

TABLE OF CONTENTS

1.	OVERVIEW	1
2.	INSTALLATION.....	3
3.	SPECIFICATIONS.....	4
3.1.	SERIAL VIDEO INPUT	4
3.2.	SERIAL VIDEO OUTPUTS	4
3.3.	ELECTRICAL.....	4
3.4.	PHYSICAL	4
4.	STATUS LEADS	5
5.	CARD EDGE MODULE CONTROL.....	6
5.1.	CARD EDGE CONTROL	6
5.1.1.	Navigating the Card Edge	6
5.2.	CARD-EDGE MENU STRUCTURE.....	6
5.3.	SETTING THE DISPLAY ORIENTATION	6
5.4.	PRESET PARAMETERS	7
5.4.1.	Saving Presets	7
5.4.2.	Loading Presets	7
5.5.	VIDEO PARAMETERS	7
5.5.1.	Forcing a Video Standard.....	7
5.5.2.	Viewing the Input Video Standard.....	7
6.	VISTALINK® MODULE CONTROL.....	8
6.1.	WHAT IS VISTALINK®?.....	8
6.2.	GENERAL.....	9
6.3.	VIDEO CONTROL	9
6.3.1.	Selecting the Video Standard	9
6.3.2.	Viewing the Detected Video Standard	9
6.4.	AUDIO CONTROL	10
6.4.1.	C-bit Control	10
6.5.	MIXER CONTROL	10

6.5.1. Source X/Y	11
6.5.2. Gain Adjust X	12
6.5.3. Invert Enable X.....	13
6.6. PRESET CONTROL	13
6.6.1. Saving Presets	13
6.6.2. Loading Presets	13
6.7. INTELLIGAIN® CONFIGURATION	14
7. JUMPERS AND USER ADJUSTMENTS.....	15
7.1. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS.....	15
7.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES.....	15

Figures

Figure 1-1: 500IDA9-IG Block Diagram.....	2
Figure 2-1: 500IDA9-IG Rear Panel Overlay.....	3
Figure 4-1: Status LEDs	5
Figure 6-1: General Tab	9
Figure 6-2: Video Control Tab	9
Figure 6-3: Audio Control Tab	10
Figure 6-4: Mixer Control 1-4 Tab	11
Figure 6-5: Source Select Drop Down Menu.....	11
Figure 6-6: Preset Control Tab.....	14
Figure 7-1: LED and Jumper Locations.....	15

REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1.0	First Release	Feb 2011
1.1	Added information for HD and 3G versions	Mar 2011
1.1.1	Updated frame information	Jul 2014

Information contained in this manual is believed to be accurate and reliable. However, Evertz assumes no responsibility for the use thereof nor for the rights of third parties, which may be affected in any way by the use thereof. Any representations in this document concerning performance of Evertz products are for informational use only and are not warranties of future performance, either expressed or implied. The only warranty offered by Evertz in relation to this product is the Evertz standard limited warranty, stated in the sales contract or order confirmation form.

Although every attempt has been made to accurately describe the features, installation and operation of this product in this manual, no warranty is granted nor liability assumed in relation to any errors or omissions unless specifically undertaken in the Evertz sales contract or order confirmation. Information contained in this manual is periodically updated and changes will be incorporated into subsequent editions. If you encounter an error, please notify Evertz Customer Service department. Evertz reserves the right, without notice or liability, to make changes in equipment design or specifications.

This page left intentionally blank

1. OVERVIEW

The 500IDA9-IG, 500IDA9-HD-IG and 500IDA9-3G-IG (500IDA9-IG series) reclocking distribution amplifiers provides high quality distribution of facility SDI signals. These modules feature an auto-sensing equalized input which generates nine reclocked outputs and is especially useful projects where long cables runs are encountered.

Unlike other traditional DA's on the market, this module has been designed to support additional broadcast functionality such as signal monitoring, audio shuffling and loudness control. These features are standard features on this device therefore providing more value to an already high performance distribution amplifier!

The 500IDA9-IG is VistaLINK[®] capable, offering remote monitoring, control and configuration capabilities via Simple Network Management Protocol (SNMP) giving the flexibility to manage operations, including signal monitoring and module configuration from SNMP capable control systems (Manager or NMS).

This device:

- Provides nine reclocked outputs from the SD-SDI input (500IDA9-IG), SD/HD-SDI input (500IDA9-HD-IG) or SD/HD/3G input (500IDA9-3G-IG)
- Provides enhanced signal reclocking and conditioning
- Offers embedded mono audio channel shuffling
- Offers award winning IntelliGain[™] loudness control
- SNMP configuration via 500FC Evertz frame controller

The 500IDA9-IG occupies 1 card slot and can be housed in the 3RU 500FR frames which have a 16 slot capacity. The 500FC or 500FC-DA-HD frame controller is required for configuration.

Features:

- SD-SDI input (500IDA9-IG), SD/HD-SDI input (500IDA9-HD-IG) or SD/HD/3G input (500IDA9-3G-IG) with nine reclocked outputs
- Long reach cable performance
- Embedded audio channel shuffling
- ITU-R BS. 1770 Loudness control
- Input signal presence detection
- Real time VistaLINK[®] monitoring and trending
- High density approach offers 15 modules within 3RU

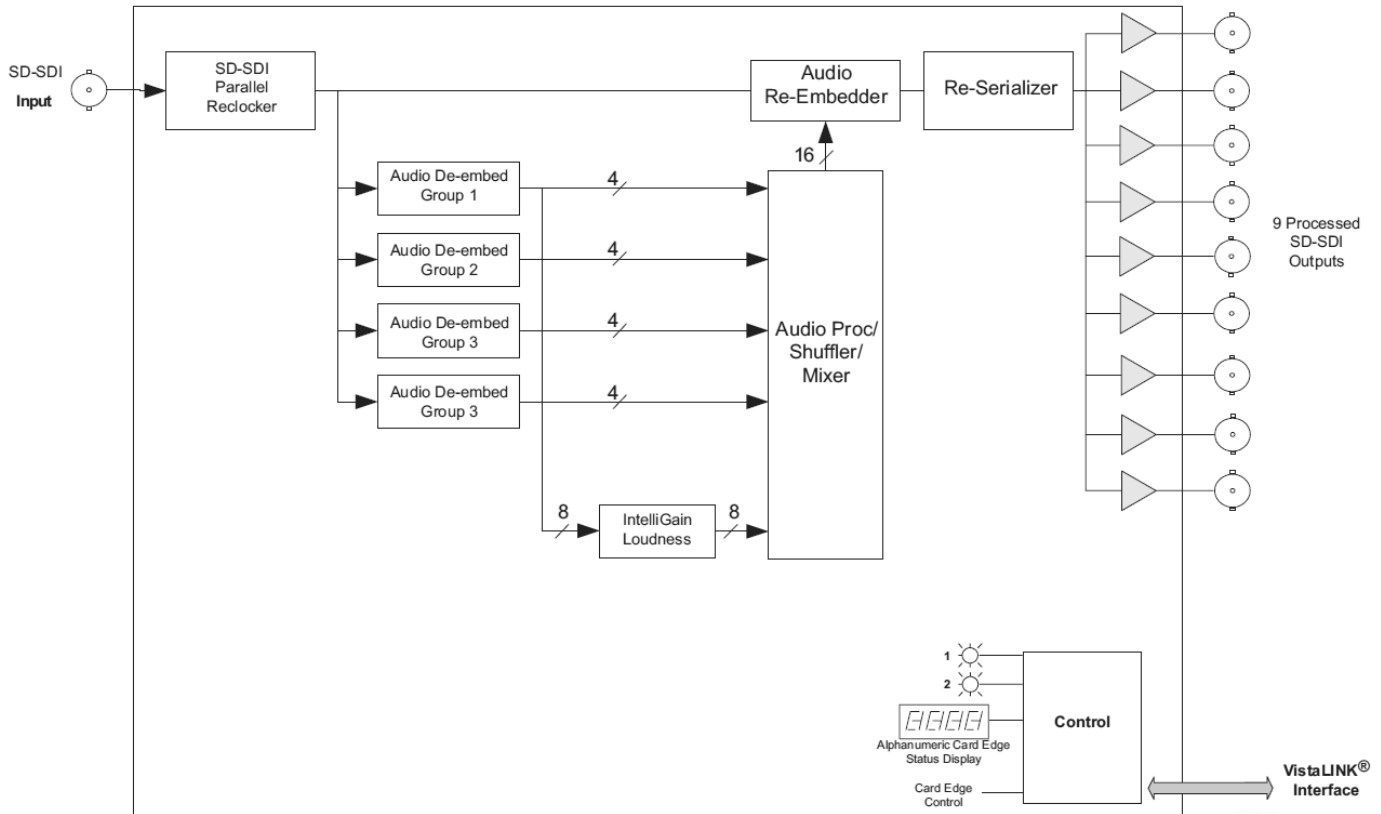


Figure 1-1: 500IDA9-IG Block Diagram

2. INSTALLATION

The 500IDA9-IG comes with a companion rear panel overlay that can be placed over the rear panel BNC connectors to identify their function. For information on inserting the module into the frame see section 3 of the 500FR chapter.

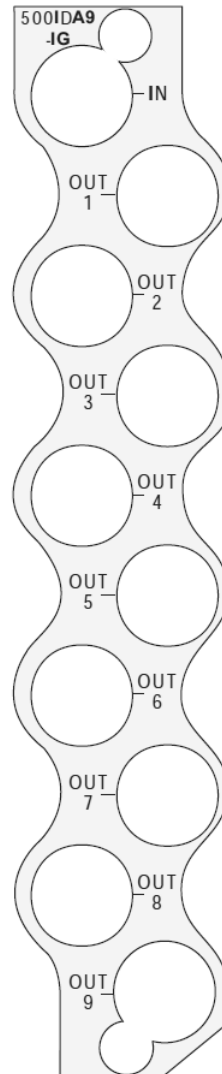


Figure 2-1: 500IDA9-IG Rear Panel Overlay

IN: Input BNC connector for 10-bit serial digital video signals compatible with 3Gb/s SMPTE 424M (-3G), 1.5Gb/sec SMPTE 292M (-HD), or 270Mb/s SMPTE 259M-C (525i/59.94 or 625i/50).

OUT 1 to 9: Output BNC connector for reclocked outputs of the input signal.

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standard: Auto-detects standard 3Gb/s SMPTE 424M (-3G), 1.5Gb/sec SMPTE 292M (-HD), or 270Mb/s SMPTE 259M-C (525i/59.94 or 625i/50)
Connector: 1 BNC per IEC 61169-8 Annex A
Input Equalization: Automatic to 100m @ 3Gb/s, 140m @ 1.5Gb/s & 350m @ 270Mb/s (Belden 1694A cable)
Return Loss: > 20dB up to 270 Mb/s
> 15dB up to 1.5 Gb/s
> 10dB up to 3 Gb/s

3.2. SERIAL VIDEO OUTPUTS

Standard: Same as input
Number of Outputs: 9
Connector: BNC per IEC 61169-8 Annex A
Signal Level: 800mV nominal

3.3. ELECTRICAL

Voltage: +12V DC
Power: 9W
EMI/RFI: Complies with FCC Part 15 Class A
EU EMC Directive

3.4. PHYSICAL

Number of Slots: 1

4. STATUS LEDS

The 500IDA9 has eight LED Status indicators on the front card edge to show operational status of the card at a glance. Figure 7-1 shows the location of the LEDs.

Two large Module Status LEDs on the front of the board indicate the general health of the module:

LOCAL FAULT: This Red LED indicates poor module health and will be On during the absence of a valid input signal or if a local input power fault exists (i.e.: a blown fuse). The LOCAL FAULT indication can also be reported to the frame through the FRAME STATUS jumper.

MODULE OK: This Green LED indicates good module health. It will be On when a valid input signal is present, and board power is good.

There are 18 small LEDs that indicate additional status of the module. Figure 4-1 identifies the function of some of the status LEDs present on the board.

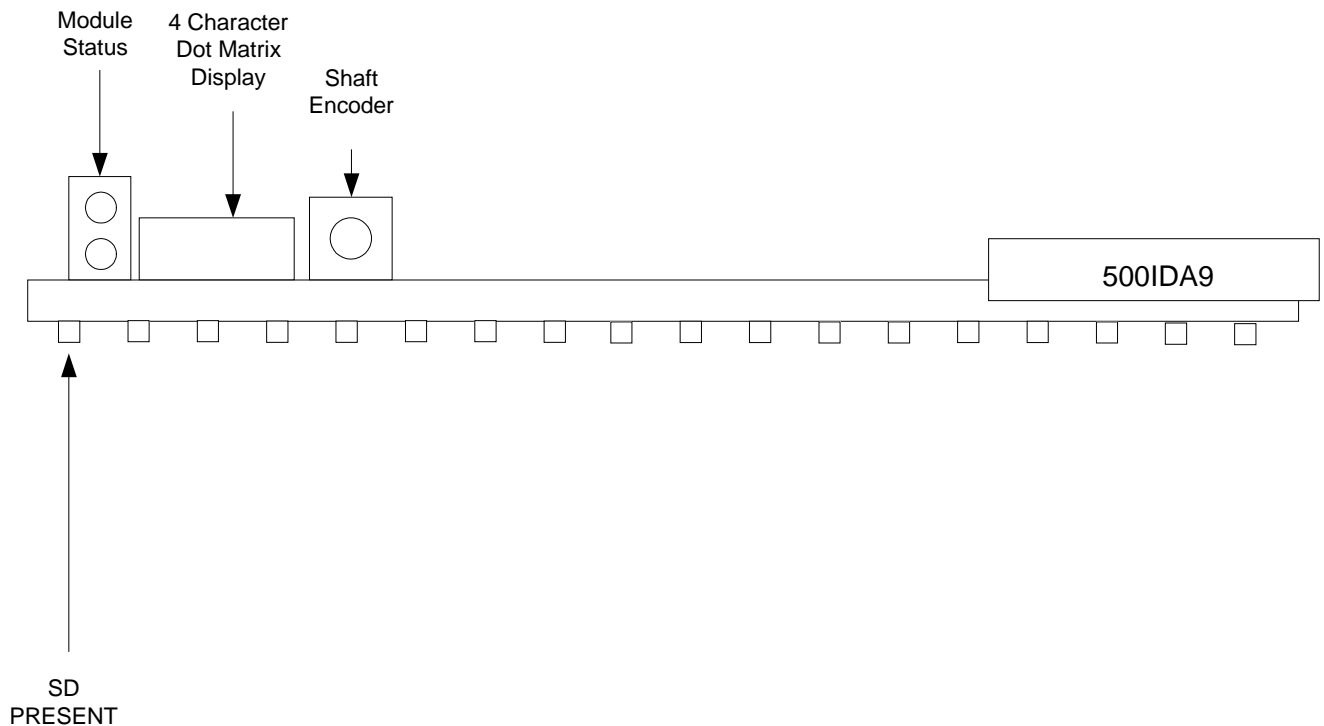


Figure 4-1: Status LEDs

5. CARD EDGE MODULE CONTROL

5.1. CARD EDGE CONTROL

The 500IDA9-IG is equipped with a push-button shaft encoder and a four character dot matrix display to control various functions on the card. The push-button shaft encoder is used to navigate through a menu system to set and monitor various parameters for the module. When not in the menu system, the four character dot matrix display rotates through the module name, firmware version, and IP address.

5.1.1. Navigating the Card Edge

You can use the push-button shaft encoder to move up and down the list of available parameters to adjust. To adjust any parameter, use the shaft encoder to move up or down to the desired parameter and then press the shaft encoder in. If the parameter is a numerical value, the number will increase if you rotate the shaft encoder clockwise and decrease if you rotate the shaft encoder counter-clockwise. If the parameter contains a list of options, you can cycle through the list by rotating the shaft encoder in either direction. The parameter values are changed as you cycle through the list.

When you have stopped at the desired value, depress the shaft encoder. This will return you to the parameter, select the menu item that you are setting (the display shows the parameter name you were setting). To change another parameter, rotate the shaft encoder to select other parameters. If neither the toggle switch nor pushbutton is operated for several seconds the card edge control will exit the menu system and return to an idle state.

Throughout the descriptions of the Menu items, default values are shown with bolded text.

5.2. CARD-EDGE MENU STRUCTURE

The following is a brief description of the top level of the menu tree that appears when you enter the ON screen menu. Selecting one of these items will take you down into the next menu level to set the value of that parameter.

DPSL	Sets the orientation of the four-digit LED display
PRST	Allows the saving or recalling of presets
VID	Displays or sets the operating video standard
QUIT	Exits the menu

5.3. SETTING THE DISPLAY ORIENTATION

The **DSPL** parameter controls the display orientation of the four digit LED display.

HORZ	The display will be shown horizontally (ideal when installed in a 1RU or standalone frame).
VERT	The display will be shown vertically (ideal when installed in a 3RU frame).

5.4. PRESET PARAMETERS

The **PRST** menu option enters into a selection menu to either recall or save a preset.

SAVE	Menu option to save current module state to a selected preset.
LOAD	Menu option to load to the module a selected preset.

5.4.1. Saving Presets

The **SAVE** parameter will save the current module settings to a selected preset number. The user can save the settings by assigning a preset number (ie. Preset 02), which can later be recalled using the *load* parameter.

01-10	Selects the preset to save the current module settings to.
--------------	--

5.4.2. Loading Presets

The **LOAD** parameter will load the settings saved in the preset to the current module settings. The user can recall and load a saved preset by selecting the desired preset number (i.e. Preset 02).

FACT	Loads the factory default settings into the module.
01-10	Selects the preset from which to load settings from.

5.5. VIDEO PARAMETERS

The **VID** menu option enters into a selection menu to view the current video standard or set a forced video standard.

SELV	Menu option to select a forced video standard
DETV	Menu option to view the current detected video standard

5.5.1. Forcing a Video Standard

The **SELV** parameter will force the module into operating with a specific video standard. It is recommended to leave this setting in AUTO mode.

AUTO
270M
1.5G
3G A
3G B

5.5.2. Viewing the Input Video Standard

The **DETV** parameter will display the currently detected input video standard. It will display one of the standards listed in section 5.5.1 if present, otherwise it will display NONE.

6. VISTALINK[®] MODULE CONTROL

This section describes the VistaLINK[®] control and monitoring available on the 500IDA9-IG.

6.1. WHAT IS VISTALINK[®]?

VistaLINK[®] is Evertz's remote monitoring and configuration platform which operates over an Ethernet network using Simple Network Management Protocol (SNMP). SNMP is a standard computer network protocol that enables different devices sharing the same network to communicate with each other. VistaLINK[®] provides centralized alarm management, which monitors, reports, and logs all incoming alarm events and dispatches alerts to all the VLPro Clients connected to the server. Card configuration through VistaLINK[®] PRO can be performed on an individual or multi-card basis using simple copy and paste routines, which reduces the time to configure each module separately. Finally, VistaLINK[®] enables the user to configure devices in the network from a central station and receive feedback that the configuration has been carried out.

There are 3 components of SNMP:

1. An SNMP manager also known as a Network Management System (NMS) is a computer running special software that communicates with the devices in the network. Evertz VistaLINK[®] Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz VistaLINK[®] enabled products.
2. Managed devices, each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz VistaLINK[®] enabled 500series modules reside in the 3RU 500FR MultiFrame and communicate with the manager via the 500FC VistaLINK[®] frame controller module, which serves as the Agent.
3. A virtual database known as the Management Information Base (MIB) lists all the variables being monitored, which both the Manager and Agent understand. Please contact Evertz for further information about obtaining a copy of the MIB for interfacing to a third party Manager/NMS.

For more information on connecting and configuring the VistaLINK[®] network, see the 500FC Frame Controller chapter.

6.2. GENERAL

The **General** tab shows miscellaneous parameters of the module.

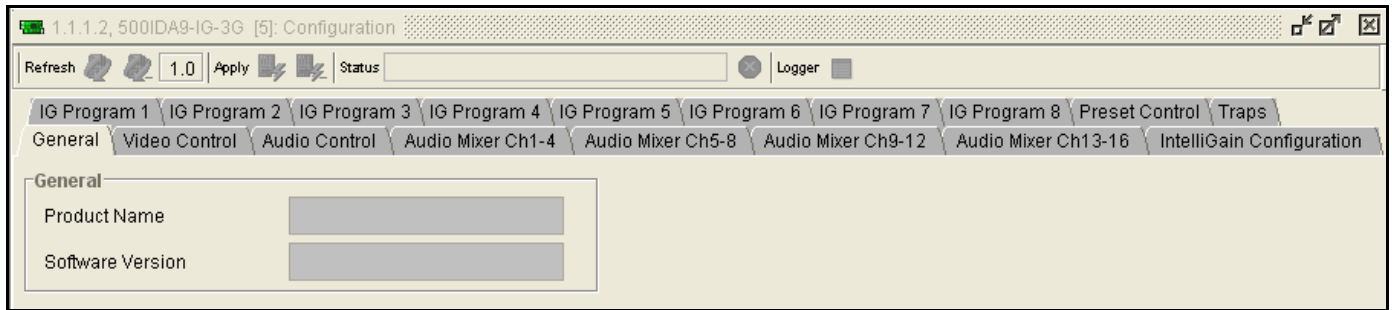


Figure 6-1: General Tab

Product Name: Indicates the product model number of the card (including installed options).

Software Version: Indicates the currently installed firmware version.

6.3. VIDEO CONTROL

The **Video Control** tab is used to force a video standard and read back the currently detected video standard on the input.

6.3.1. Selecting the Video Standard

The **Select Video Standard** drop down menu provides the following options:

- Auto
- 270M
- 1.5G
- 3G A
- 3G B

6.3.2. Viewing the Detected Video Standard

The **Detected Video Standard** field displays the currently detected input video standard.

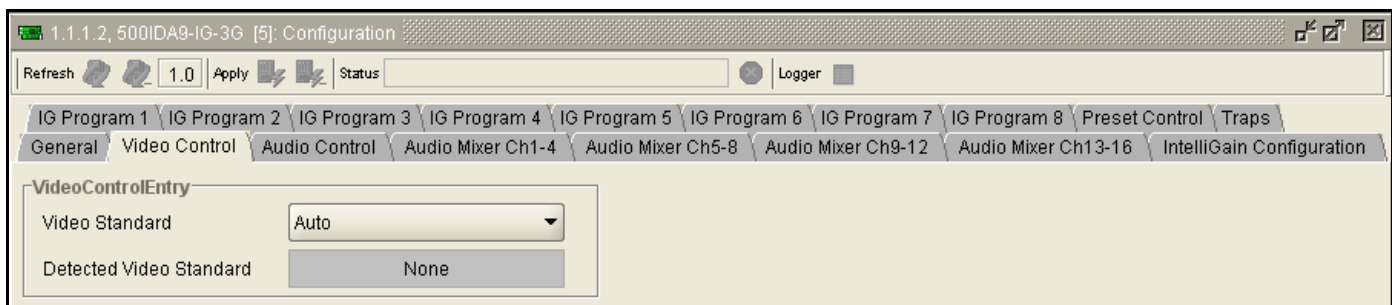


Figure 6-2: Video Control Tab

6.4. AUDIO CONTROL

The **Audio Control** tab is used to set the C-bit state in the output video's embedded audio.

6.4.1. C-bit Control

The **C-bit Control** drop down menu provides the following two options:

- **Preserve**, which will pass through the state of the bit.
- **Replace**, which will set the state of the bit to Active.

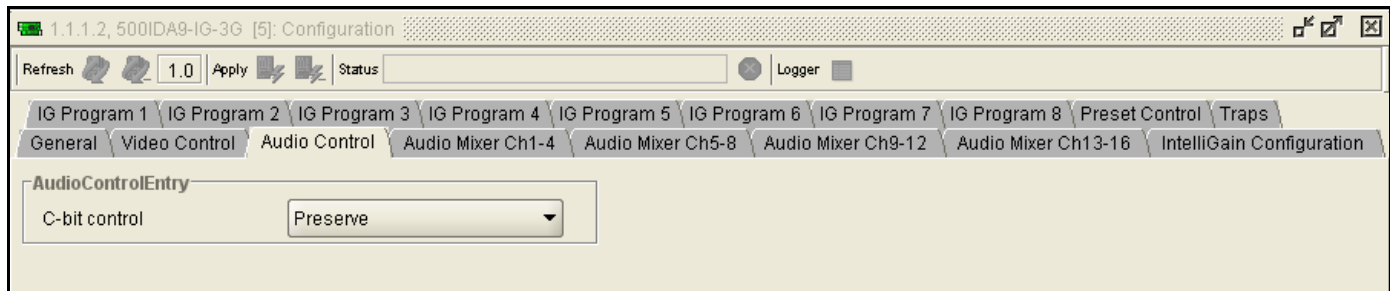


Figure 6-3: Audio Control Tab

6.5. MIXER CONTROL

The Mixer Control tabs control the output audio. There are 16 individual channel mixers to control. These Output Channel mixers perform audio inversion, audio gain adjustment and audio channel swapping for each of the 16 output audio channels. Using the X and Y inputs of each Output Channel Mixer an additional level of mono-mixing is also available for each channel of output audio.

For the sake of brevity, only the *Mixer Control Ch1-4* control tab will be discussed in this manual. Control tabs for *Mixer Control Ch5-8*, *Mixer Control Ch9-12* and *Mixer Control Ch13-16* are identical in their operation. Furthermore, the controls for Channel 1 will be described in detail, as the controls for Channel 2, Channel 3 and Channel 4 operate in an identical fashion.

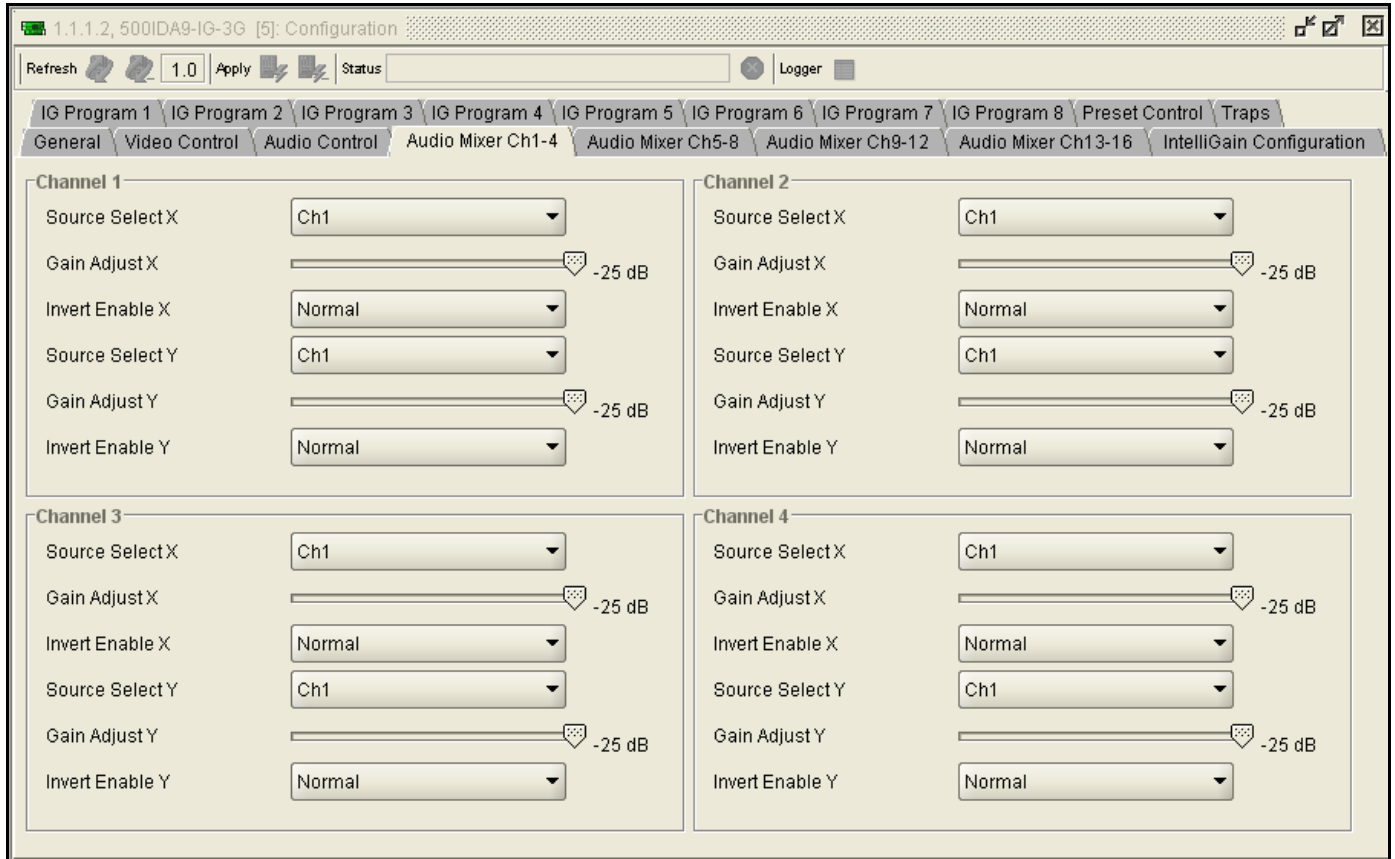


Figure 6-4: Mixer Control 1-4 Tab

6.5.1. Source X/Y

The **Source X/Y** control enables the user to route one of the 16 internally processed input audio channels to the X/Y input of the Channel 1 mixer. The user can select the channel source by selecting the desired channel from the *Source X/Y* drop down menu as shown in Figure 6-5.

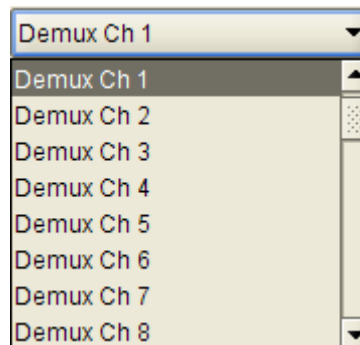


Figure 6-5: Source Select Drop Down Menu

The full set of available channels is listed below:

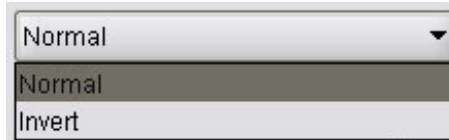
Source X/Y Input	
	Demux Ch 1
	Demux Ch 2
	Demux Ch 3
	Demux Ch 4
	Demux Ch 5
	Demux Ch 6
	Demux Ch 7
	Demux Ch 8
	Demux Ch 9
	Demux Ch 10
	Demux Ch 11
	Demux Ch 12
	Demux Ch 13
	Demux Ch 14
	Demux Ch 15
	Demux Ch 16
	Demux Mono Mix Ch 1 and 2
	Demux Mono Mix Ch 3 and 4
	Demux Mono Mix Ch 5 and 6
	Demux Mono Mix Ch 7 and 8
	Demux Mono Mix Ch 9 and 10
	Demux Mono Mix Ch 11 and 12
	Demux Mono Mix Ch 13 and 14
	Demux Mono Mix Ch 15 and 16
	IntelliGain Ch 1
	IntelliGain Ch 2
	IntelliGain Ch 3
	IntelliGain Ch 4
	IntelliGain Ch 5
	IntelliGain Ch 6
	IntelliGain Ch 7
	IntelliGain Ch 8
	Mute

6.5.2. Gain Adjust X

The **Gain Adjust X/Y** control enables the user to set the value of the gain for the selected source. The user can adjust the gain of the selected source by moving the associate slider control left to decrease the value or right to increase the value. The value range for the gain adjustments is -24 dB to +24 dB. Gain is incremented or decremented in 0.1 dB steps.

6.5.3. Invert Enable X

The **Invert Enable X** enables the user to invert the phase or pass the selected audio channel. The *Invert Enable X/Y* drop down menu appears as follows:



Normal	Passes the audio channel through with no processing.
Invert	Inverts the phase of the audio channel.

6.6. PRESET CONTROL

The **Preset Control** tab allows the saving and recalling of presets.

6.6.1. Saving Presets

The **Save Preset** drop down menu will save the current module settings to a selected preset number. The user can save the settings by assigning a preset number (i.e. Preset 02), which can later be recalled using the *load* parameter.

01-10	Selects the preset to save the current module settings to.
CANCEL	Cancels the selection.

6.6.2. Loading Presets

The **Load Preset** drop down menu will load the settings saved in the preset to the current module settings. The user can recall and load a saved preset by selecting the desired preset number (i.e. Preset 02).

FACT	Loads the factory default settings into the module.
01-10	Selects the preset from which to load settings from.
Cancel	Cancels the selection.

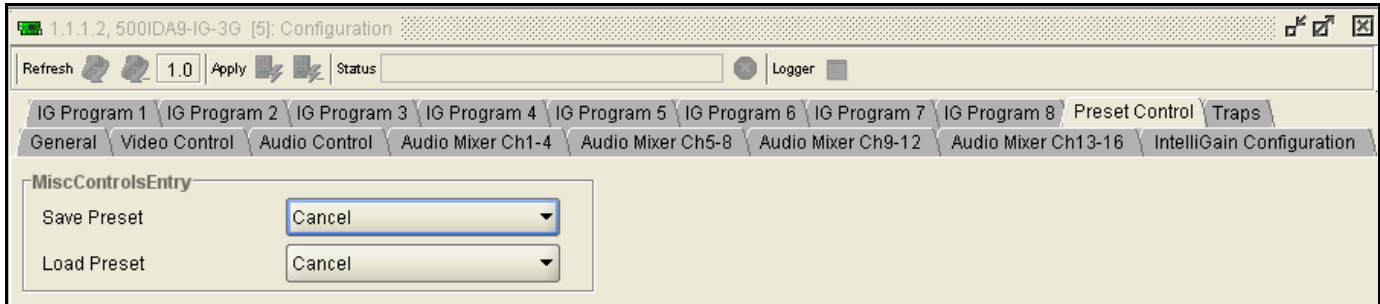


Figure 6-6: Preset Control Tab

6.7. INTELLIGAIN® CONFIGURATION

Please refer to the IntelliGain® User Manual (version 1v1) for instructions on configuring IntelliGain®.

7. JUMPERS AND USER ADJUSTMENTS

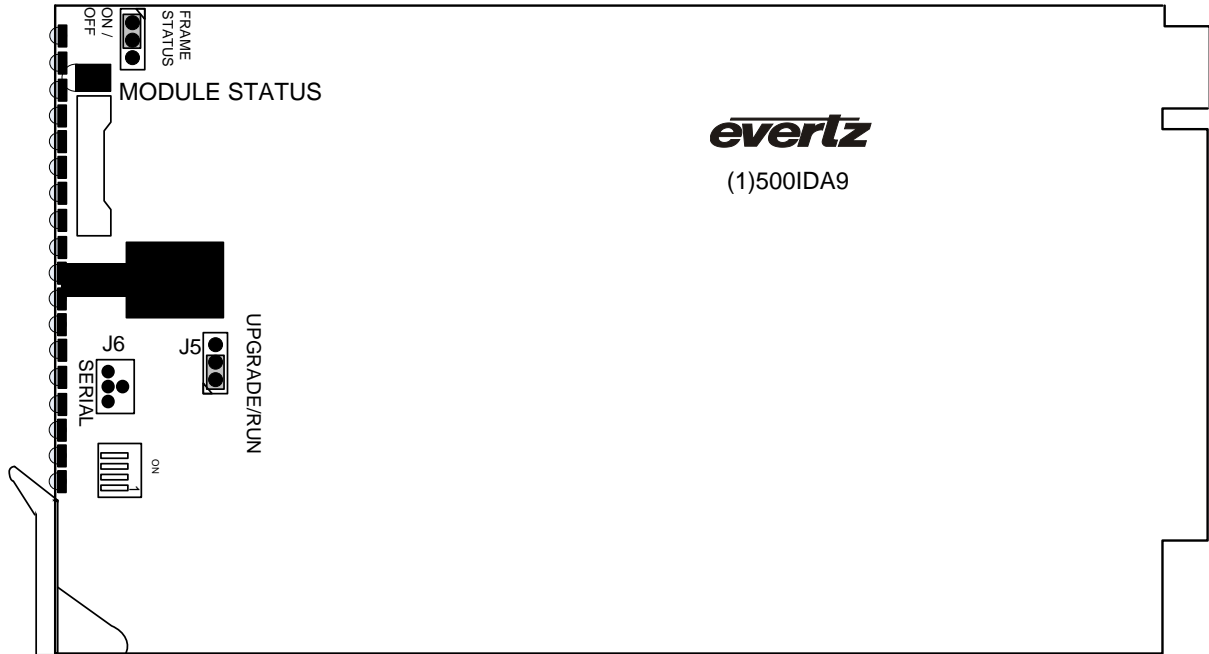


Figure 7-1: LED and Jumper Locations

7.1. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS

The FRAME STATUS jumper J3, located at the front of the module determines whether local faults (as shown by the Local Fault indicator) will be connected to the 500/500 series frame's global status bus.

FRAME STATUS: To monitor faults on this module with the frame status indicators (on the power supply's FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position.

When this jumper is installed in the Off position local faults on this module will not be monitored.

7.2. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

UPGRADE: The UPGRADE jumper J5 located at the front of the module near the card ejector, is used when firmware upgrades are being done to the module. For normal operation it should be installed in the *RUN* position. See the *Upgrading Firmware* section in the front of the binder for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move Jumper J16 into the *UPGRADE* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto header J6. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* section in the front of the binder. Once the upgrade is complete, remove the module from the frame, move J5 to the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

This page left intentionally blank