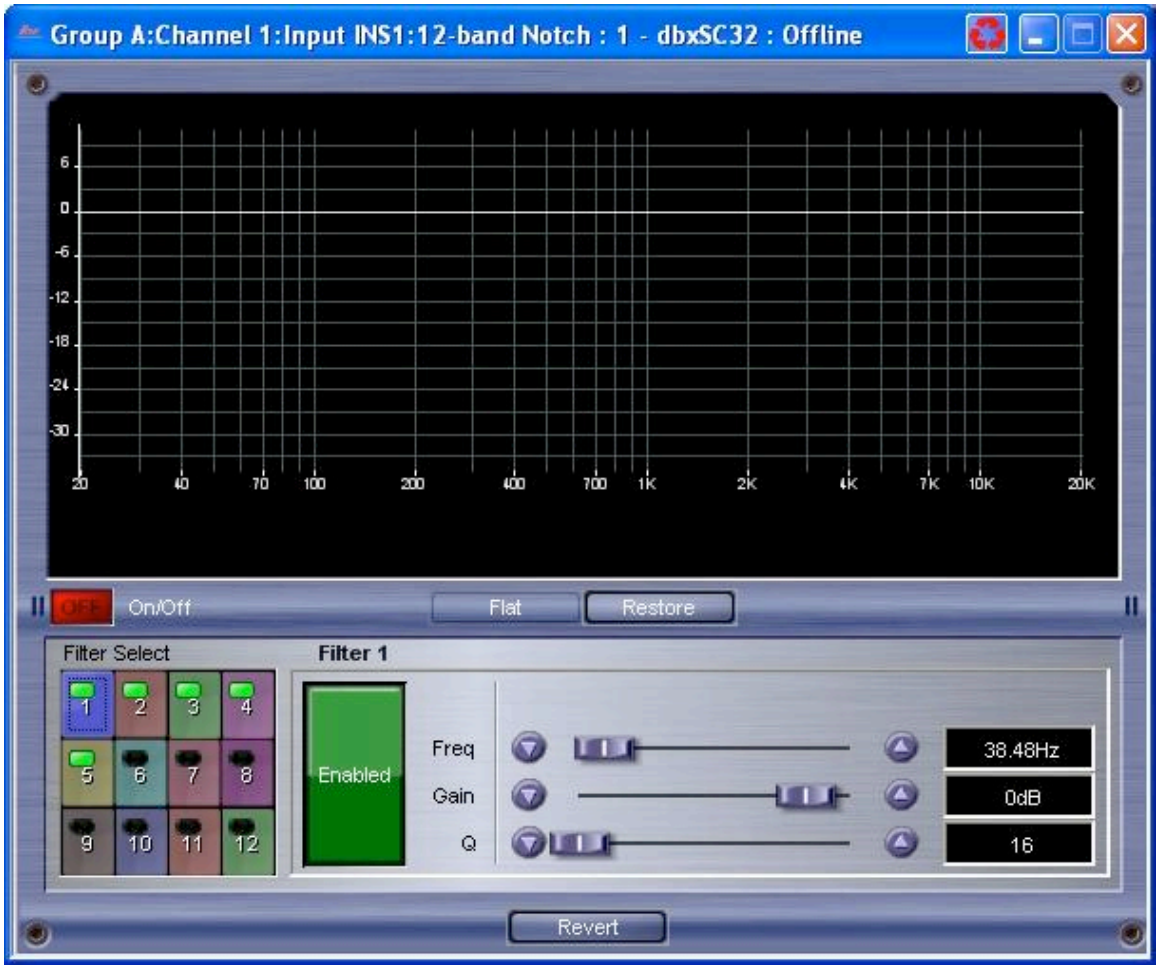
Gain - This parameter sets the overall level of the Sub-Harmonic Synthesizer added to the signal.

24-36 Hz and 36-56 Hz Level faders - These controls allow the user to customize the amount of the respective synthesized frequencies to be added in, tuning the ultimate bass response of your system to taste. Experimentation will pay off with smooth, full, deeply extended bass. Remember, you are not selecting a frequency. You are controlling the overall level of each band.

Input 12-band Notch Filter - SC 32 / SC 64



12-Band Notch Filter - The 12-Band Notch Filter Processing Module is the perfect tool for removing very specific undesirable frequencies that may appear in the signal. With Q up to 128 and the ability to cut by up to 36 dB, the 12-Band Notch Filter can provide extremely surgical frequency band removal.



On/Off button - Turns the 12-Band Notch Filter Processing Module on and off; when in the Off position, the signal path bypasses this algorithm.

Filter Select (1 to 12) - Selects the desired Notch Filter.

Freq Fader - Sets the desired frequency of the selected Notch Filter.

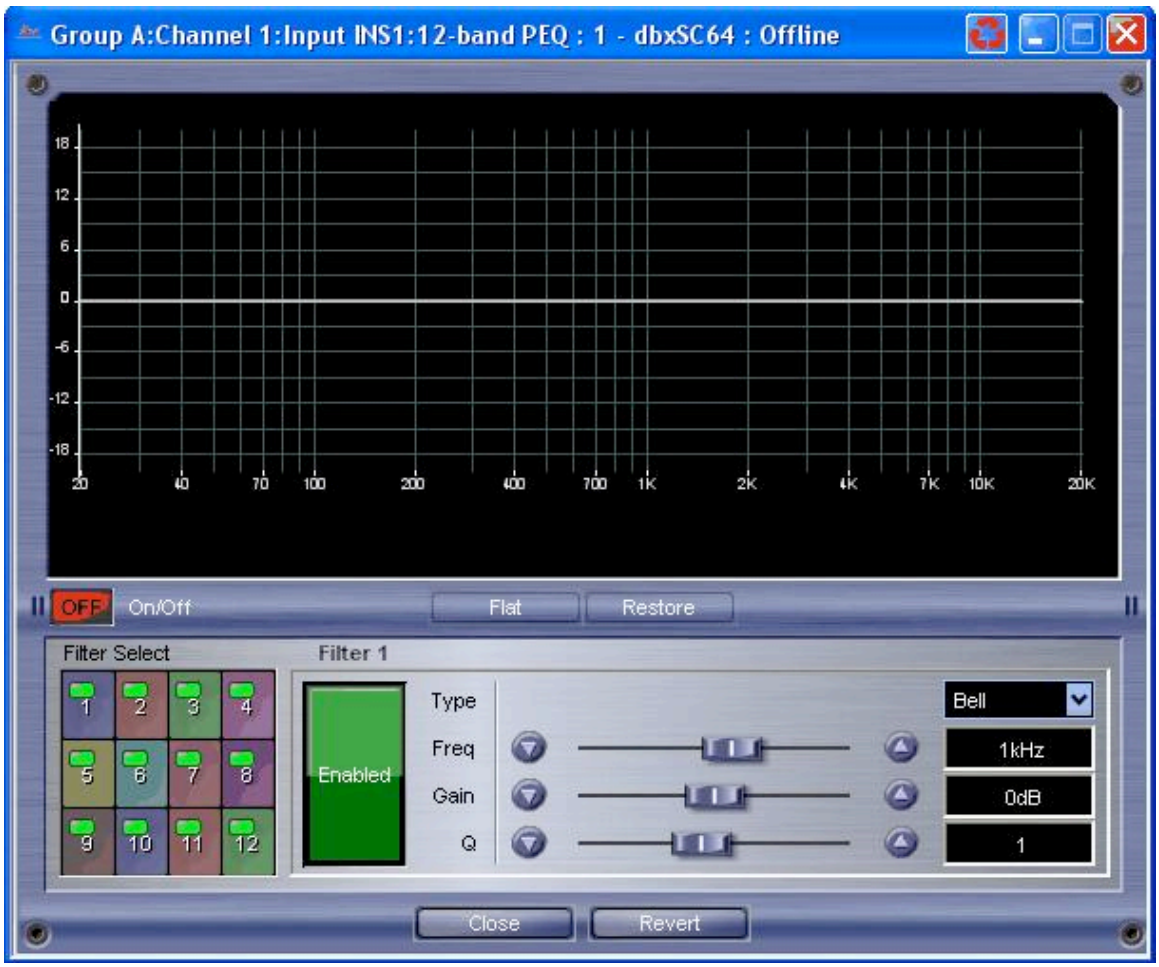
Gain Fader - Sets the level of the selected Notch Filter. Set to +6dB to help find unwanted feedback, then set to -3dB to -36dB to remove.

Q Fader - Selects the Q or bandwidth of the selected Notch Filter.

Input 12-Band PEQ - SC 32 / SC 64



12-Band PEQ Filter - This 12-band Parametric Equalization (PEQ) Filter offers adjustment of all the "parameters" of the filter; these parameters include Type, Frequency, Gain, and Q. This lets you control the amplitude of each band as well as shift the center frequency and adjust the bandwidth of the filter.



On/Off Button - Turns the 12-Band PEQ Filter Processing Module on and off; when in the Off position, the signal path bypasses this algorithm.

Flat Button - This flattens the PEQ.

Restore Button - This restores the PEQ after it has been flattened.

Filter Select 1-12 - This allows the user to select a filter to work with.

Filter Enable Button - This button provides individual on/off control of each PEQ filter.

Freq Fader - This fader allows the user to select the center frequency of a bell PEQ filter or the corner frequency of a shelf filter.

Gain Fader - This provides control of the boost or cut of the selected filter.

Q Fader - This provides control of the bell filter width or slope of a shelf filter.

Type Selection - This allows selection between Bell, Low Shelf and High Shelf filter types.

Wire (input) - SC 32 / SC 64

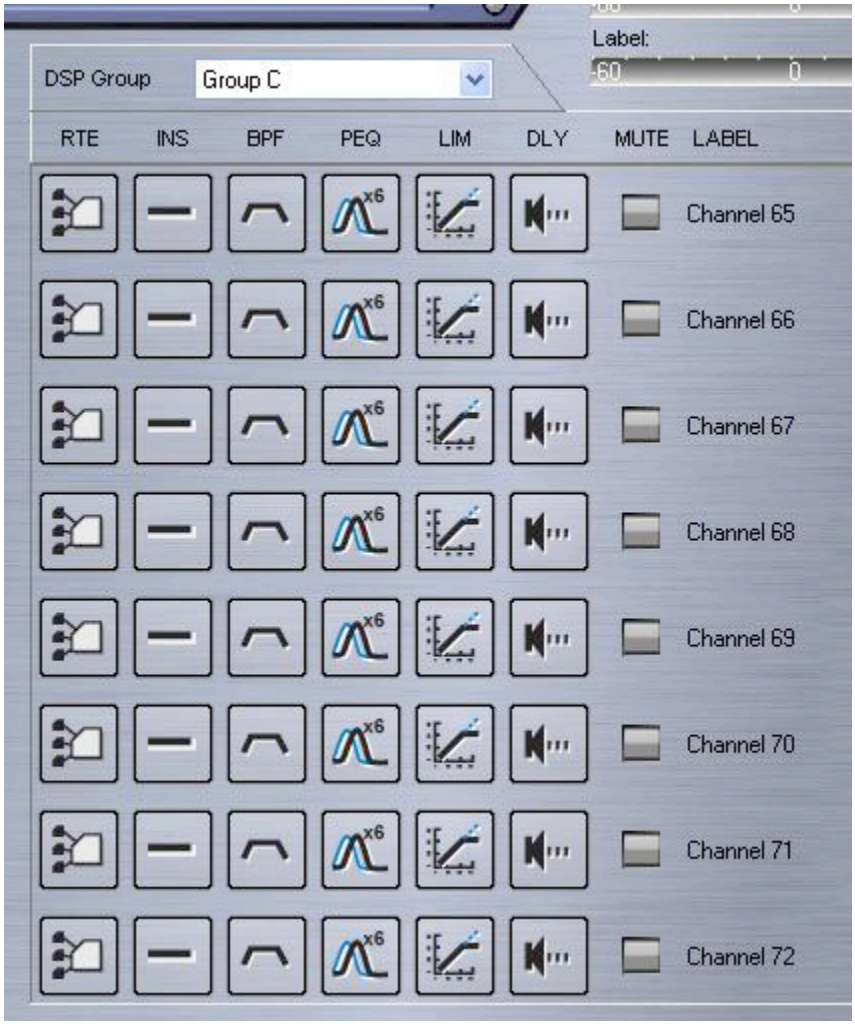


“Wire” is the default setting within the Processing Wizard for input inserts. When selected, audio passes through the insert unaffected.

Output Editors - SC 32 / SC 64

Output Editors - SC 32 / SC 64

Processing in the SC 32 / SC 64 can be broken into two distinct sections, Input and Output. Output Processing includes everything in the signal path after the Input Delay. As each processing function is represented by an icon, the Output Processing functions are the group of icons on the right hand side of the Control Panel and can include up to 48 different icons or modules. The Output Editors are shown below.



Input Editors can be broken down into columns representing each function.

Output Router (RTE)

Output Inserts (INS)

Output Bandpass Filter Crossover (BPF)

Output EQ (PEQ)

Output Limiter (LIM)

Output Delay (DLY)

Output Router - SC 32 / SC 64

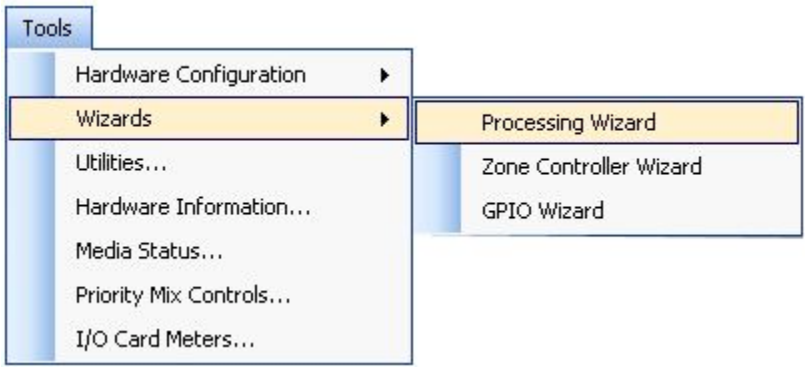
The Output Router is the position where you will select whether you will select between discrete signals or the output of a Mid Mixer.



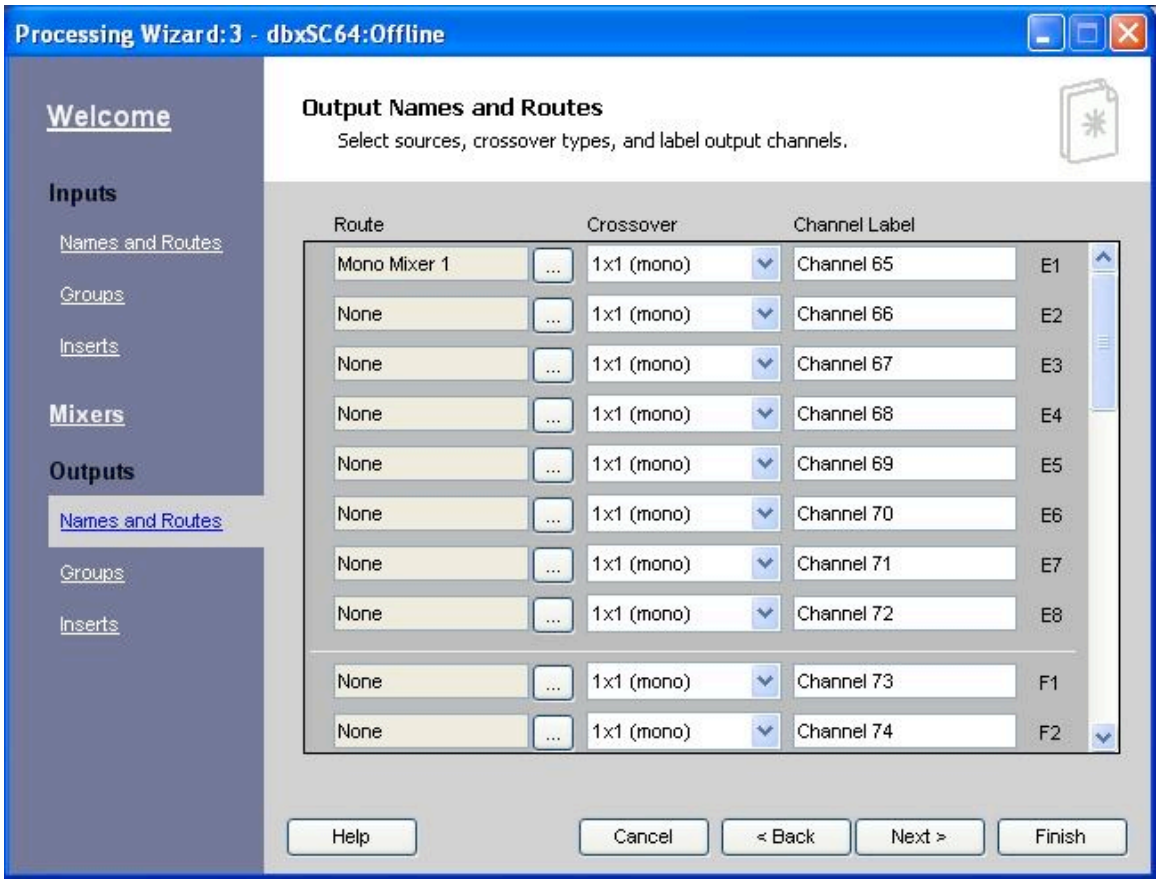
Router - The Output Router allows you to specify which of the input or Mid Mixer Output signals will be sent to the output or output group if crossed over.



To configure this section, select Tools > Wizards > Processing Wizard.



Click on the Names and Routes link (under Outputs) to configure Routes, Crossover types, and Output Channel Labels.



Output DSP Inserts - SC 32 / SC 64

Output DSP Inserts - SC 32 / SC 64

The following icons when selected in the configuration wizard will appear on the control panel. When you double click the icon on the control panel an edit window for the DSP function will open and the parameters are available.

 Wire

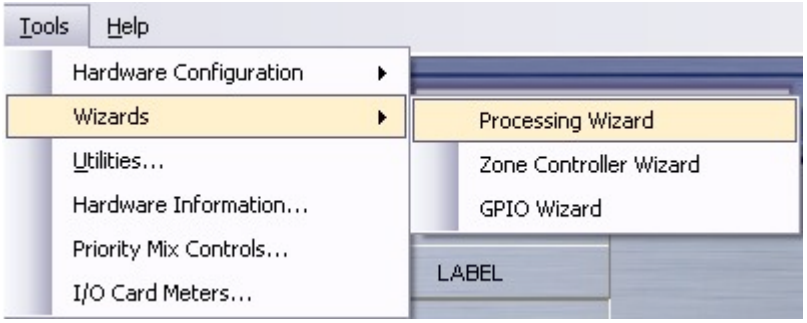
 Ambient Noise Compensation (ANC)

 AutoWarmth®

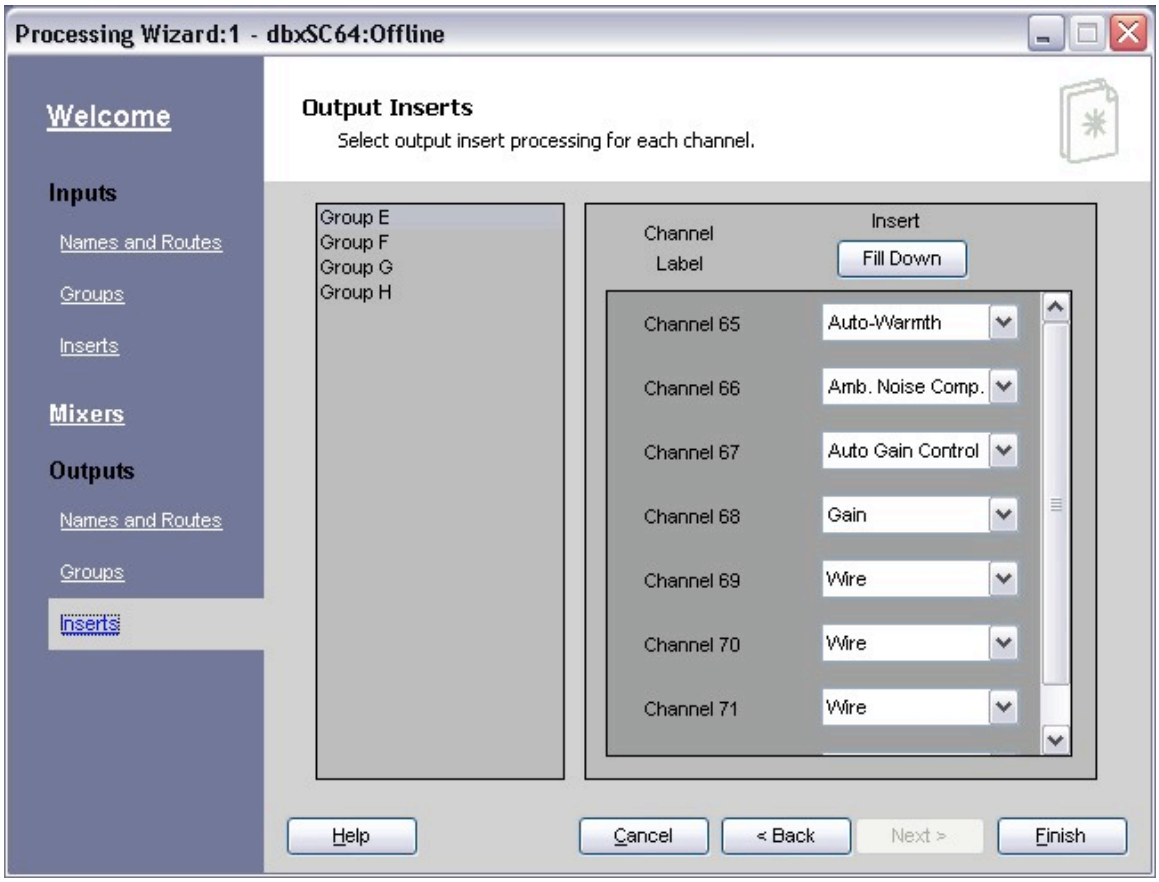
 Automatic Gain Control

 Gain

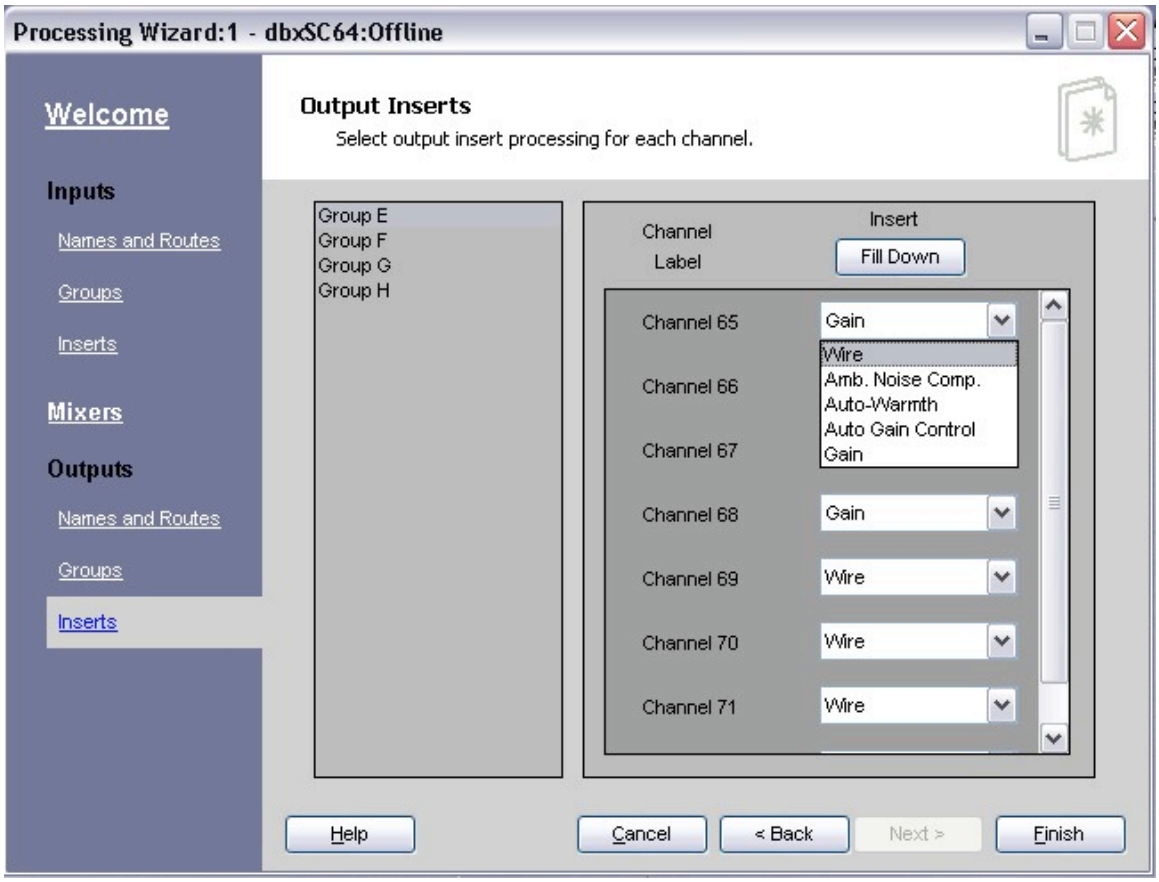
To configure this section, select Tools > Wizards > Processing Wizard.



Click on either the Input DSP Inserts and Delays link . . .



. . . or select the Output DSP Inserts link.


Processing Wizard:1 - dbxSC64:Offline
Welcome
Inputs
Names and Routes
Groups
Inserts
Mixers
Outputs
Names and Routes
Groups
Inserts
Output Inserts
Select output insert processing for each channel.
Group E
Group F
Group G
Group H
Channel Label
Insert
Fill Down
Channel 65
Channel 66
Channel 67
Channel 68
Channel 69
Channel 70
Channel 71
Gain
Wire
Amb. Noise Comp.
Auto-Warmth
Auto Gain Control
Gain
Gain
Wire
Wire
Wire
Help
Cancel
< Back
Next >
Finish

Wire (output) - SC 32 / SC 64



"Wire" is the default setting within the Processing Wizard for output inserts. When selected, audio passes through the insert unaffected.

Ambient Noise Compensation - SC 32 / SC 64



Ambient Noise Compensation (ANC) is a Processing Module that allows the level of zone outputs to track the ambient noise level, monitored through a microphone and microphone input. This feature is particularly well-suited to applications such as retail environments where the volume of the audio system can be matched automatically to the number of shoppers and their associated noise level.

AutoWarmth - SC 32 / SC 64



AutoWarmth® is used to compensate for the natural loss in low frequency sensitivity at lower volumes. Based on the Fletcher-Munson Equal Loudness Curves this psychoacoustic algorithm provides automatic bass compensation dependant on signal level. When the signal level is lowered, AutoWarmth provides a non-linear expansion of bass frequencies match the natural loss on low frequency response of the human ear.



On/Off button - Turns the AutoWarmth Processing Module On and Off; when in the Off position, the signal path bypasses this algorithm.

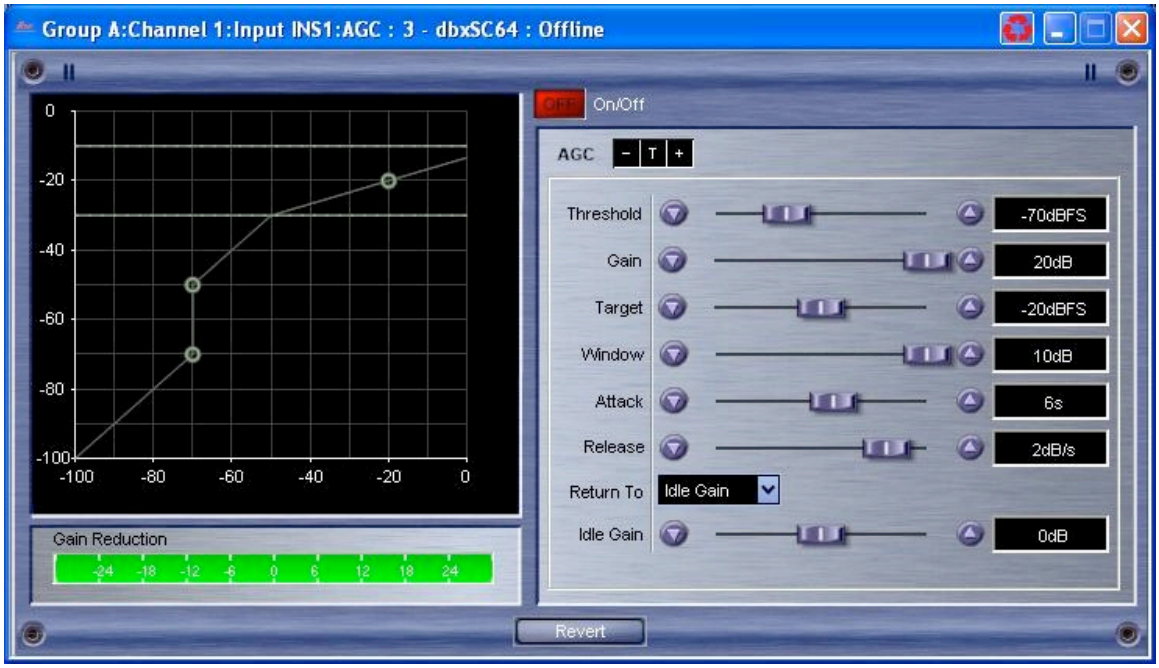
Threshold fader - This fader changes the level at which the Auto-Warmth starts to apply Automatic Bass Compensation. Once the signal drops below this threshold level the algorithm begins boosting the bass frequencies.

Amount Fader - This is the ratio of Auto-Warmth to be applied to the sound. For example, if set at 1:1 the Auto-Warmth follows the Fletcher Munsen Curves; if the Ratio is higher than 1:1 then more bass will be boosted.

Auto Gain Control - SC 32 / SC 64



Automatic Gain Control - The AGC is used to keep the average level of a signal at a constant level. High level signals are reduced by a fast limiter to prevent distortion by clipping. The AGC Threshold meters show what region of the AGC the input signal is in, T (yellow) within the Window, A + (red) Limiter, A - (green) adding Gain



On/Off Button - The On/Off button turns the Auto Gain Control on and off; when in the Off position, the signal path bypasses this algorithm.

Threshold Fader - This fader changes the level at which the AGC recognizes a signal as a legitimate level to be increased into the AGC level Window. The Threshold also defines the lower limit of the AGC. This prevents the AGC from adding gain to low level signals or noise.

Gain Fader - This is the maximum amount of Gain to be applied to the signal after it crosses the Threshold limit in an attempt to reach the Target.

Target Fader - This is the user defined optimum signal level to be achieved and maintained.

Window Fader - This fader adjusts the size of the Window around the target. Decreasing the size of the Window maintains tighter control of the signal, while opening the Window up provides less control.

Attack Fader - This fader sets the length of time after a signal crosses the Threshold that gain or gain reduction will be applied.

Release Fader - This fader is the rate of change that will take effect after the signal level has fallen below the Threshold and will no longer be controlled by algorithm.

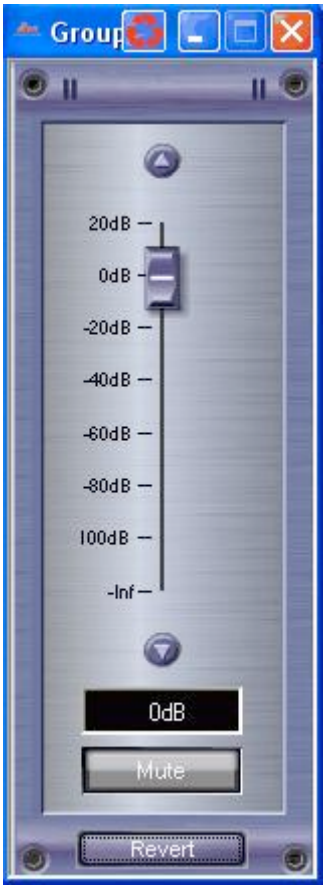
'Return To' Selection - This determines whether the AGC will return to an Idle Gain setting or a Last Gain Setting.

Idle Gain Fader - This fader determines the Idle Gain setting for when the 'Return To' selection is set to Idle Gain.

Gain - SC 32 / SC 64



Gain is used to increase the output volume of a signal.



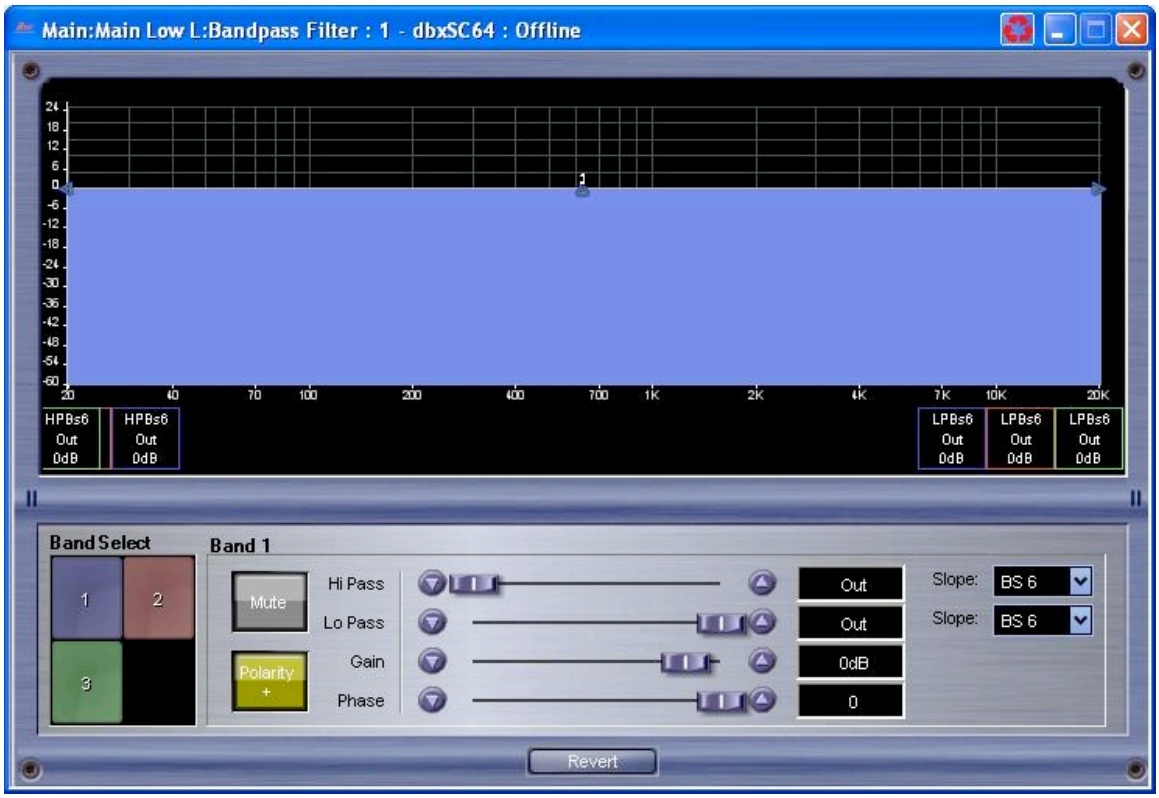
Fader - This fader increases or decreases the output volume.

Mute Button - This button mutes the signal when engaged, and un-mutes the signal when disengaged.

Output Bandpass Filter/Crossover - SC 32 / SC 64



Bandpass Filter (BPF) - The Bandpass Filter (BPF) is a collection of filters and gain elements that can be used to frequency limit the outputs. By combining a Highpass and Lowpass filter you can create a Bandpass filter that will only allow the prescribed frequency bandwidth through the filter. By placing Bandpass filters next to each other Crossovers are created that separate the high frequencies from the low frequencies so that the speaker drivers operate within their optimal range. Double clicking on the BPF icon will open the following editor, allowing the user quick access to the Bandpass Filter parameters.



Band Select 1 to (up to) 4 - The Band Select is the location where you chose the specific ‘band’ or output you want to affect.

Hi Pass Fader - This fader sets the low frequency limit for this output band. It allows the high frequencies resulting in the name High-Pass or Highpass.

Lo Pass Fader - This fader sets the high frequency limit for this output band. This filter allows the low frequency through resulting in the name Low-Pass or Lowpass.

Gain Fader - This fader sets the output level for the selected band.

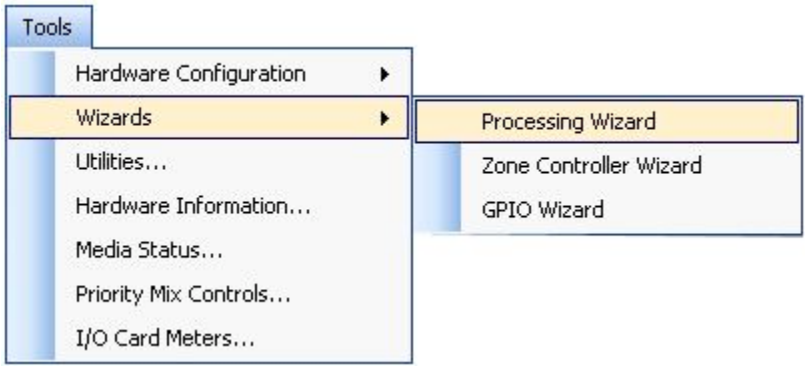
Phase Fader - The Phase fader allows the user to add additional non-linear delay by implementing an all-pass filter. This filter can delay the output by between 0 degrees and -179 degrees of Phase at the Lowpass filter frequency. This phase change is relative to the output polarity of the band. The ability of changing phase is most useful at low frequencies when neither in polarity (+) or out of polarity (-) seem to provide the optimal response.

Slope - The slope allows the user to select between different filter types and slopes to achieve the desired result. The user may choose between Butterworth (BW 6, 12, 18 and 24), Bessel (BS 6, 12, 18 and 24) and Linkwitz-Riley (LR 12 and 24) filter types.

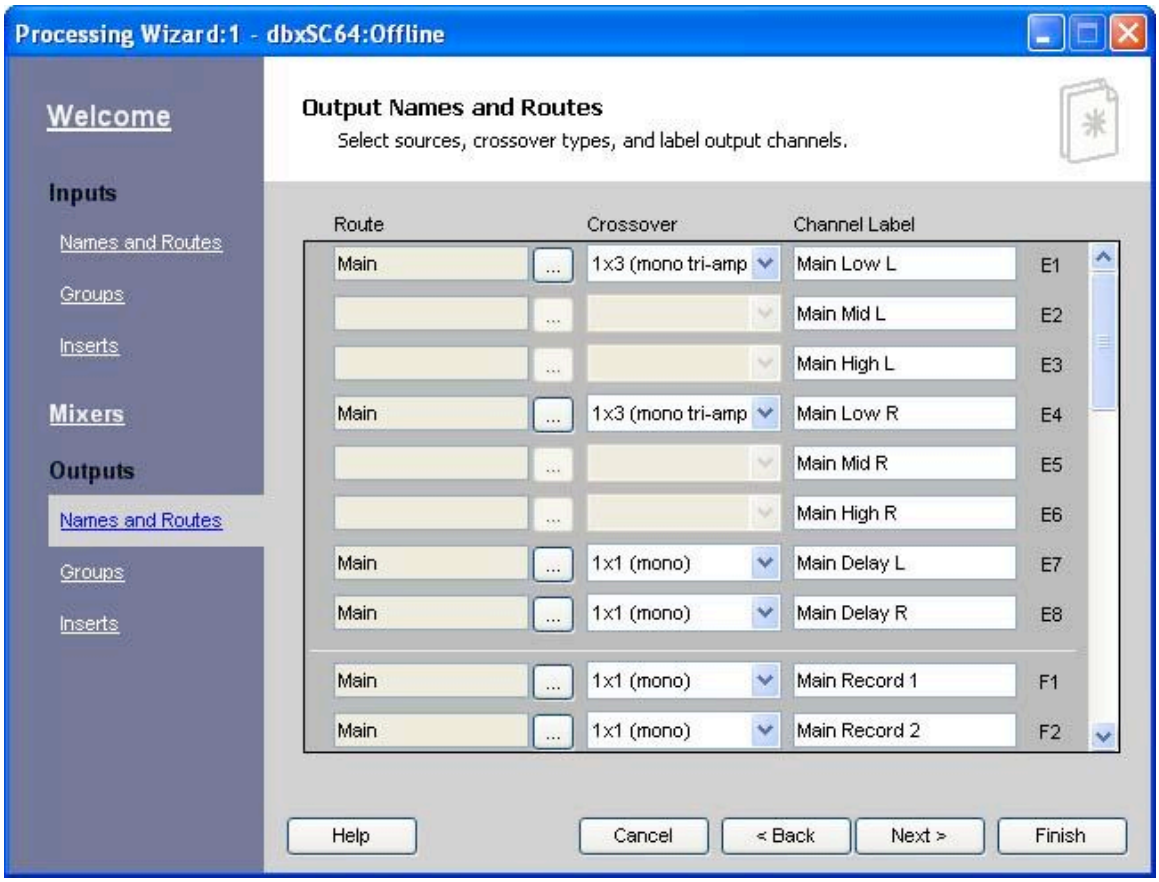
Mute Button – This button mutes the selected band when engaged, and un-mutes the band when disengaged.

Polarity (+ / -) Button - This button sets whether the output signal will have a positive or negative output polarity. Said differently, changing from positive to negative will result in a positive voltage on the input of the SC 32 / SC 64 to result in a backward movement of the speaker cone.

To configure this section, select Tools > Wizards > Processing Wizard.



Click on the Names and Routes link (under Outputs), then select from the Crossovers pull-down menus.



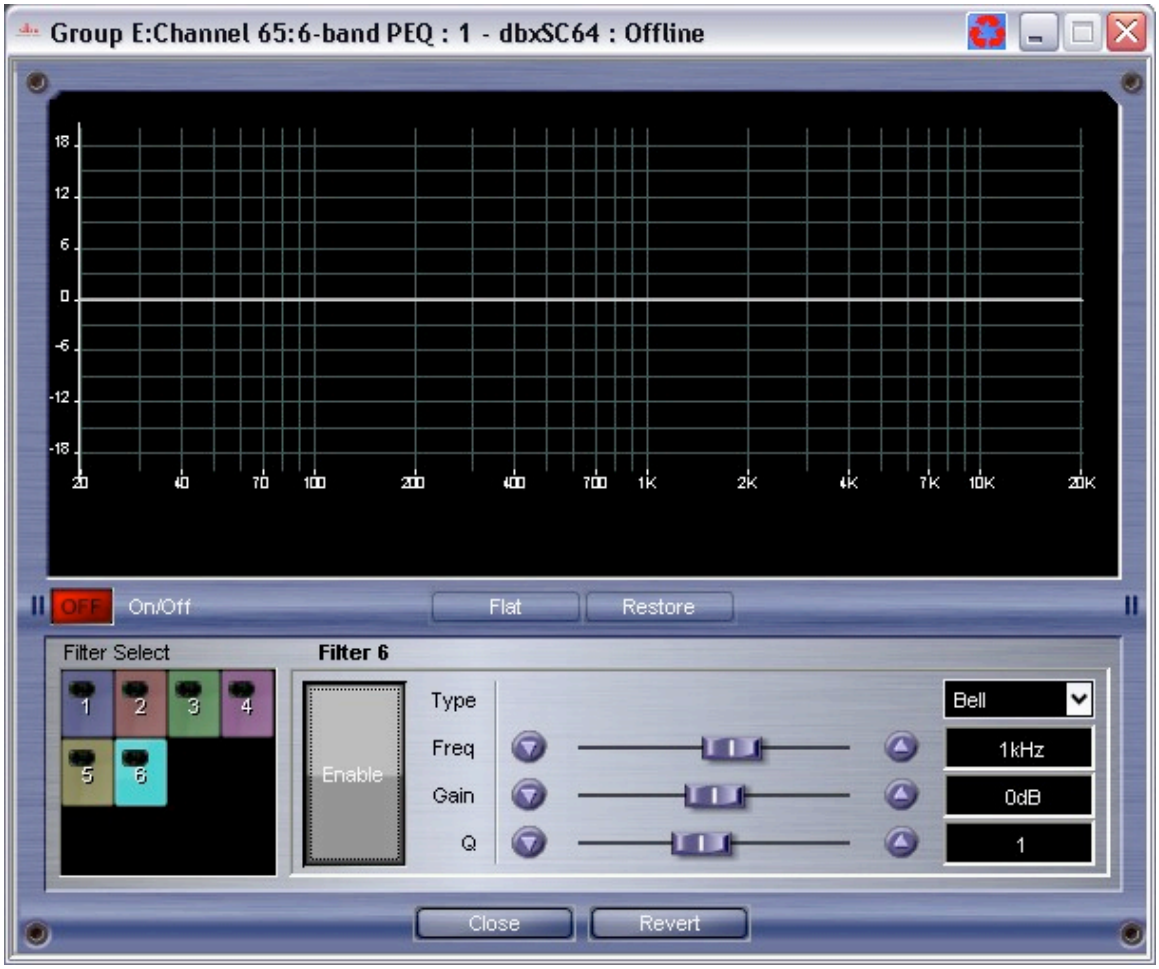
You may select from the following list the type of crossover filtering that best suits your needs.

- 1x1 mono
- 1x2 (mono bi-amp)
- 1x3 (mono tri-amp)
- 1x4 (mono quad)

Output 6-Band PEQ - SC 32 / SC 64



6-Band Parametric EQ - This 6-band Parametric Equalizer offers adjustment of all the "parameters" of the filter; these parameters include Type, Frequency, Gain, and "Q". This lets you control the amplitude of each band as well as shift the center frequency and adjust the bandwidth of the filter.



On/Off Button - Turns the 6-Band PEQ Filter Processing Module on and off; when in the Off position, the signal path bypasses this algorithm.

Flat Button - This flattens the PEQ.

Restore Button - This restores the PEQ after it has been flattened.

Filter Select 1-6 - This allows the user to select a filter to work with.

Filter Enable Button - This button provides individual on/off control of each PEQ filter.

Freq Fader - This fader allows the user to select the center frequency of a bell PEQ filter or the corner frequency of a shelf filter.

Gain Fader - This provides control of the boost or cut of the selected filter.

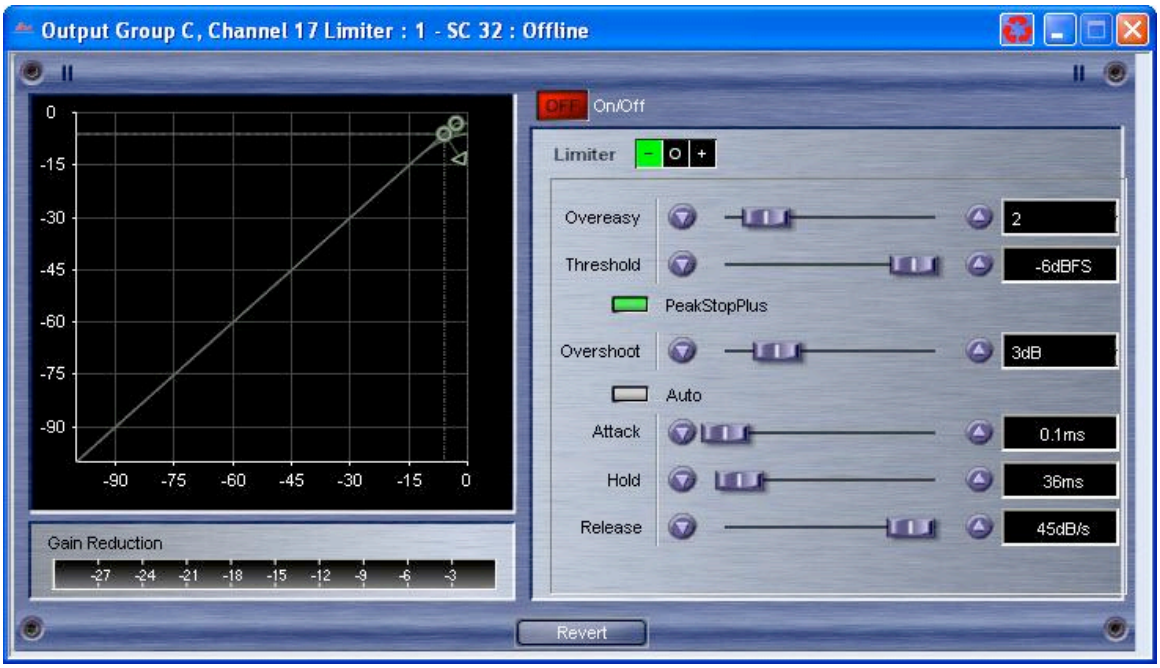
Q Fader - This provides control of the bell filter width or slope of a shelf filter.

Type Selection - This allows selection between Bell, Low Shelf and High Shelf filter types.

Output Limiter - SC 32 / SC 64



Limiter - Signal processor used to Limit the dynamic range of the signal passing through it. This is normally done through the use of a VCA (Voltage Controlled Amplifier), whose gain is a function of a control voltage applied to it.



/

On/Off Button - Turns the Limiter Processing Module on and off; when in the Off position, the signal path bypasses this algorithm.

OverEasy Fader - OverEasy is a soft-knee smoothing that occurs in the transition about the Limiter threshold. The higher the OverEasy number, the greater the smoothing.

Threshold Fader - The threshold is the signal level at which the Limiter starts to reduce the gain. If the Threshold is set to -10 dBFS, then any signal larger than -10 dBFS will be limited while any signal lower than -10dBFS is left at the original level. Limiting is used differently from compression, in that it typically is used to provide system protection. No signal level above the threshold will be passed without regard to increase above the threshold.

PeakStopPlus® On/Off - The first stage of PeakStopPlus is the Instantaneous Transient Clamp™ which clamps the signal with a soft logarithmic clamp function. This logarithmic function ensures that the signal will not exceed the level set by the PeakStopPlus Overshoot control by more than the Overshoot amount, and that it will not introduce harsh artifacts. The second stage is a unique program limiter featuring Intelligent Predictive Limiting™. Its function is to monitor the input signal and intelligently predict the amount of gain reduction needed to keep the output signal below the ceiling set by the Instantaneous Transient Clamp™.

Overshoot 2 dB - 6 dB - This parameter sets the amount of overshoot for the Instantaneous Transient Clamp™.

Auto Button On/Off - When Auto mode is on, this insert dynamically sets the Attack, Hold, and Release times for the signal. The Auto mode constantly adjusts these parameters in real time for optimum performance from the Limiter. You will find that for most applications, not only is using the Auto mode faster and easier but by letting the Limiter constantly tweak these parameters, the outcome will sound better.

Attack Fader - Attack is how fast the Limiter starts to reduce the gain after the signal crosses the Threshold. Fast Attack is useful when dealing with very fast transients. The Attack control is not active when in Auto mode.

Hold Fader - Hold is the amount of time the limiter remains in gain reduction after the signal has dropped below the threshold. A longer hold time is useful in smoothing out the sound when limiting several fast peaks that are fairly close together in time. The hold control is not active while in auto mode.

Release Fader - Release is how fast the signal comes out of compression. The release is in dB per second. For example, if release is set to 5 dB /sec, and the signal is at 10dB of gain reduction, the Release time is 2 seconds. Having a Release time that is either too fast or too slow for the signal can result in audible artifacts called 'pumping' or 'breathing'. This can cause volume drops in your signal that may not be desired. The Release control is not active while in Auto mode.

Output Delay - SC 32 / SC 64



Delay - Processing circuit used to delay one or more of the output signals by a controllable amount. This feature is used to correct for loudspeaker drivers that are mounted such that their points of apparent sound origin (not necessarily their voice coils) are not physically aligned.



On/Off Button - Each input has a delay On/Off button for the channel delay.

Delay Time Fader - This fader defines the delay time to be used either in seconds, feet or meters.

Creating Panel Presets - SC 32 / SC 64

A Panel Preset is a preset that recalls the state of one or more parameters on a single custom control panel. It is a snapshot of the values that are set on the panel.

A Panel Preset can manage multiple parameters from multiple devices.

Panel Presets are saved, recalled, and deleted with the Panel Preset Bar.

They are identified with a panel number and name.

A Panel Preset saves the current values and control parameters on a custom control panel; when additional parameters are added or values are changed, the panel preset must be saved again to include them.

Scheduling - SC 32 / SC 64

The scheduler allows different types of events to be scheduled for specific times. These events recall information or perform a function either in the System Architect software or on the SC devices themselves. The events that can be scheduled include device presets, venue recalls and panel presets.

See **Scheduler** in System Architect Help.

Wiring

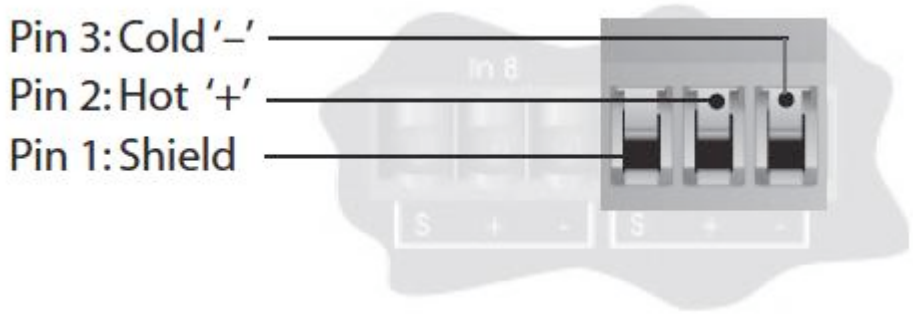
Wiring - SC 32 / SC 64

Audio Cable Wiring

All audio and control connections to the SC 64/ SC 32 are via 12 terminal female Phoenix Combicon-style 3.5mm connectors, which are supplied for making these connections.

Audio Input and Output Wiring Convention

Balanced wiring - The convention for balanced wiring (2-wire plus shield) is:



Unbalanced wiring - The convention for unbalanced wiring to the inputs (1-wire plus shield) is:



Control Inputs

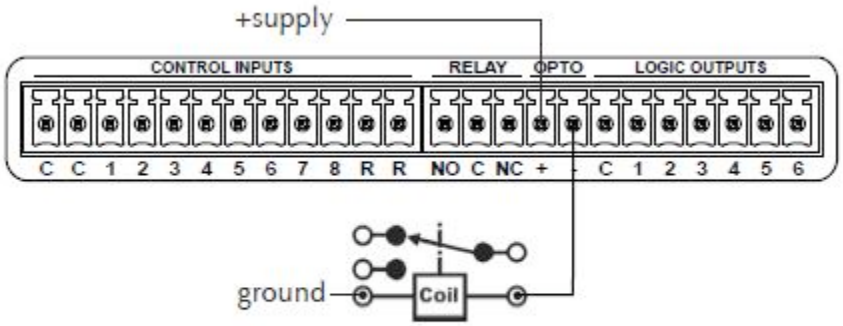
Used to connect contact closures. There are two common (ground) connections, labeled "C" to the left of the eight CONTROL INPUTS, and two reference voltage outputs, labeled "R" to the right of the eight CONTROL INPUTS.

Relay Contacts

Supports control of a voltage source and load that is AC, or supports control of a voltage source and load that is higher-current DC than is supported by the logic outputs. A normally open circuit or a normally closed circuit is available.

OPTO Output

In addition to the six standard logic outputs, there is an isolated output, which fails safe (open circuit) if the unit becomes faulty.



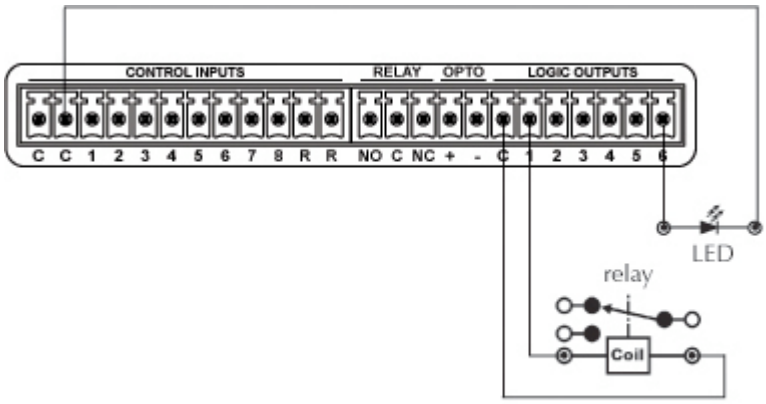
OPTO Output

Logic Outputs

Used to connect 'tally' indicator LEDs or relays. There are six standard LOGIC OUTPUTS which produce 0V or +5V DC via an internal 440 Ohm resistor and one internally connected common (ground) connection C.

An LED connected between one output (Anode, A) and common (Cathode, K) will illuminate when the logic output is activated, without requiring any external current limiting resistor. A high sensitivity relay (such as a reed

relay) may be driven by connecting four outputs in parallel. This arrangement will develop 4V across a 500-Ohm coil, providing that all four outputs are made logic 1 simultaneously.



Logic Outputs

Ethernet - SC 32 / SC 64

Zone Controller Cat5 Cable

The Zone Controllers may use standard Cat5 Cable. The pin configuration is shown below. The link buss cable uses the same straight through cable configuration as the Zone Controllers.

Cable Specification: EIA/TIA 568A Standard (pin to pin) 24 AWG wire

RJ-45 (8-Position)		RJ-45 (8-Position)	
1	White/Green	1	-VREF
2	Green	2	-Dip 1
3	White/Orange	3	-Dip 2
4	Blue	4	-Dip 3
5	White/Blue	5	-Dip 4
6	Orange	6	-Dip 5
7	White/Brown	7	-Dip 6
8	Brown	8	-GND

Zone Controllers - SC 32 / SC 64

Zone Controller Installation

The installation of the Zone Controllers MUST be accomplished with the use of cable which is rated VW-1 or higher. Common NEC designations which meet this rating include: CMP, CMR, CMG, CM and CMX.

ZC-1 - The ZC-1 is a programmable zone controller that allows input or output volume level control from a wall panel.

ZC-2 - The ZC-2 is a programmable zone controller that allows input or output volume level and mute control from a wall panel.

ZC-3 - The ZC-3 allows wall panel routing and Actions selection for the SC devices.

ZC-4 - The ZC-4 provides contact closure routing and Actions selection for room combining or fire safety applications.

ZC-Fire - The ZC-Fire is the interface to generic fire alarm relays. When fire alarm activates, the general purpose relay can typically be programmed to close if normally open or vices-versa. The ZC-fire interface unit monitors the state of the relay (n.o. or n.c.) and upon the state of change, notifies the SC 32/64, which then mutes its outputs.

ZC-6 - The ZC-6 is a push-button up and down input or output volume controller.

ZC-7 - The ZC-7 allows Actions selection for the SC devices.

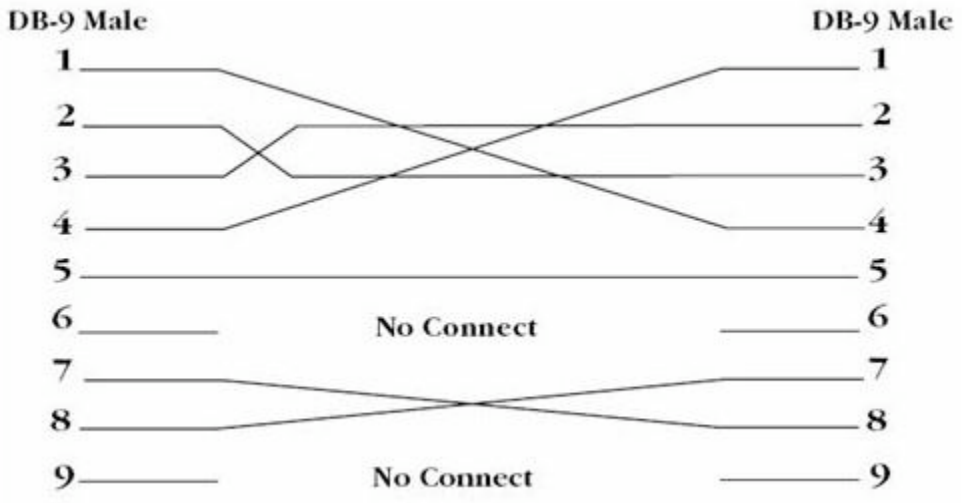
ZC-8 - The ZC-8 is used for a combination of input or output volume up/down, and four position source/program select.

ZC-9 - The ZC-9 allows wall panel routing and Actions selection for the SC devices.

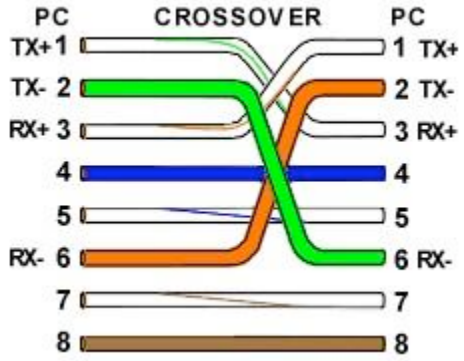
ZC-BOB - The ZC-BOB allows parallel or home run cabling of the Zone Controllers.

RS-232 - SC 32 / SC 64

The serial (RS-232) connection to the SC 32 / SC 64 is made through a Null Modem cable. A straight-through serial (RS-232) cable will not work.



Network connections made directly from the SC 32 / SC 64 must be made using a crossover cable.



Zone Controller Distance Limitations - SC 32 / SC 64

All Zone Controllers can be wired serially or in parallel. As length increases, the total cable distance decreases. One controller can be wired with up to 1000 feet of cable, three controllers in series at 600 feet and six controllers in series at 300 feet total cable length.

Diagram A

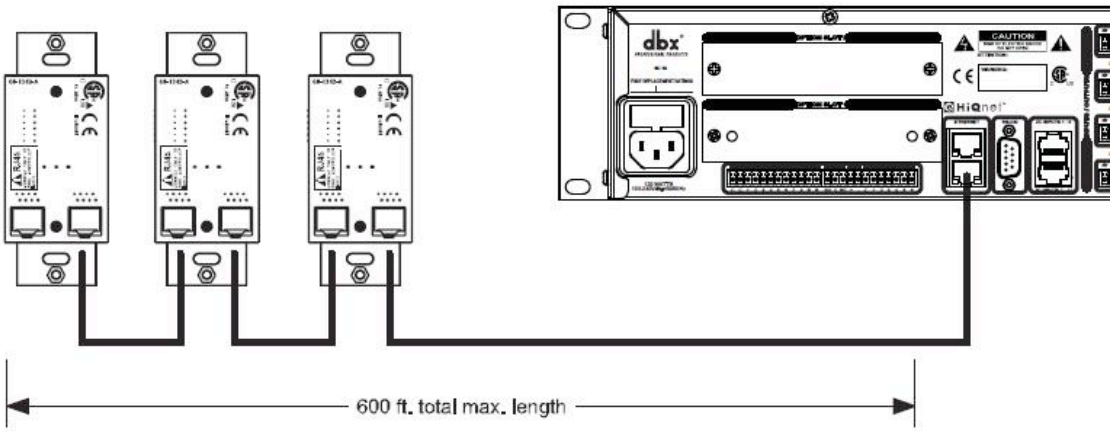
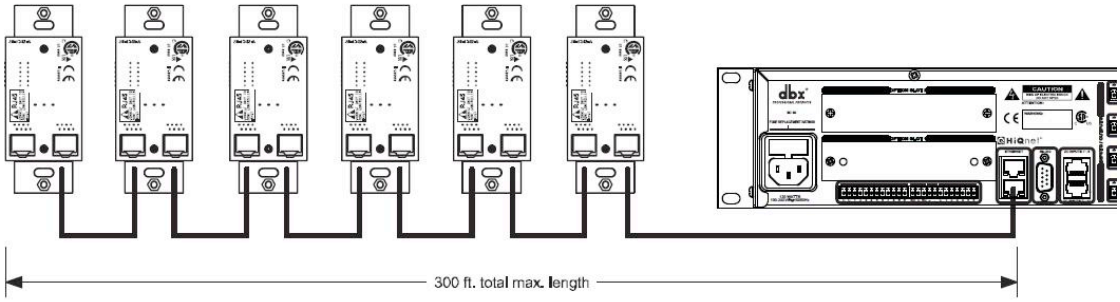
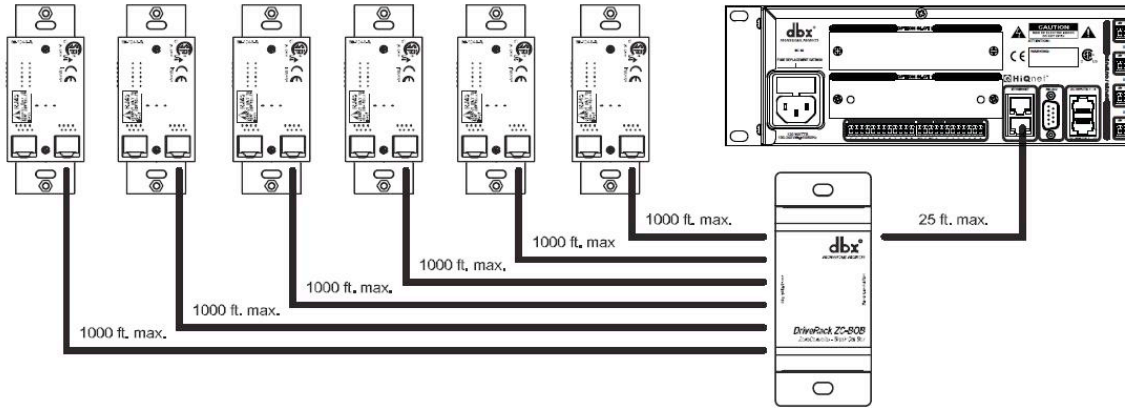


Diagram B



If longer cable lengths are required then the use of a ZC-BOB is available. The ZC-BOB allows you to add up to 1000 feet of cable to be run directly to a Zone Controller from each of the 6 BOB ports. (See picture below)

Diagram C


1000 ft. max.
1000 ft. max
1000 ft. max.
1000 ft. max.
1000 ft. max.
1000 ft. max.
25 ft. max.

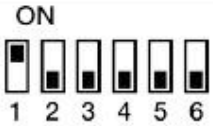
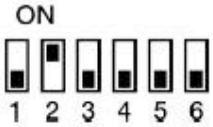
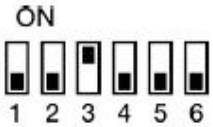
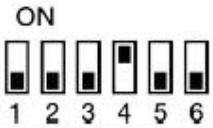
.

Zone Controller DIP Switch - SC 32 / SC 64

Zone Controller Wiring

All Zone Controllers can be wired serially or in parallel. To wire in series, each Zone Controller must have an identification number (ID) chosen using the DIP switches on the side of the controller (see diagram A). A single Zone Controller can be used to control multiple outputs. Conversely, multiple Zone Controllers can be used to control a single zone – e.g. A ZC1 and a ZC3 controlling volume and source in a single zone respectively. In every case, each Zone Controller is given a unique ID. The Zone Controllers can then be wired together and connected to the SC devices (see diagram B).

To wire the Zone Controllers in parallel, a ZC-BOB must be used. Each Zone Controller must have a unique identification or number chosen using the DIP switches on the side of the controller (see diagram A). To wire in parallel, each controller must be wired into a port of the ZC-BOB with a connecting wire going to the SC device (see diagram C).

ZC ID (1-6)	ZC ID (7-12)	DIP Switch Setting
1	7	
2	8	
3	9	
4	10	
5	11	
6	12	

To set up the ZCs, the System Architect GUI must be used. Open the GUI and click on ZC Wizard in the Tools menu. Select the type of ZC and the ID#. The ID numbers on the left side of the window correspond to the identification number set using the DIP switches on the individual zone controllers. To select ID#2 for example, simply flip the 2 switch into the on position. ID 1-6 are connected to top ZC input on the rear panel and ID 7-12 are connected to the bottom input. To create ID 7-12, add 6 to the ID # selected on the back of the ZC. For example, to get an ID# of 10, connect to the bottom ZC Input (7-12) and set the ID# to 4.