



Pyxis 3U with Nebula Controller

Getting Started Guide

This leaflet is designed for quick reference only; the user should refer to the User Guides for both Pyxis and Nebula for detailed information.

Nebula controllers are fitted to 2449 Pyxis Control Modules.

Reference Signals For Your Router

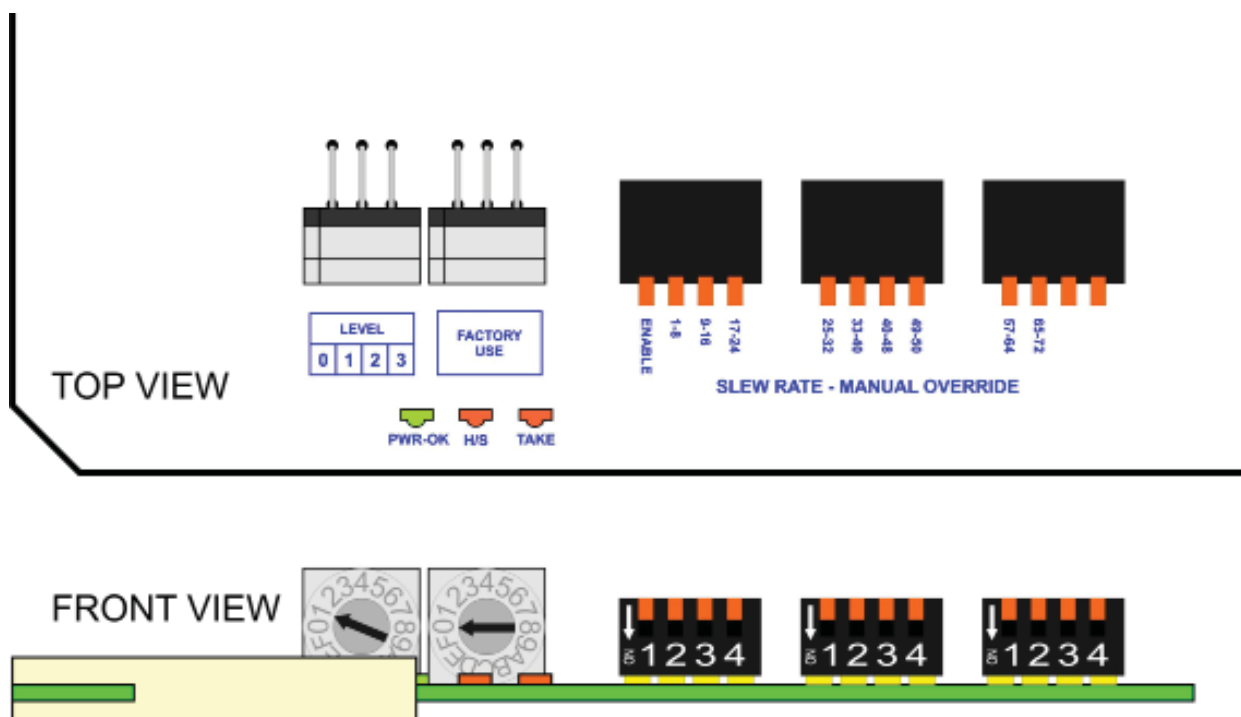
A Pyxis frame can contain video and/or audio modules.

Video cards need a video reference for clean switching operation. If no video reference is present and allocated to the relevant source the module will crash switch at any point in the video frame.

Audio cards need an AES reference (balanced or unbalanced – not both) to operate correctly.

Configuration: Video Modules

You may have both video and audio in your router. You need to ensure that the cards are correctly configured to match levels and destinations configured in the Nebula database.



As each video module has no video connection to any other video module the only configuration required is the control level number. Level is set using one of the Hex Rotary switches in the front left hand corner of the module.

Hex Switch Position	Logical Level	Port Offset
0	1	0
1	2	576
2	3	1120
3	4	1664
4	5	2208
5	6	2752
6	7	3296
7	8	3840
8	---	---
9	---	---
A	---	---
B	---	---
C	---	---
D	---	---
E	---	---
F	---	---

Depending on the video module it may be 3G/HD/SD reclocking, 3G/HD/SD non-reclocking or SD non-reclocking only.

The outputs of the non-reclocking modules will pass SD or HD, in order to meet SMPTE specifications the output slew rate must be selected using the DIP switches in the front left hand corner of the module. Each switch is associated with a block of 8 output ports.

LEFT	1	2	3	4
	Enable	Ports 1 - 8	Ports 9 - 16	Ports 17 - 24
OFF (High)	Slew Rate set by controller or automatically from reclockers	HD	HD	HD
ON (Low)	Slew Rate set by DIP Switches	SD	SD	SD

MIDDLE	1	2	3	4
	Ports 25 - 32	Ports 33 - 40	Ports 41 - 48	Ports 49 - 56
OFF (High)	HD	HD	HD	HD
ON (Low)	SD	SD	SD	SD

RIGHT	1	2	3	4
	Ports 57 - 64	Port 65 - 72	Not Used	Not Used
OFF (High)	HD	HD		
ON (Low)	SD	SD		

If you are not sure what signals will be routed to each output set the switches to HD, this will almost certainly work in most applications.

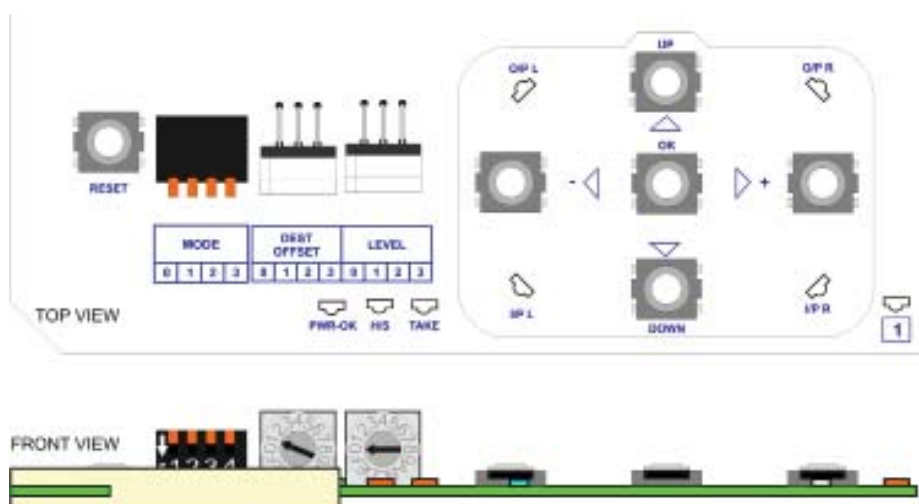
The reclocking modules will by default use feedback from the reclockers to set the output slew rate unless the switch override is enabled then the switch settings fix the slew rate.

The SD only modules have the switches fitted but no action is taken and output rates are fixed at SD.

Configuration: Audio Modules

Audio modules have 36 stereo inputs and outputs (AES or Analog) and 1 MADI (56 or 64) input and output. The modules are therefore 64² stereo or 68² stereo depending on the MADI mode. A Pyxis frame with 4 audio modules fitted has a 272x272 stereo switching capability using AES (or Analog) and MADI I/Os.

Audio modules are designed to be expandable, the destination offset, control level and module mode must be set on each module using the DIP switches and hex rotary switches in the front left hand corner of the module.





Name	Type	Function	
RESET	Push Button	Manual Reset of Module	
MODE	4 Way DIP Piano Key DIP	0	OFF (up) = 56 channel MADI, ON (down) = 64 channel MADI
		1	OFF (up) = Router mode, ON (down) = Transcoder mode
		2	OFF (up) = lock to reference, ON (down) = lock to MADI
		3	OFF (up) = Fs is not 44.1kHz, ON (down) = Fs = 44.1kHz
DEST OFFSET	Rotary Hex	Destination Offset (Range 0 - 3)	
LEVEL	Rotary Hex	Module Level (Range 0 - 7)	

DEST OFFSET	Module Address Range 56 Channel MADI Mode	Module Address Range 64 Channel MADI Mode
0	1 - 64	1 - 68
1	65 - 128	69 - 136
2	129 - 192	137 - 204
3	193 - 256	205 - 272

HEX Switch Position	Logical Level
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8

2 MADI inputs are available, A & B. If input A fails the module automatically switches to input B. The MADI output is Dual. Refer to Pyxis User Guide for full information.

Examples of the audio mapping between discrete audio (AES or Analog) and MADI is shown overleaf. Refer to the Pyxis user guide for full port mapping details.

Nebula Control

Route Numbering 56 Channel MADI Mode

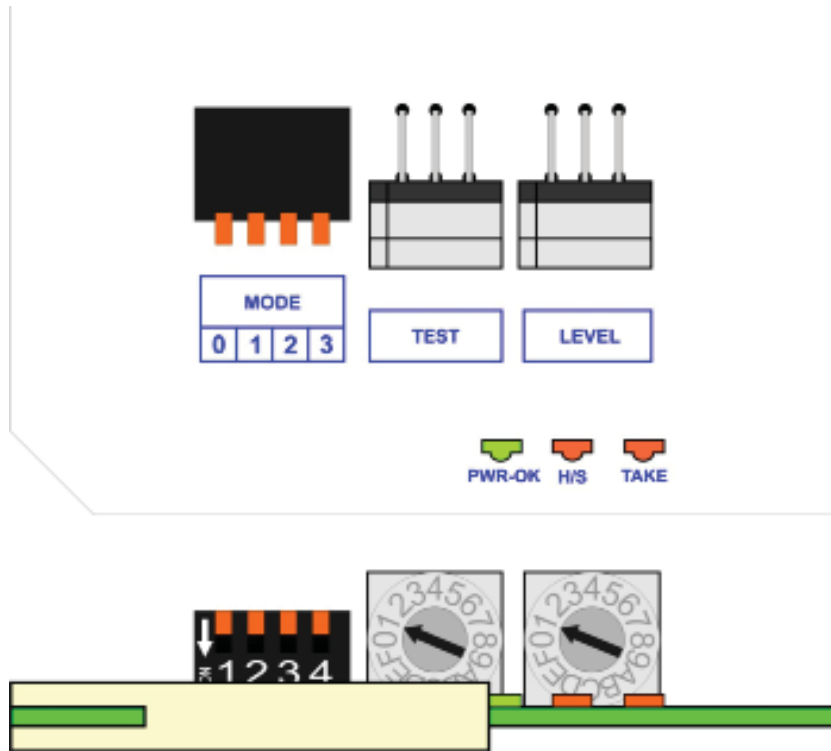
MODULE	DEST OFFSET	STEREO PAIR NUMBER	I/O AUDIO FORMAT
1	0	1 to 36	Analog or AES
		37 to 64	MADI
2	1	65 to 100	Analog or AES
		101 to 128	MADI
3	2	129 to 164	Analog or AES
		165 to 192	MADI
4	3	193 to 228	Analog or AES
		229 to 256	MADI

Route Numbering 64 Channel MADI Mode

MODULE	DEST OFFSET	STEREO PAIR NUMBER	I/O AUDIO FORMAT
1	0	1 to 36	Analog or AES
		37 to 68	MADI
2	1	69 to 104	Analog or AES
		105 to 136	MADI
3	2	137 to 172	Analog or AES
		173 to 204	MADI
4	3	205 to 240	Analog or AES
		241 to 272	MADI

Configuration: RS422 Modules

The only configuration required on RS422 modules is setting the Control Level using the Rotary Hex Switch in the front left hand corner.

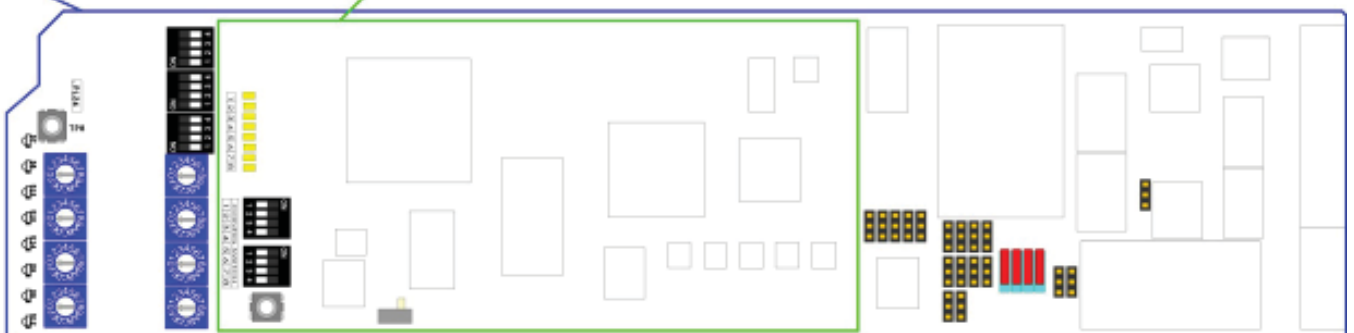


Label	Type	Functionality
LEVEL	Rotary Hex Switch	Sets modules 'logical level' adjusting port offset (numbering)
TEST	Rotary Hex Switch	Not Used
MODE	DIP Switch	Not Used

Control Card

2449 basecard

2445 Nebula card



2445 Nebula Card Switch Settings

Switch	Function	Selection		Setting for Pyxis	
		OFF	ON		
1	MASTER/SLAVE SELECT	SLAVE	MASTER	Single Controller	ON
				Dual Controller	One Controller ON One Controller OFF
2	µP CLOCK SELECT	10 MHz	20 MHz	ON	
3	SYSTEM RUN MODE	NORMAL	TEST	OFF	
4	RS232 PORT BAUD RATE	9600	38400	ON	
5	DEFAULT TRIGGER SELECT	625	525	Not Used	
6	RE-CONFIGURE	MANUAL	AUTO	ON	
7	DATABASE TYPE	FIXED	CONFIGURE	ON	
8	CONTROL MODE	GENERAL	PANELS	Not Used	

Note: A configured database **MUST** be downloaded to the Pyxis using the Nebula editor. Refer to Pyxis and Nebula documentation for full details.

Database Configuration

If a database is not installed on the router, follow these steps:

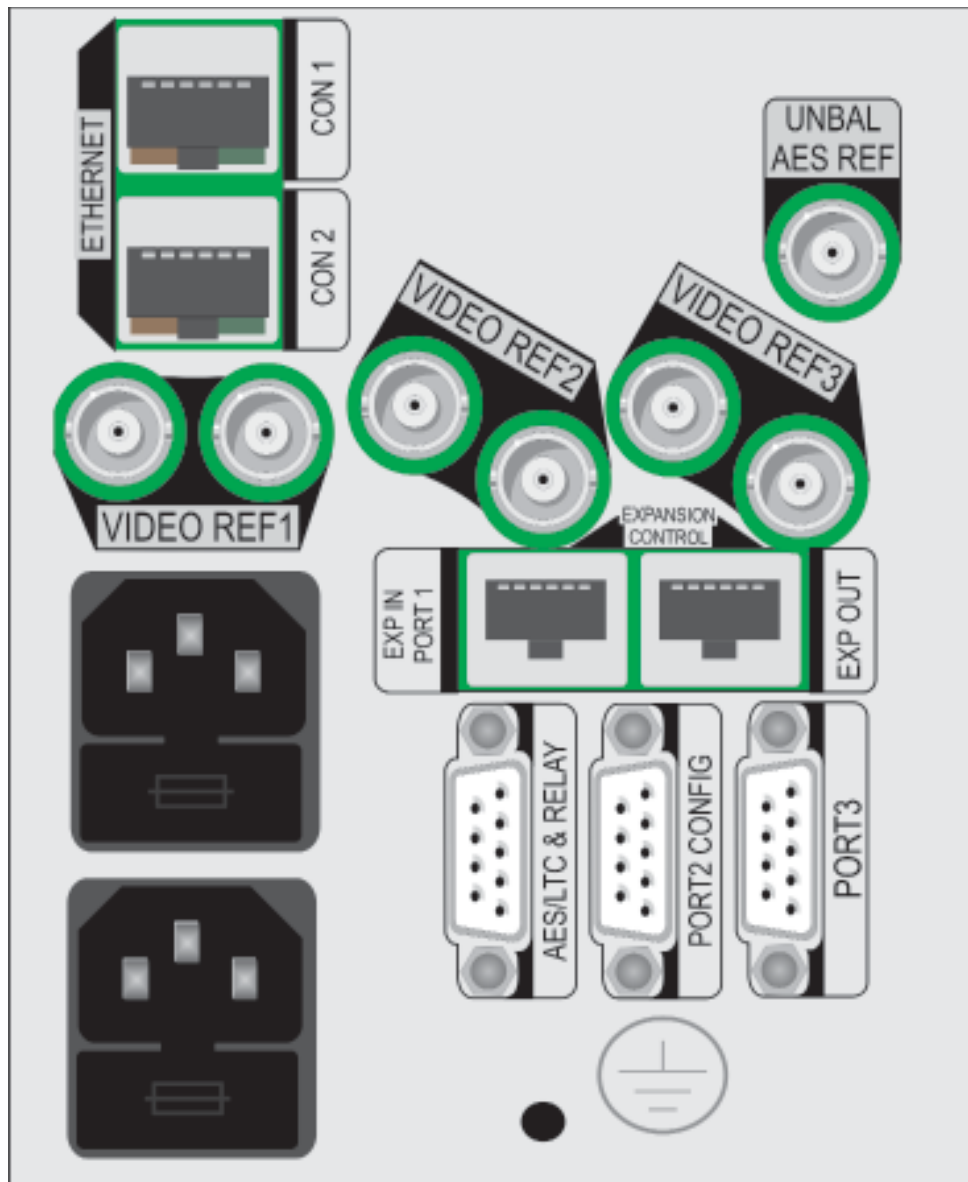
If your router has a dual controller configuration, remove the slave controller from the frame.

Install the Nebula editor on a suitable PC (Running Windows 2000, XP or Vista). Connect the PC to Port 2 of the Pyxis router with a pin to pin cable using the RS232 port of the PC.

Create a new database, dependant on your equipment. When completed save the file on the PC and download the database created.

You can then (if desired) disconnect the PC from the Pyxis router.

Connecting your Pyxis Router to Panels and Control Systems



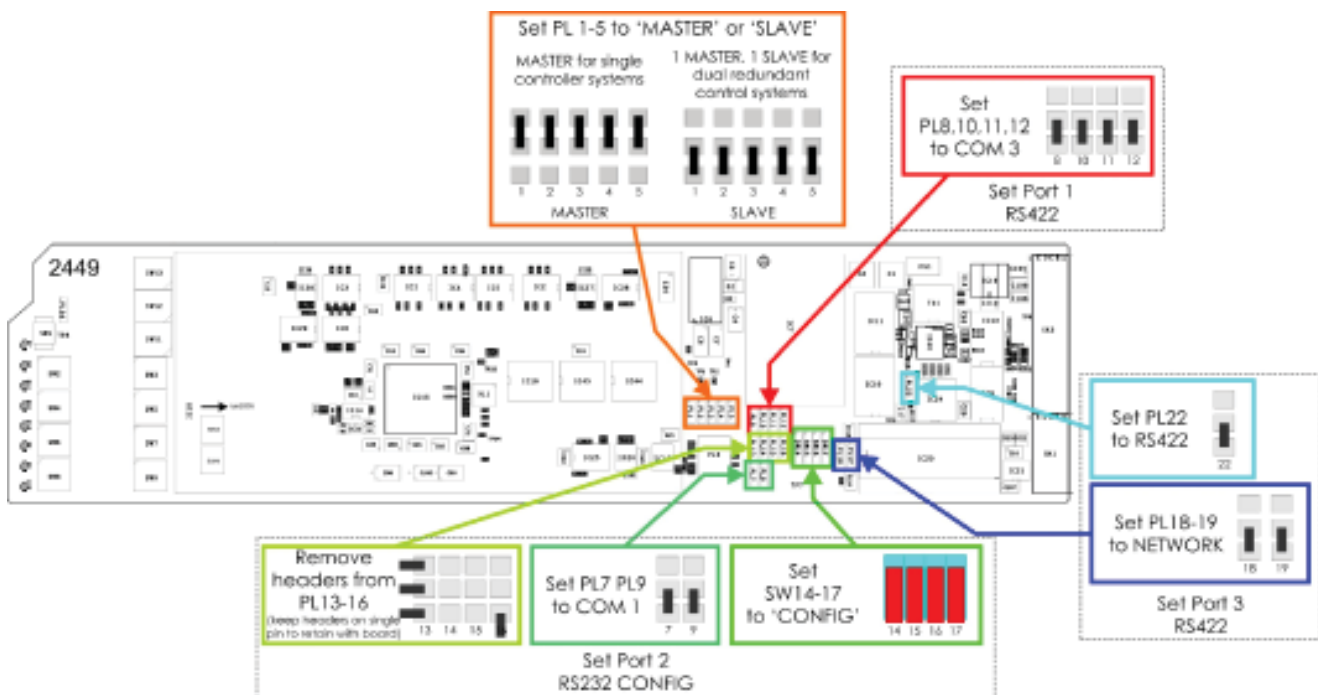
Default Configuration of Ports

Port 1: RS422 - SW-P-06 Multi-drop protocol

Port 2: RS232 – Configuration

Port 3: RS485 – SW-P-02 General Switcher protocol

The jumper links and switch settings on the 2449 Controller are set as described overleaf as default to give the port configurations described above. To change port settings refer to the Pyxis User Guide for detailed information.



Port 1

RS422 Control (default = SW-P-06 multi-drop protocol) when used in a Master Frame

EXP_IN when used in a slave frame with a 2451 Slave controller.

SW-P-06 protocol allows connection directly to a control panel.

If a 9 Way interface is required Snell provide an adapter (Part Number HW-RJ45D9SA) which converts the RJ45 socket to a 9 Way D-Type socket.

Port 2

RS232 CONFIG default – connection to a PC for database configuration, upload or download.

Can be configured to RS485 but disconnects Port 3.

Port 3

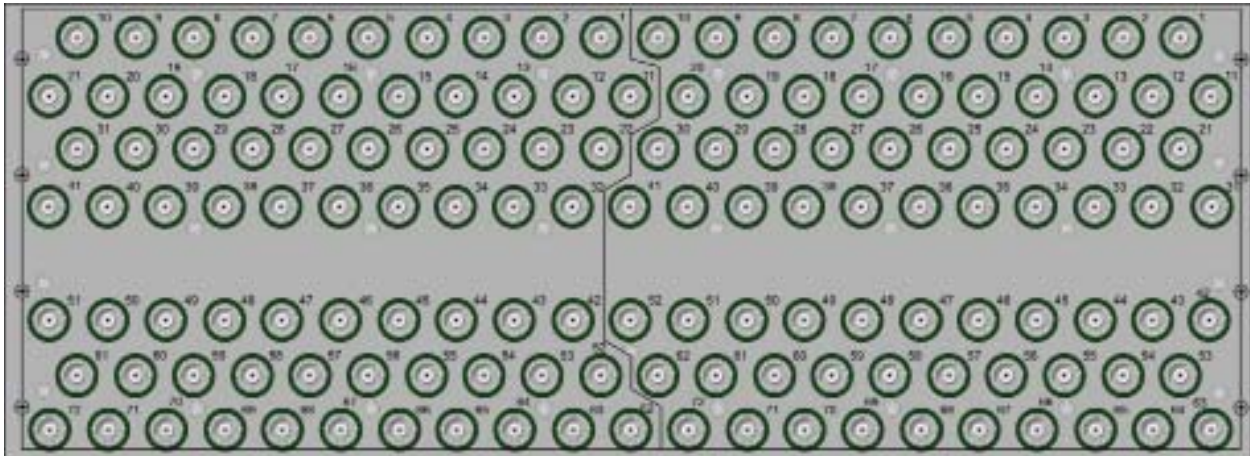
RS422 Control (default SW-P-02 general switcher protocol).

If Port 2 is configured as RS485 – Port 3 is no longer connected.

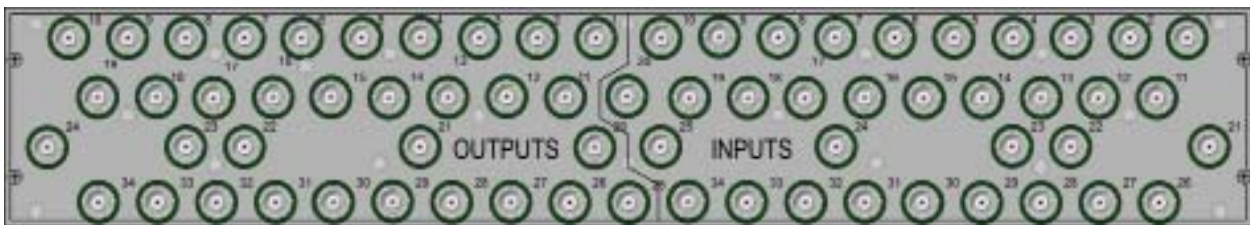
SW-P-02 protocol allows connection to a Snell control system.

Rear Panels

Video



9100: 72 x 72 SDI Rear Panel



9101: 34 x 34 SDI Rear Panel



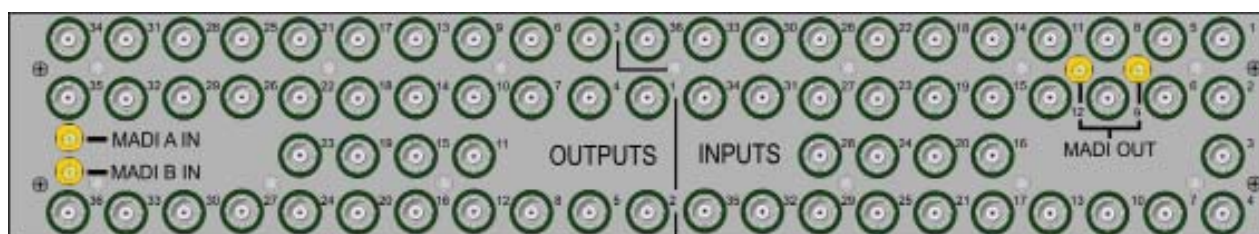
9102: 17 x 17 SDI Rear Panel

Audio



9105: 72 x 72 High Density Balanced Audio Rear Panel

Unbalanced Audio

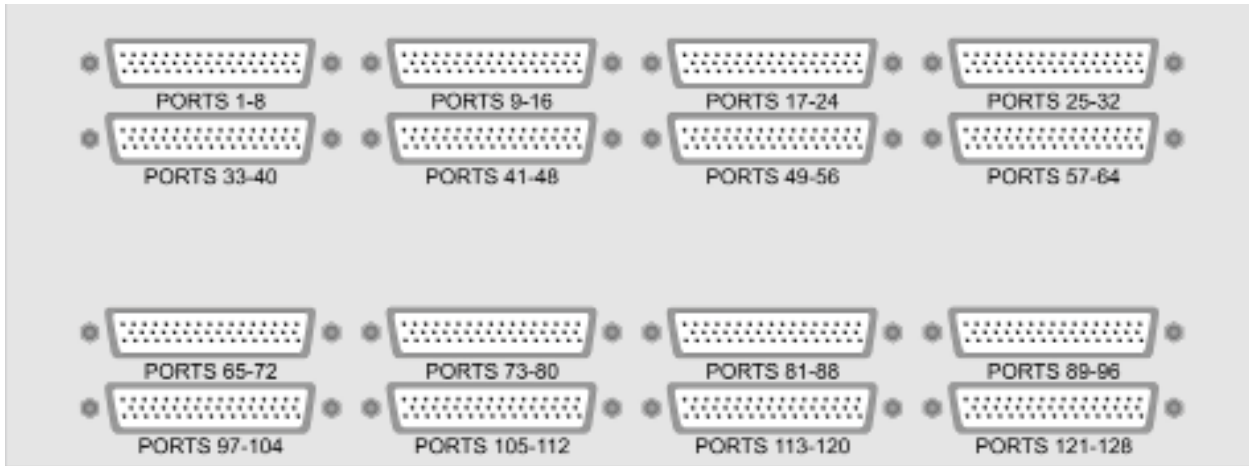


9107: 36 x 36 AES Unbalanced Audio Rear Panel

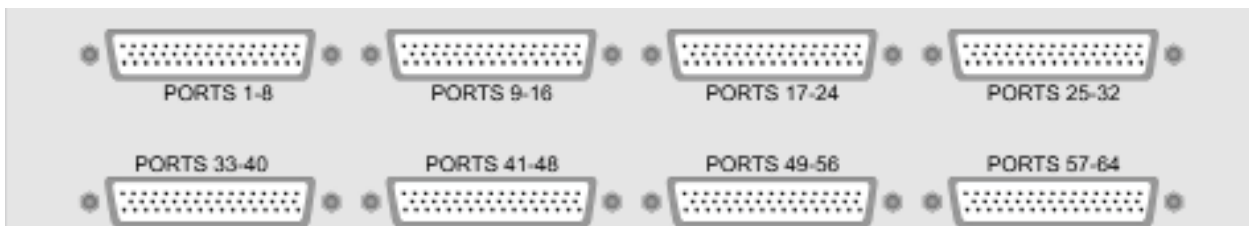


9108: 18 x 18 AES Unbalanced Audio Rear Panel

RS422



9121: 128 Port RS422 Rear Panel



9122: 64 Port RS422 Rear Panel



9123: 32 Port RS422 Rear Panel



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