

Installation Planning Guide

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7500 SERIES

7500NB/7500WB ROUTERS

Contacting Grass Valley Group

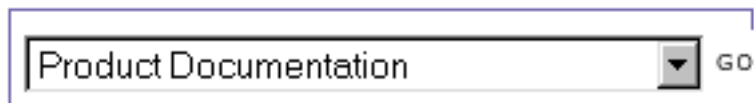
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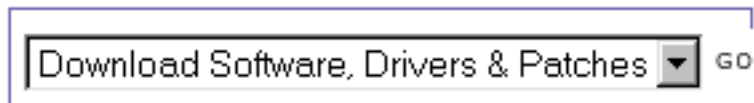
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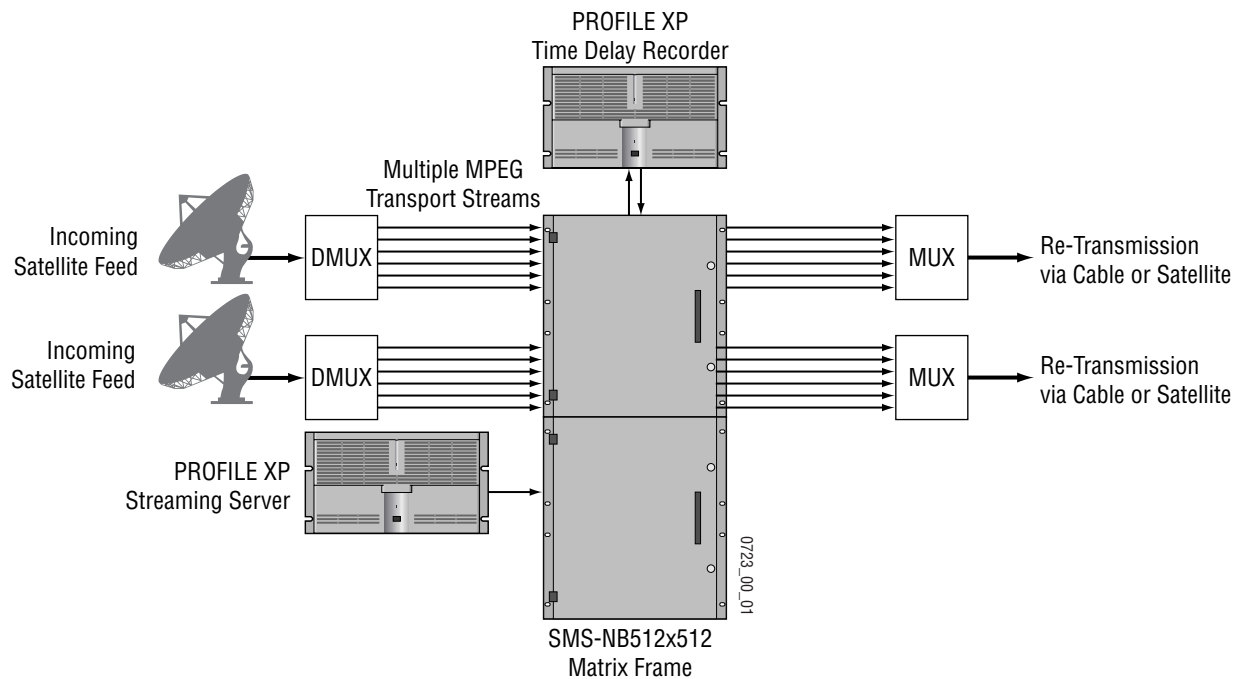
Installation Planning Guide

7500 Series Routers

The 7500 Series Routing frames can be controlled by either the Series 7000 Signal Management System or the Encore Control System. The 7500 Series Routing frames expand the multiformat routing capability of the Series 7000 Signal Management System and are compatible with existing Series 7000 matrices and control panels.

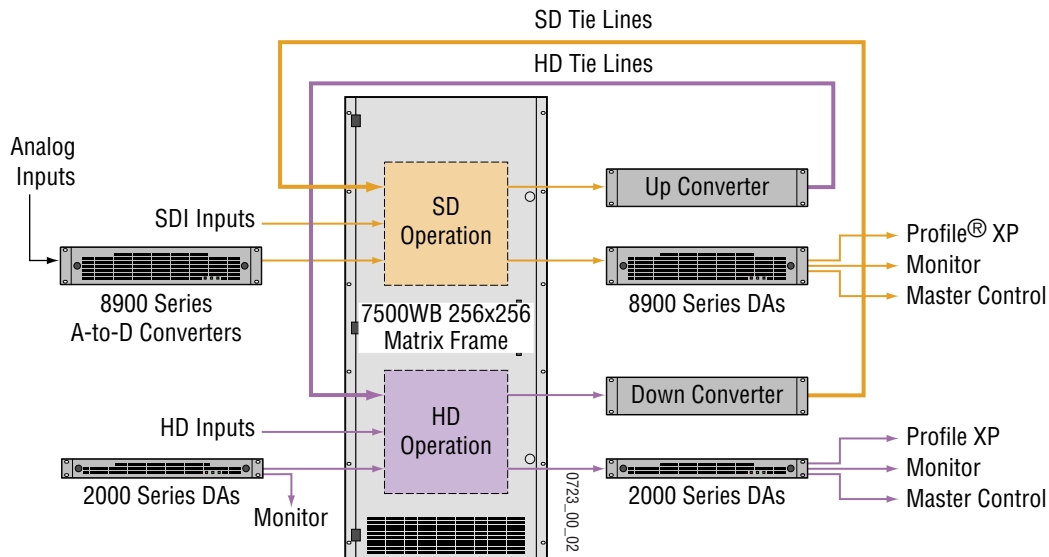
The 7500NB frame is designed to switch digital signals up to 50 Mbps. [Figure 1](#) shows an example of MPEG signal routing using a SMS-NB512x512

Figure 1. 7500NB 512x512 MPEG Signal Routing



The 7500WB frame is designed to switch signals from 10 Mbps to 1.485 Gbps. [Figure 2](#) shows an example of Standard Definition (SD) and High Definition (HD) signal routing using a 7500WB 256x256.

Figure 2. 7500WB 256x256 HD and SD Signal Routing



Frame Installation

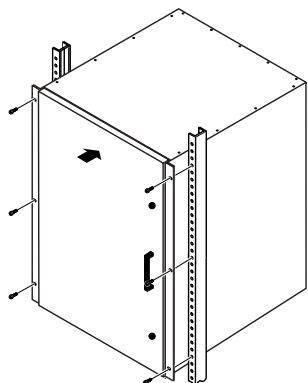


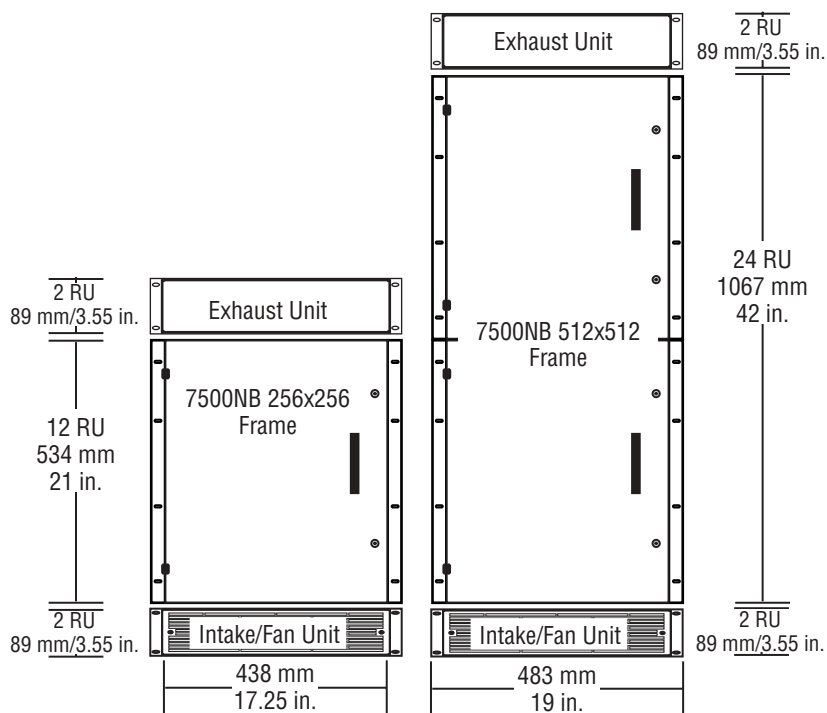
Figure 3. Rack Mount

The 7500 Series matrices are installed in a standard 483 mm (19-inch) rack. Rear frame support is not required.

7500 NB Frame Installation

The 7500NB 256x256 occupies 12 rack-units. Cooling is by vertical airflow using an external fan set. The 7500NB 512x512 is two 7500NB 256x256 frames connected by an Expansion module set. The 7500NB 512x512 occupies 24 rack-units. See [Figure 4](#).

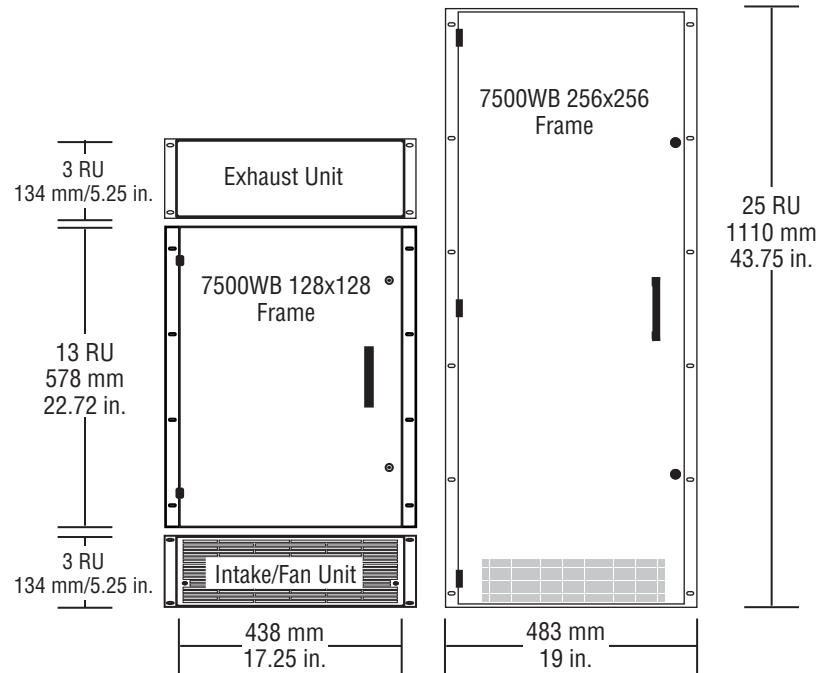
Figure 4. NB Rack Installation Front View



7500 WB Frame Installation

The 7500WB 256x256 router occupies 25 rack-units. Cooling is by vertical airflow using a fan mounted inside the top of the frame and an air filter on the top of the front door. The 7500WB 128x128 router occupies 13 rack-units. Cooling is by vertical airflow using an external fan set. See [Figure 5](#).

Figure 5. WB Rack Installation Front View



Module Installation

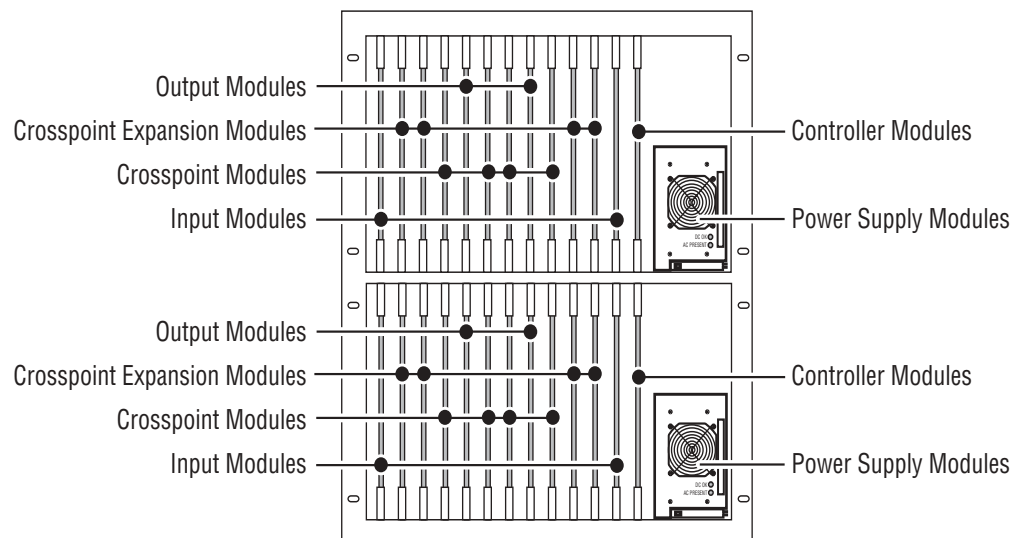
All the modules are vertically oriented in the frames, and edge guides aid insertion and removal.

CAUTION It is critical that the modules be placed in the proper slot and oriented correctly to prevent bent pins.

7500NB Module Placement

7500NB modules are oriented in the frame with the front (populated) side facing to the right. See [Figure 6](#).

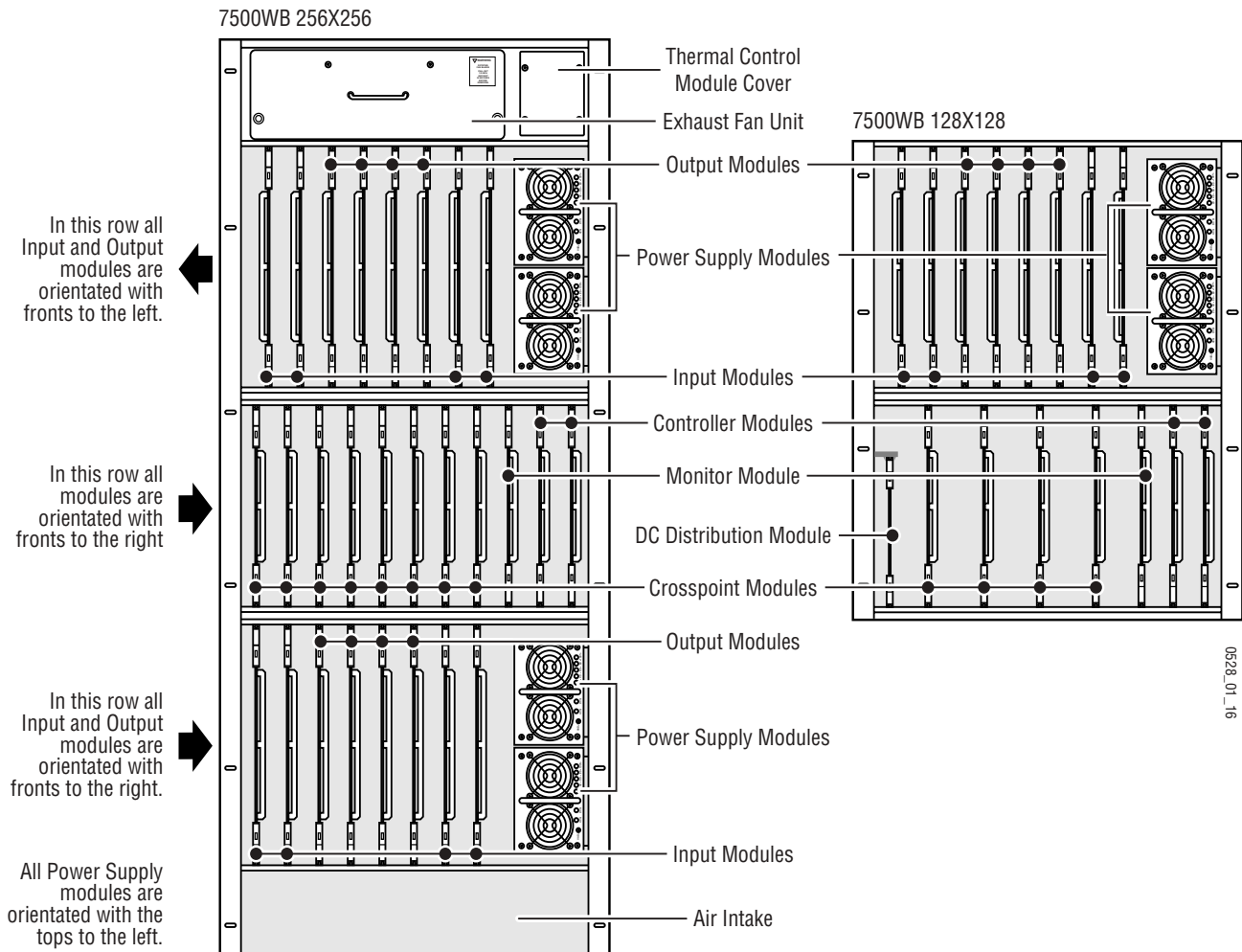
Figure 6. 7500NB Module Configuration and Alignment



7500WB Module Placement

In the top row of the 7500WB, Input and Output modules are oriented in the frame with the front (populated) side facing to the left. The other rows of modules are orientated in the frame with the front (populated) side facing to the right. See [Figure 7](#).

Figure 7. 7500WB Module Configuration and Alignment



Cabling

Table 1 contains a compilation of the connectors and label variations found on 7500 matrices. The Gender column indicates the gender of the connector found on the 7500 matrix. The Details column contains information to assist in using the connector.

Table 1. Connectors Found on 7500 Matrices

Label	NB	WB	Connector		Details
			Type	Gender	
AES REF 1 and AES REF 2	✓	-	BNC	Female	Synchronous audio references use unbalanced 75 Ohm connector, terminator, and coaxial cable. Loop-thru cabling supported.
ALARM	-	✓	9 Pin D	Female	Audio Alarm use serial/machine cable.
CONSOLE 1 and CONSOLE 2	✓	✓	9 Pin D	Female	Terminal interface (factory use) use serial/machine cable.
DC PWR	✓	-	Terminal Block	Male	Use 12 AWG (3.31 mm ²) wire and a 3-pin terminal block connector to establish a DC power connection.
	-	✓	Wire	-	Use 6 AWG (13.30 mm ²) wire to establish a DC power connection.
DIGITAL VIDEO REF MC1(1), MC1(2), MC2(1), and MC2(2)	-	✓	BNC	Female	Future use for digital video references use unbalanced 75 Ohm connector, terminator, and coaxial cable. Loop-thru cabling supported.
ETHERNET CONT 1 and ETHERNET CONT 2	✓	-	RJ45	Female	Ethernet network communication interface is 10Base-T and 100Base-T compatible use category 5 cable, 8 conductor twisted pair. All Ethernet connections need to be routed through switches.
MC1 ETHERNET CONT 1, MC2 ETHERNET CONT 1, MC1 ETHERNET CONT 2, and MC2 ETHERNET CONT 2	-	✓			
EXT-COM2	✓	✓	9 Pin D	Female	External Control (factory use) use serial/machine cable.
FAN DC/ALARM	✓	✓	Terminal Block	Male	DC Fan and/or Audio Alarm use 12 AWG (3.31 mm ²) wire and a 10-pin terminal block connector
GSC	✓	✓	BNC	Female	Global Serial Channel Interface use unbalanced 75 Ohm connector, terminator, and coaxial cable. Loop-thru cabling supported.
INPUTS	✓	✓	BNC	Female	Use unbalanced 75 Ohm connector and coaxial cable.
	✓	-	50 Pin D	Female	Use balanced 110 Ohm connector and shielded twisted pair cable.
MC1 EXT-COM1 and MC2 EXT-COM1	✓	✓	9 Pin D	Female	External Control (factory use) use serial/machine cable.
MON 1, MON 2, MON 3, MON 4, MON 5, MON 6, MON 7, and MON 8	✓	-	BNC	Female	Monitor output use unbalanced 75 Ohm connector and coaxial cable.
MONITOR 1-8	✓	-	D-25 Pin	Female	Monitor input use balanced 110 Ohm connector and shielded twisted pair cable
MONITOR IN	-	✓	BNC	Female	Monitor input use an unbalanced 75 Ohm connector and coaxial cable.
MONITOR OUT 1, 2, 3, and 4	-	✓	BNC	Female	Monitor output use an unbalanced 75 Ohm connector and coaxial cable.
OPTION	✓	✓	D-25 Pin	Female	Optional Interface use serial/machine cable.
OUTPUTS	✓	✓	BNC	Female	Use unbalanced 75 Ohm connector and coaxial cable.
	✓	-	50 Pin D	Female	Use balanced 110 Ohm connector and shielded twisted pair cable.
SMTE/LTC	✓	✓	9 Pin D	Female	SMPTE Line Time Code use serial/machine cable.
VID REF	✓	-	BNC	Female	Video reference use unbalanced 75 Ohm connector, terminator, and coaxial cable. Loop-thru cabling supported.
VIDEO REF 1 and 2	-	✓	BNC	Female	Video reference use unbalanced 75 Ohm connector, terminator, and coaxial cable. Loop-thru cabling supported.

7500NB Backplane Cabling

See [Figure 8](#) for the 7500NB 256x256 with a BNC backplane, and [Figure 9](#) for the 7500NB 256x256 with a backplane populated with 50 Pin D connectors.

Figure 8. 7500NB Backplane Cabling with BNC Input and Output Connectors

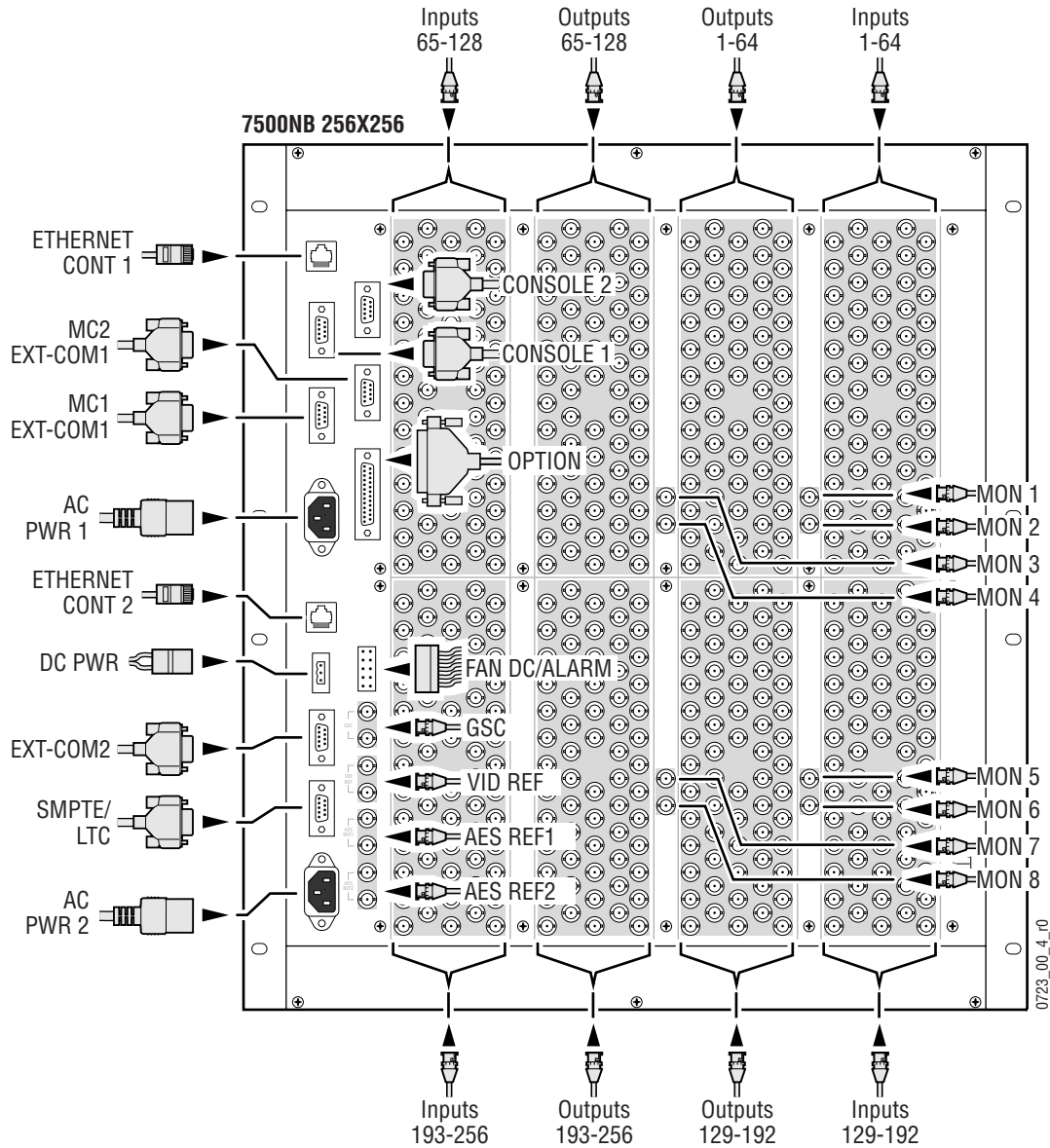


Figure 9. 7500NB Backplane Cabling with 50 Pin D Input and Output Connectors

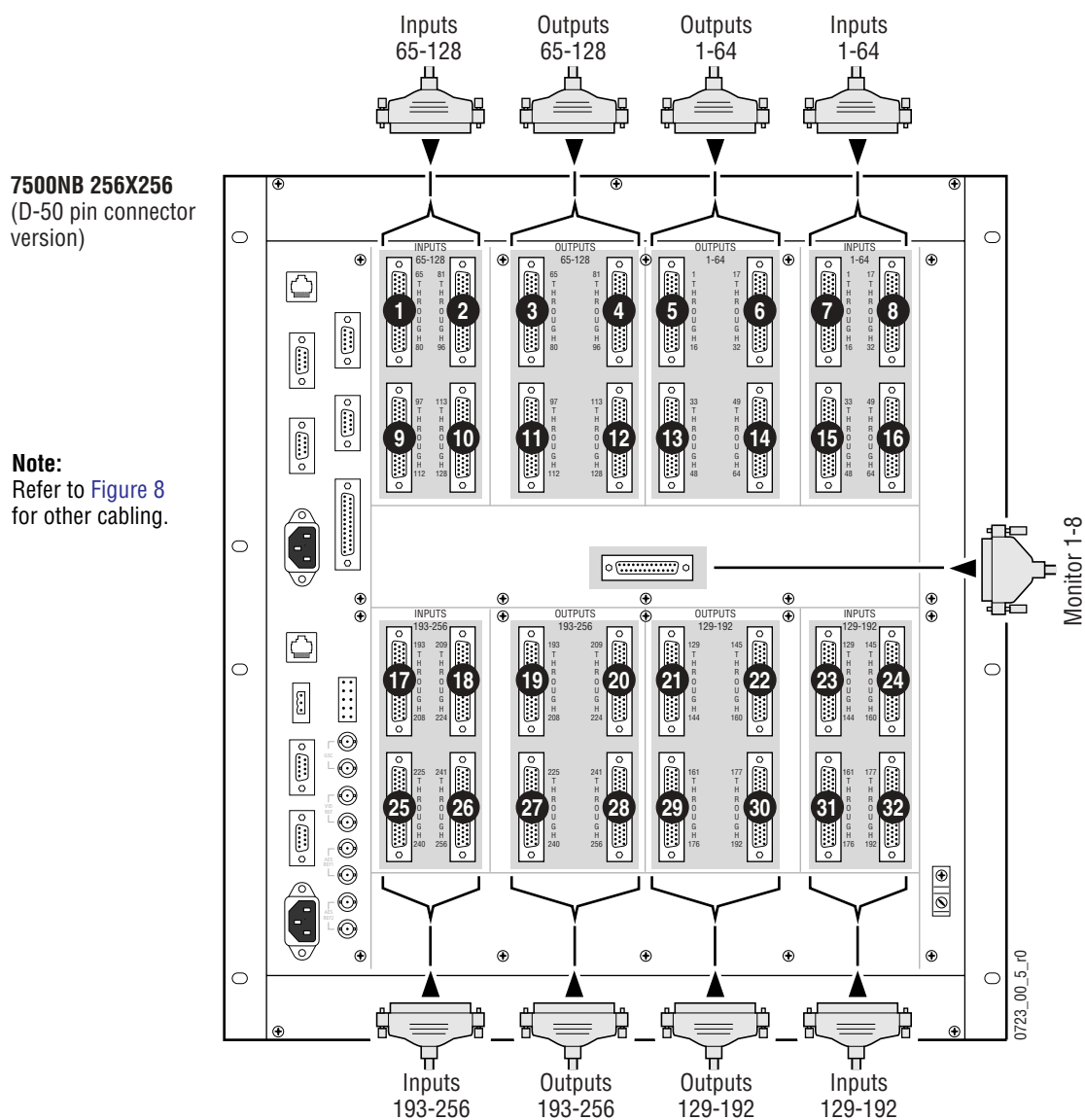


Table 2. Input and Output Groups for 7500NB with 50 Pin D Connectors

#	Inputs	#	Inputs	#	Outputs	#	Outputs	#	Outputs	#	Outputs	#	Inputs	#	Inputs
1	65-80	2	81-96	3	65-80	4	81-96	5	1-16	6	17-32	7	1-16	8	17-32
9	97-112	10	113-128	11	97-112	12	113-128	13	33-48	14	49-64	15	33-48	16	49-64
17	193-256	18	209-224	19	193-256	20	209-224	21	129-144	22	145-160	23	129-144	24	145-160
25	225-240	26	241-256	27	225-240	28	241-256	29	161-176	30	177-192	31	161-176	32	177-192

7500WB Backplane Cabling

Refer to [Figure 10](#) for 7500WB 128x128 cabling, and [Figure 11](#) for 7500WB 256x256 cabling.

Figure 10. 7500WB 128x128 Backplane Cabling

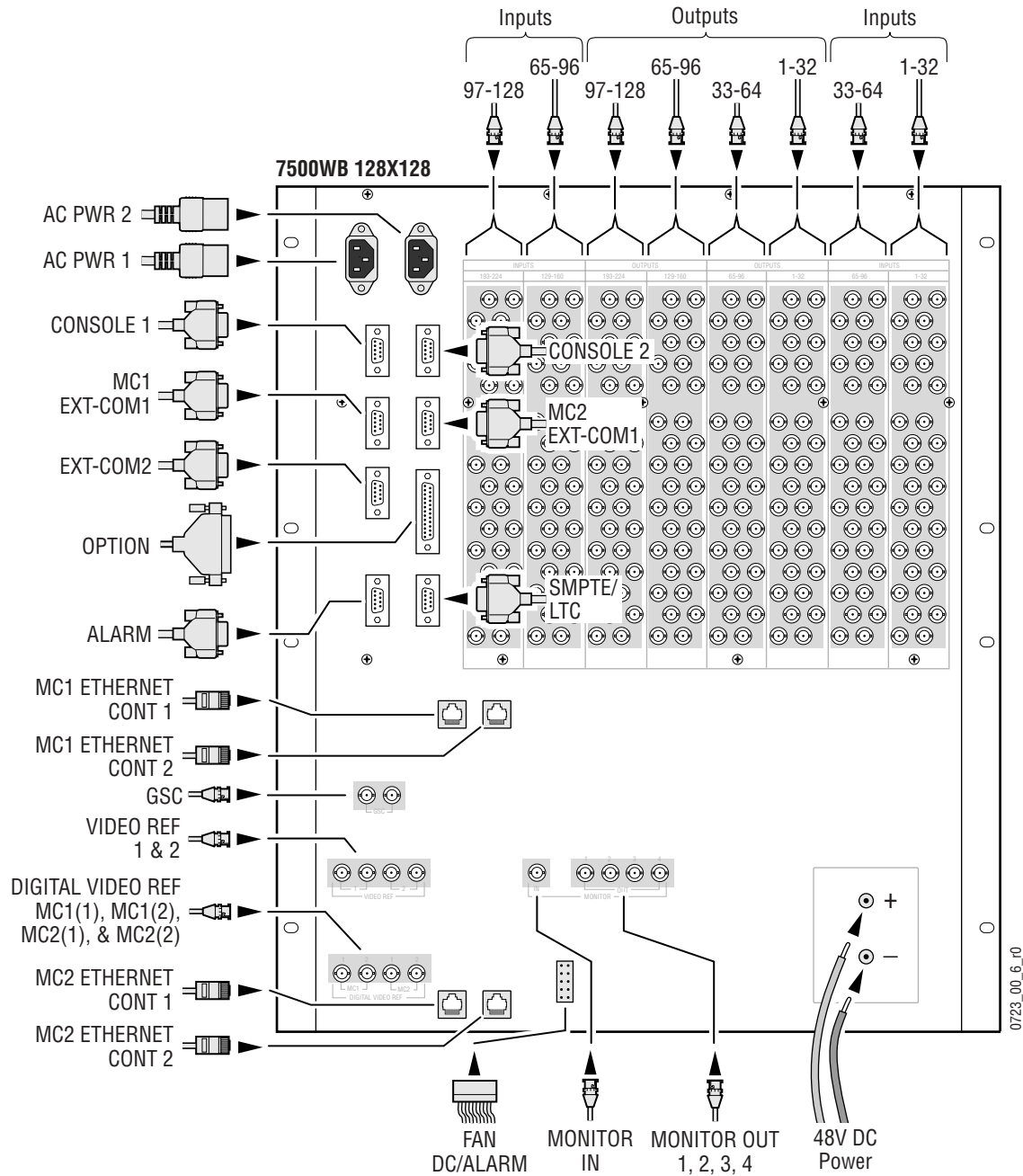
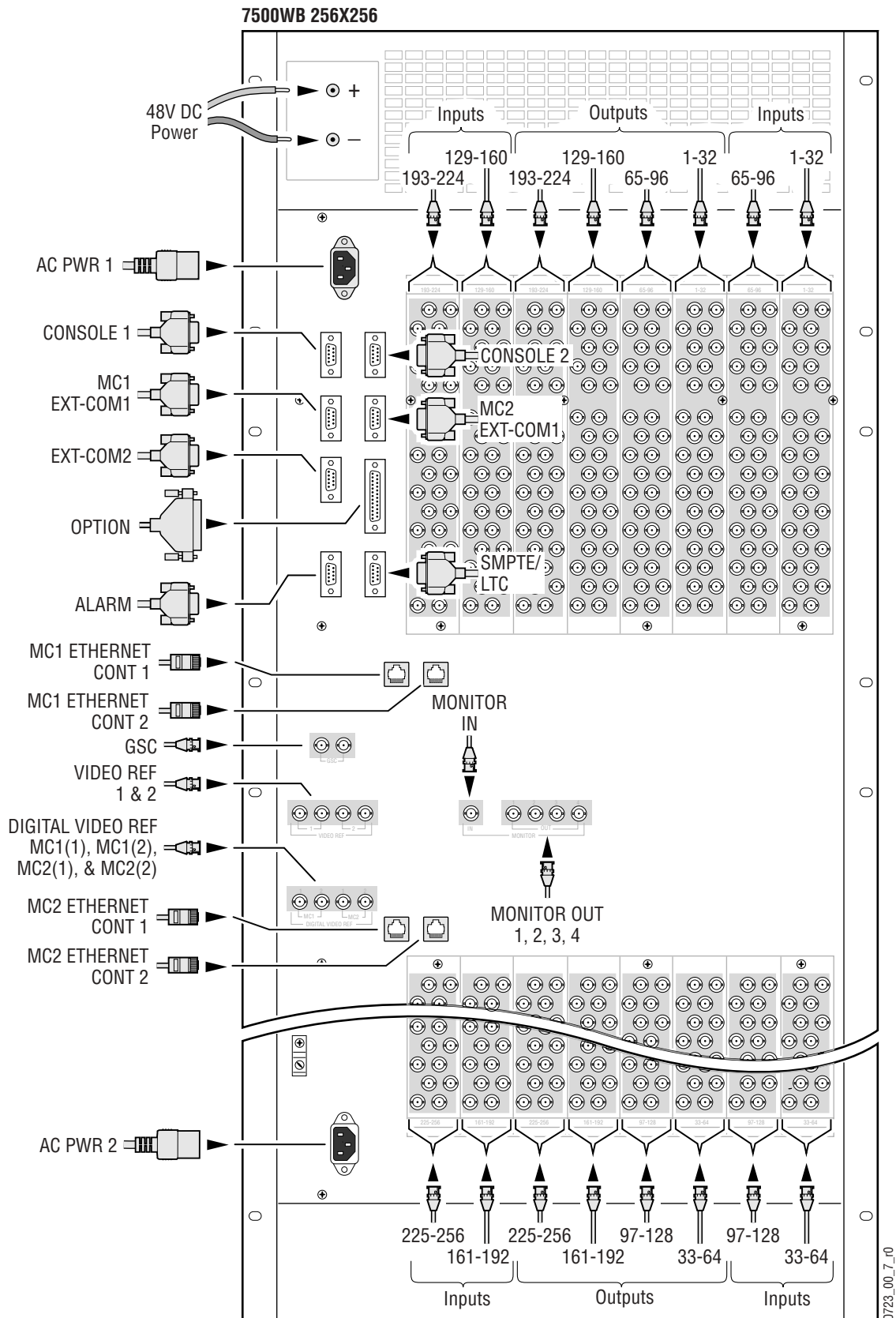


Figure 11. 7500WB 256x256 Backplane Cabling



Pinouts

Table 3 contains pinout information for use with the 7500 matrices.

Table 3. Pinouts

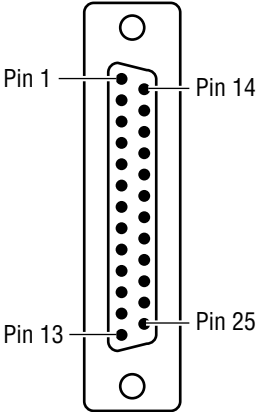
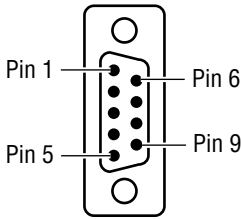
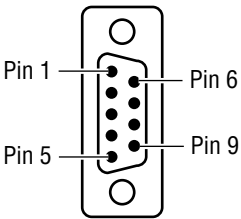
OPTION	Pin	Function	Pin	Function
D-25 Female 	1	OPT_1	14	OPT_14
	2	OPT_2	15	OPT_15
	3	OPT_3	16	OPT_16
	4	OPT_4	17	OPT_17
	5	OPT_5	18	OPT_18
	6	OPT_6	19	OPT_19
	7	OPT_7	20	OPT_20
	8	OPT_8	21	OPT_21
	9	OPT_9	22	OPT_22
	10	OPT_10	23	OPT_23
	11	OPT_11	24	OPT_24
	12	OPT_12	25	OPT_25
	13	OPT_13	-	-
SMPTE/LTC	Pin	Function	Pin	Function
D-9 Female 	1	GND	6	NC
	2	LTC INPUT -	7	NC
	3	LTC INPUT +	8	NC
	4	NC	9	NC
	5	NC	-	-
	-	-	-	-
	-	-	-	-
CONSOLE 1 and CONSOLE 2	Pin	Function	Pin	Function
D-9 Female 	1	GND	6	NC
	2	RS-232_TX	7	NC
	3	RS-232_RX	8	NC
	4	NC	9	NC
	5	NC	-	-
	-	-	-	-
	-	-	-	-

Table 3. Pinouts - (continued)

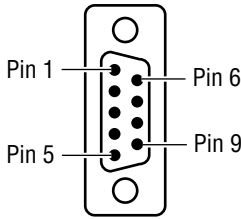
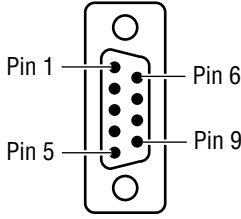
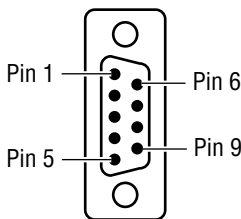
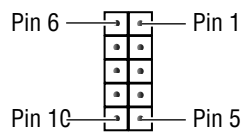
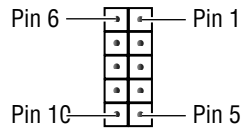
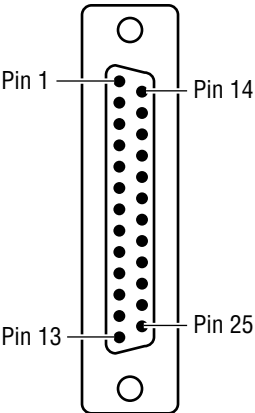
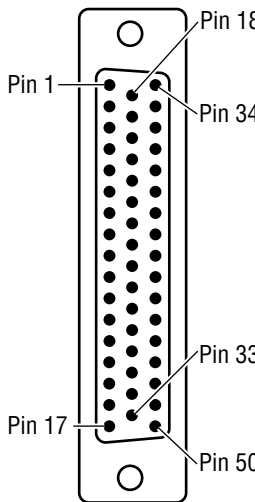
MC1 EXT-COM1 and MC2 EXT-COM1	Pin	Function	Pin	Function
D-9 Female 	1	GND	6	TX_COM
	2	TX -	7	TX +
	3	RX +	8	RX -
	4	RX_COM	9	GND
	5	NC	-	-
	-	-	-	-
	-	-	-	-
EXT-COM2	Pin	Function	Pin	Function
D-9 Female 	1	GND	6	MC1 & MC2_TX_COM
	2	MC1 & MC2_TX -	7	MC1 & MC2_TX +
	3	MC1 & MC2_RX +	8	MC1 & MC2_RX -
	4	MC1 & MC2_RX_COM	9	GND
	5	NC	-	-
	-	-	-	-
	-	-	-	-
ALARM (7500WB)	Pin	Function	Pin	Function
D-9 Female 	1	GND	6	MC2_RLY_COM
	2	MC2_RLY_NO	7	NC
	3	NC	8	NC
	4	MC1_RLY_COM	9	MC1_RLY_NO
	5	GND	-	-
	-	-	-	-
	-	-	-	-
FAN DC/ALARM (7500NB 256x256)	Pin	Function	Pin	Function
	6	FAN2_ALARM	1	MC1_RLY_NO
	7	FAN3_ALARM	2	MC1_RLY_NO_COM
	8	FAN4_ALARM	3	MC2_RLY_NO
	9	24 VDC	4	MC2_RLY_NO_COM
	10	GND	5	FAN1_ALARM
FAN DC/ALARM (7500WB 128x128)	Pin	Function	Pin	Function
	6	FAN2_ALARM	1	NC
	7	FAN3_ALARM	2	NC
	8	FAN4_ALARM	3	NC
	9	24 VDC	4	NC
	10	GND	5	FAN1_ALARM

Table 3. Pinouts - (continued)

MONITOR 1-8 (7500NB)	Pin	Function	Pin	Function
D-25 Female  Use 110 Ohm Shielded Twisted Pair Cable	1	Monitor 1+	14	Monitor 1-
	2	Ground	15	Monitor 2+
	3	Monitor 2-	16	Ground
	4	Monitor 3+	17	Monitor 3-
	5	Ground	18	Monitor 4+
	6	Monitor 4-	19	Ground
	7	Monitor 5+	20	Monitor 5-
	8	Ground	21	Monitor 6+
	9	Monitor 6-	22	Ground
	10	Monitor 7+	23	Monitor 7-
	11	Ground	24	Monitor 8+
	12	Monitor 8-	25	Ground
	13	Ground	-	-

Input/Output D Connector (7500NB)	Pin	Function	Pin	Function	Pin	Function
D-50 Female  Use 110 Ohm Shielded Twisted Pair Cable	1	Ground	18	1-	34	1+
	2	2+	19	2-	35	Ground
	3	Ground	20	3-	36	3+
	4	4+	21	4-	37	Ground
	5	Ground	22	5-	38	5+
	6	6+	23	6-	39	Ground
	7	Ground	24	7-	40	7+
	8	8+	25	8-	41	Ground
	9	Ground	26	9-	42	9+
	10	10+	27	10-	43	Ground
	11	Ground	28	11-	44	11+
	12	12+	29	12-	45	Ground
	13	Ground	30	13-	46	13+
	14	14+	31	14-	47	Ground
	15	Ground	32	15-	48	15+
	16	16+	33	16-	49	
	17	Not used	-	-	50	Not used

Communications

Communications between matrices and control systems use either Ethernet or Global Serial Channel (GSC) interfaces. The Encore Control System requires an Ethernet connection and Series 7000 requires a GSC connection. Communications between matrices in expanded systems requires Ethernet.

7500NB Ethernet

Ethernet is required for communication among the Encore Control Frame and 7500NB matrices. Ethernet is also required to communicate among matrices in 7500NB systems larger than 256x256.

Ethernet communications can be established between the Encore Control Frame and a 7500NB matrix using either **ETHERNET CONT 1** or **ETHERNET CONT 2**. One connection can be used as a primary connection and the other can be used as a redundant connection. See [Figure 12](#)

The multicast signals from the 7500NB matrices are routed through a managed Ethernet switch. Using the software and instructions that come with the managed Ethernet switch, Virtual Local Area Networks (VLANs) can be created to manage the communication between matrices, the Encore Control Frame, and other equipment connected to the switch. The managed switch must support IP multicast with Internet Group Management Protocol (IGMP).

Figure 12. NB and Encore Ethernet Connectors

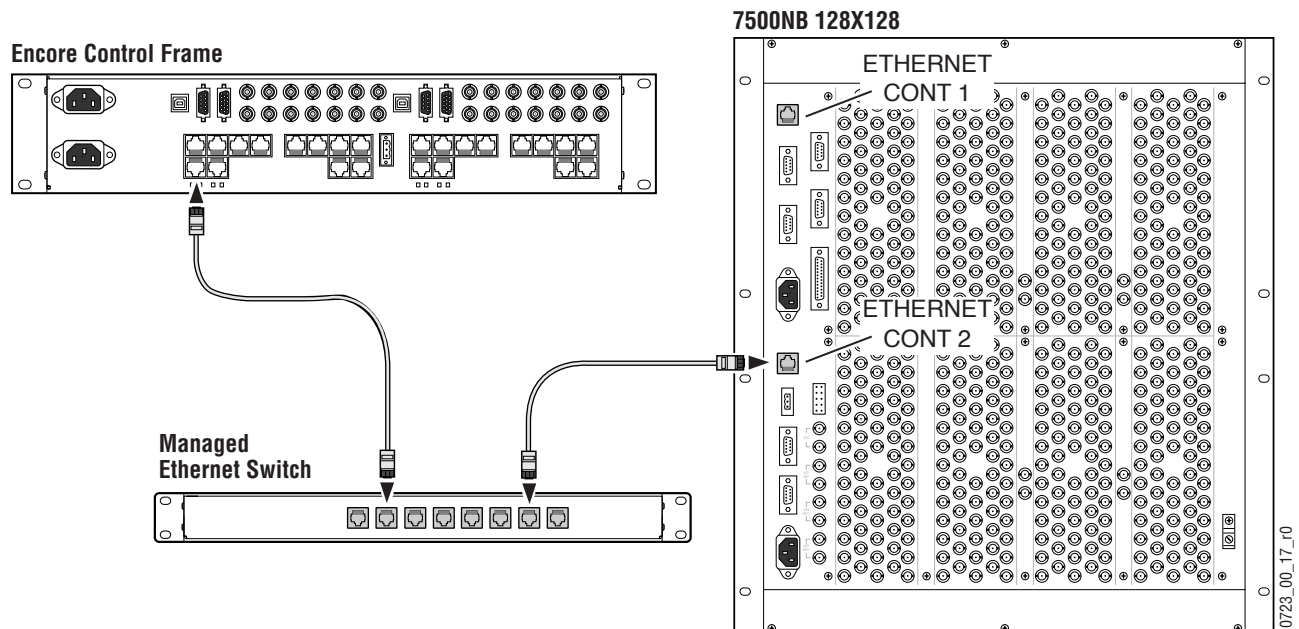


Figure 13 shows the Ethernet requirements for a 7500NB 512x512 that is controlled by a Series 7000 Control System. Dedicated Ethernet Switches are used to communicate between the matrices. One Ethernet Switch is required for each set of up to four matrices. The switches do not have to be in the same rack as the matrices and the standard cable length restrictions of 100 m (328 ft) apply.

Figure 13. Ethernet Communication Connections in Expanded NB Systems

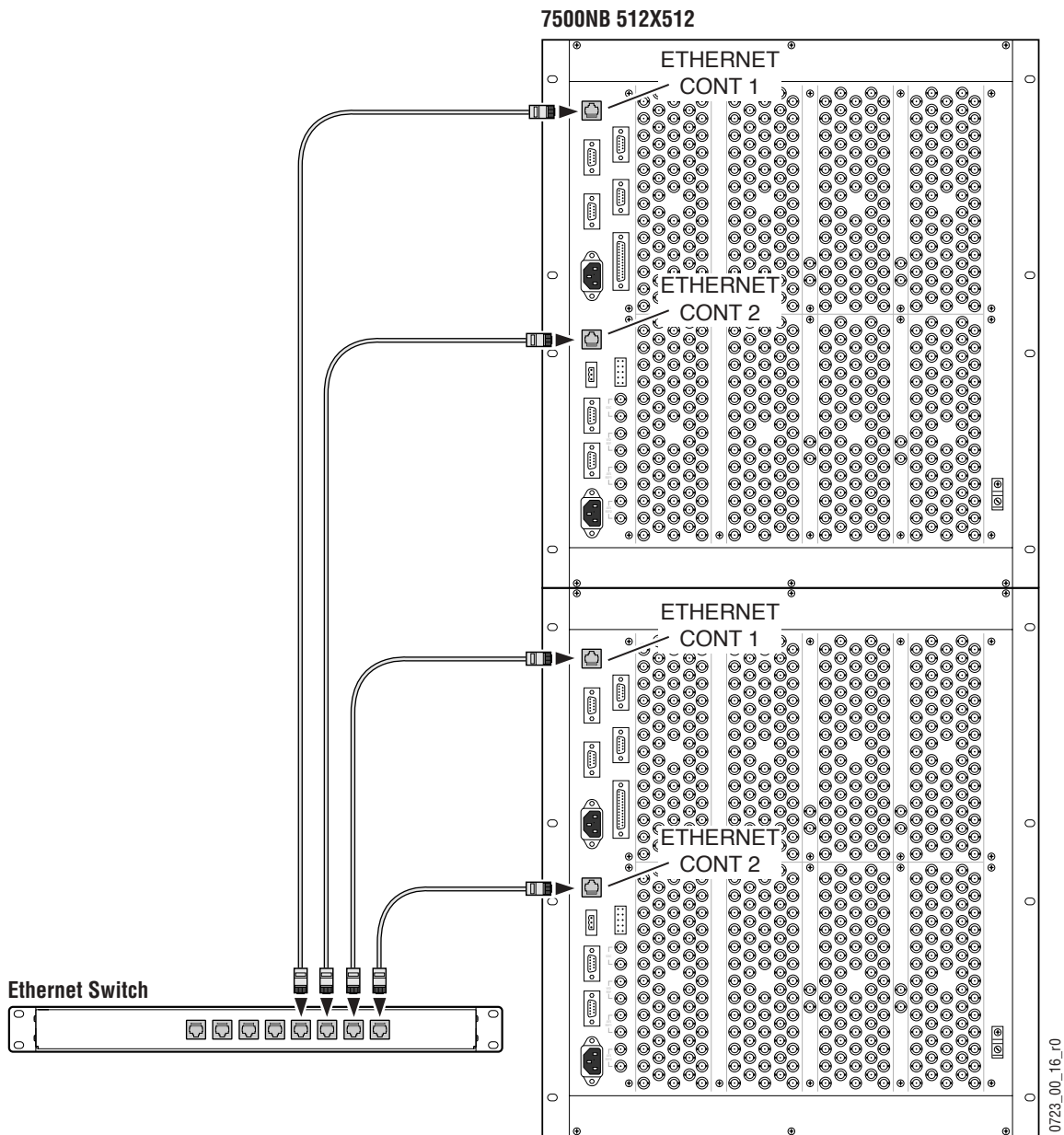
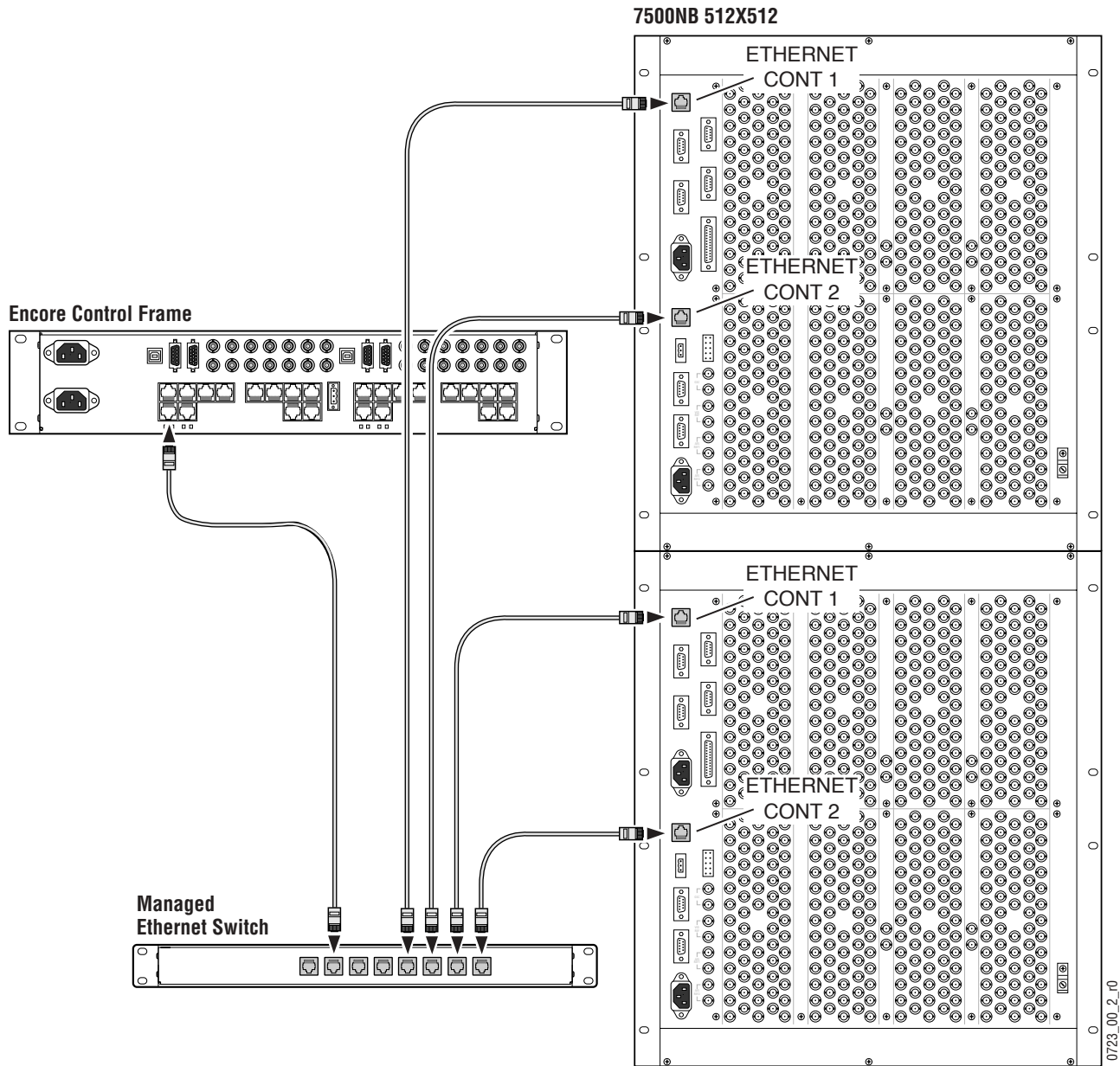


Figure 14 shows all the Ethernet connections for using a 7500NB 512x512 with an Encore Control System.

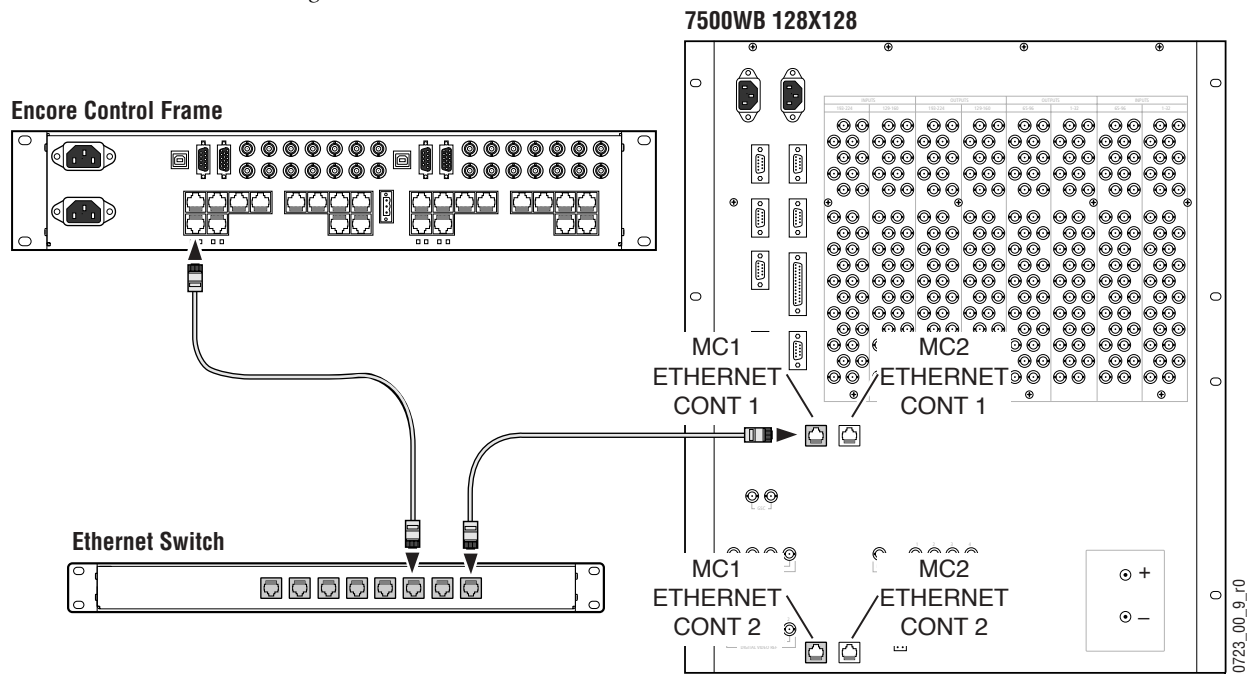
Figure 14. Ethernet Communication Connections Between Expanded 7500NB and Encore



7500WB Ethernet

Ethernet communications can be established between the Encore Control Frame and a 7500WB matrix using either **MC1 ETHERNET CONT 1** or **MC1 ETHERNET CONT 2**. One connection can be used as a primary connection and the other can be used as a redundant connection. **MC2 ETHERNET CONT 1** and **MC2 ETHERNET CONT 2** are reserved for future use.

Figure 15. WB and Encore Ethernet Connectors

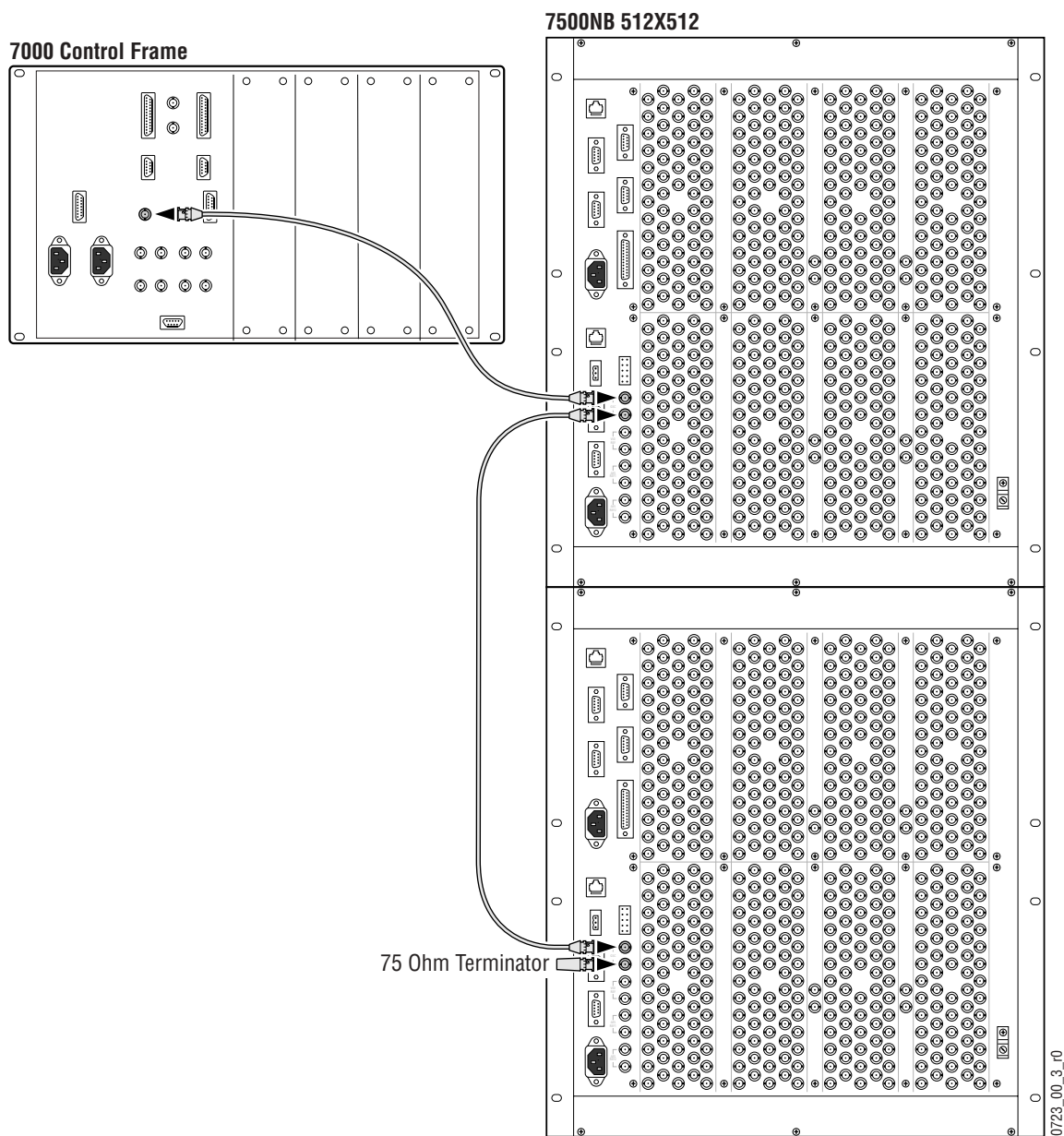


Global Serial Channel

The Global Serial Channel (node bus) must be daisy chained from the control frame, between matrices, and terminated at the end of the bus as shown in [Figure 16](#).

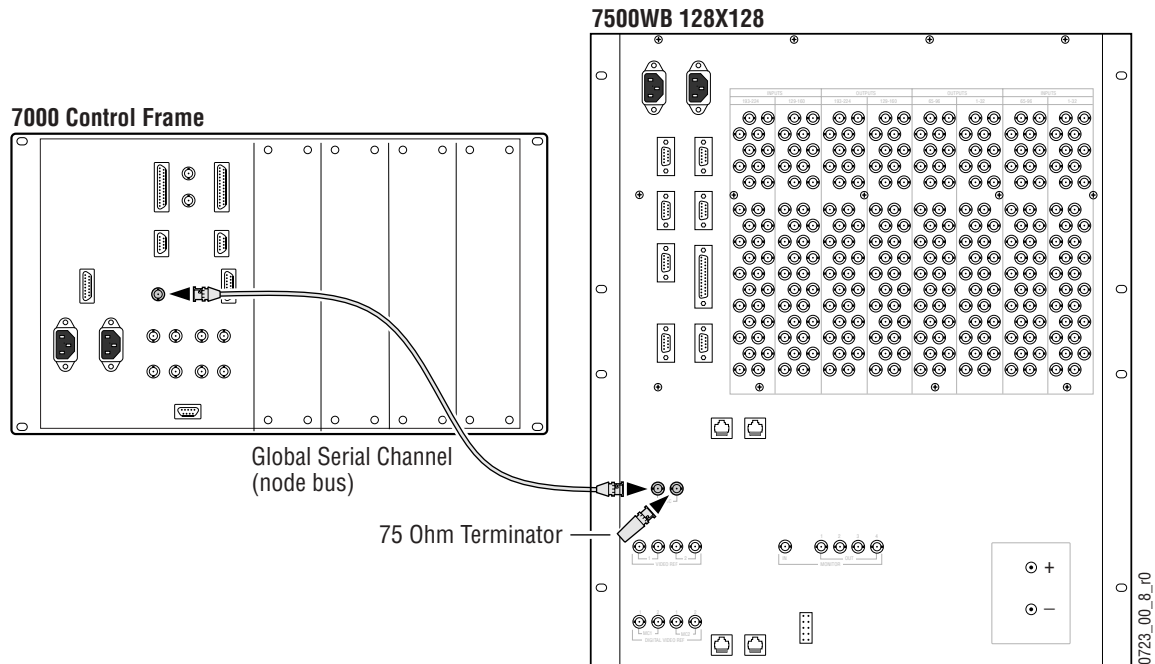
Note 7500NB systems 512x512 and larger require Ethernet cabling to communicate between matrices. See [7500NB Ethernet on page 15](#) for Ethernet requirements.

Figure 16. NB Global Serial Channel Connectors



The 7500WB Global Serial Channel connection has the same requirements as the 7500NB. See [Figure 17](#).

Figure 17. WB Global Serial Channel Connectors



References

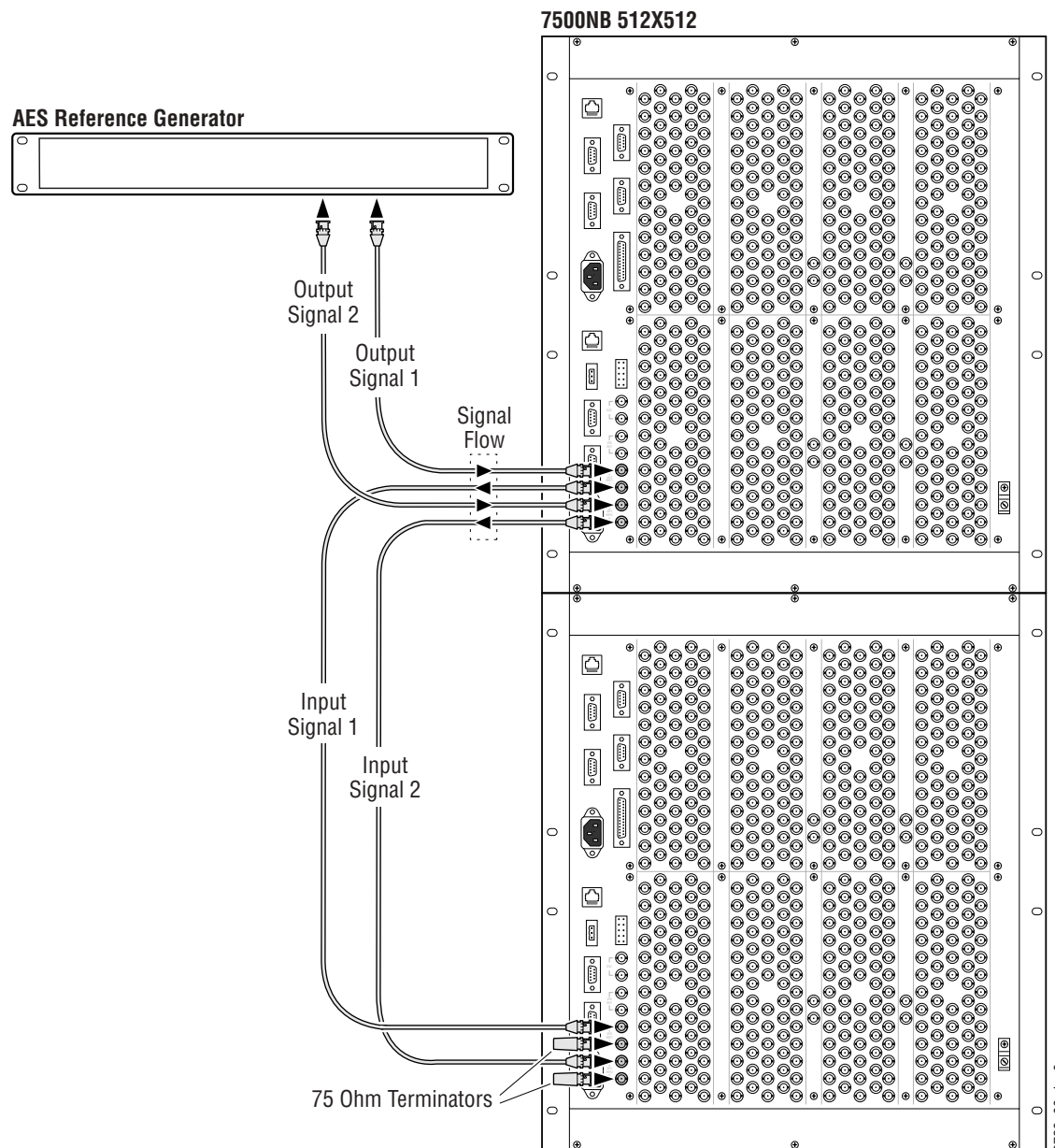
7500NB AES Reference

7500NB systems have dual AES reference inputs. Two AES sync reference loop-thru inputs provide a 48 kHz AES formatted signal upon which the router bases its re-synchronization to frame and block boundaries. This signal is assumed to be present for the router to be called synchronous. Two inputs are provided for redundancy. In the event of loss of one AES reference the router will default to the second reference if one is present, otherwise, it will default to asynchronous operation.

In systems with mixed module types (async and sync input and output modules) the reference signal is required for the synchronous modules to function properly. In systems that contain only asynchronous input and output modules the reference signal is not required.

[Figure 18](#) shows the flow of the AES reference signal. All signals have to be terminated at the end of the flow. Cables must be as short as possible and each cable pair must be the same length. Input Signal 1 and Input Signal 2 is one cable pair. Output Signal 1 and Output Signal 2 is another cable pair.

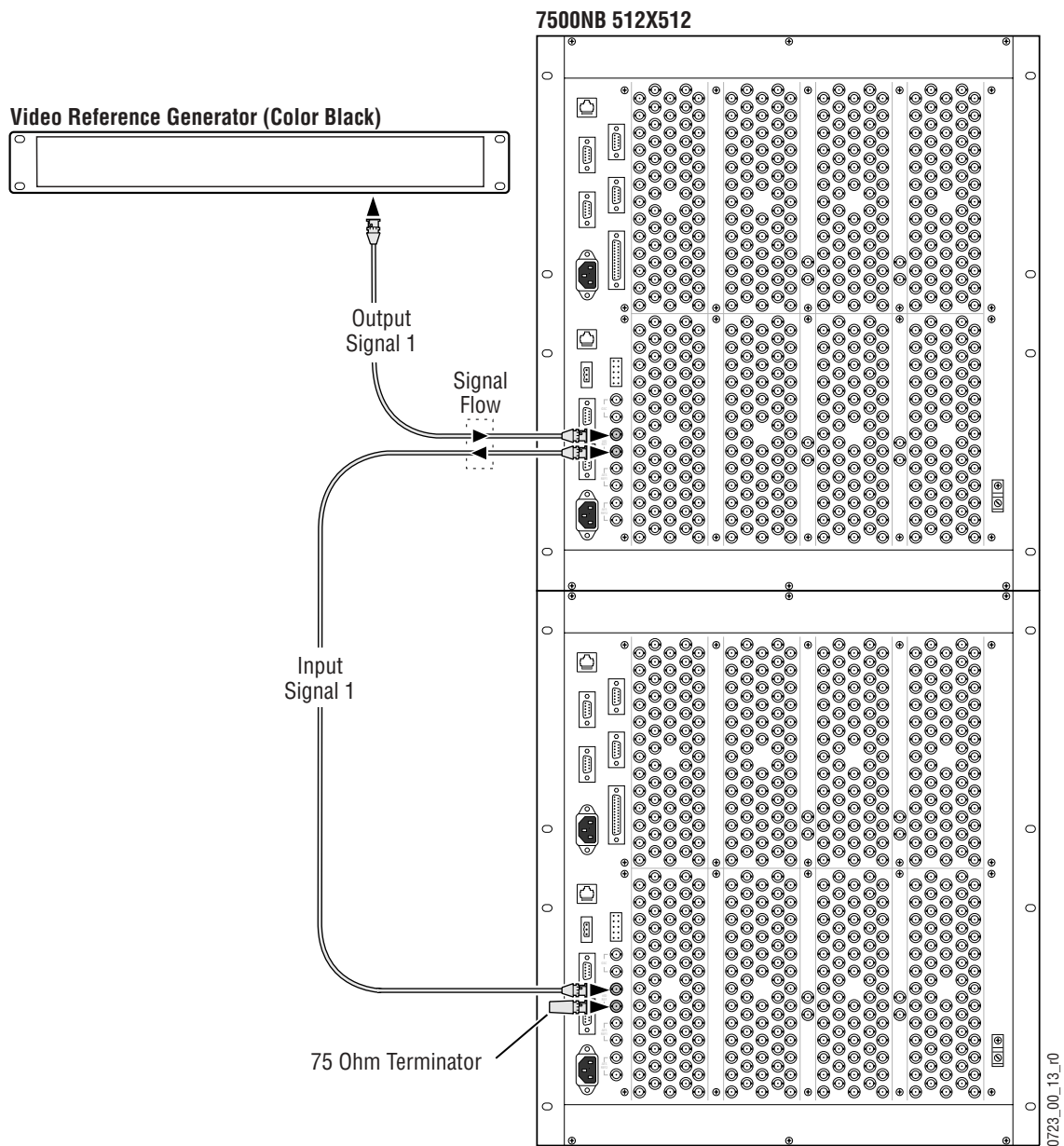
Figure 18. NB AES Reference Connectors



7500NB Video Reference

The 7500NB requires a Video Reference. Any Composite Analog Video Sync signal will work. Color Black is recommended. See [Figure 19](#).

Figure 19. NB Video Reference Connectors

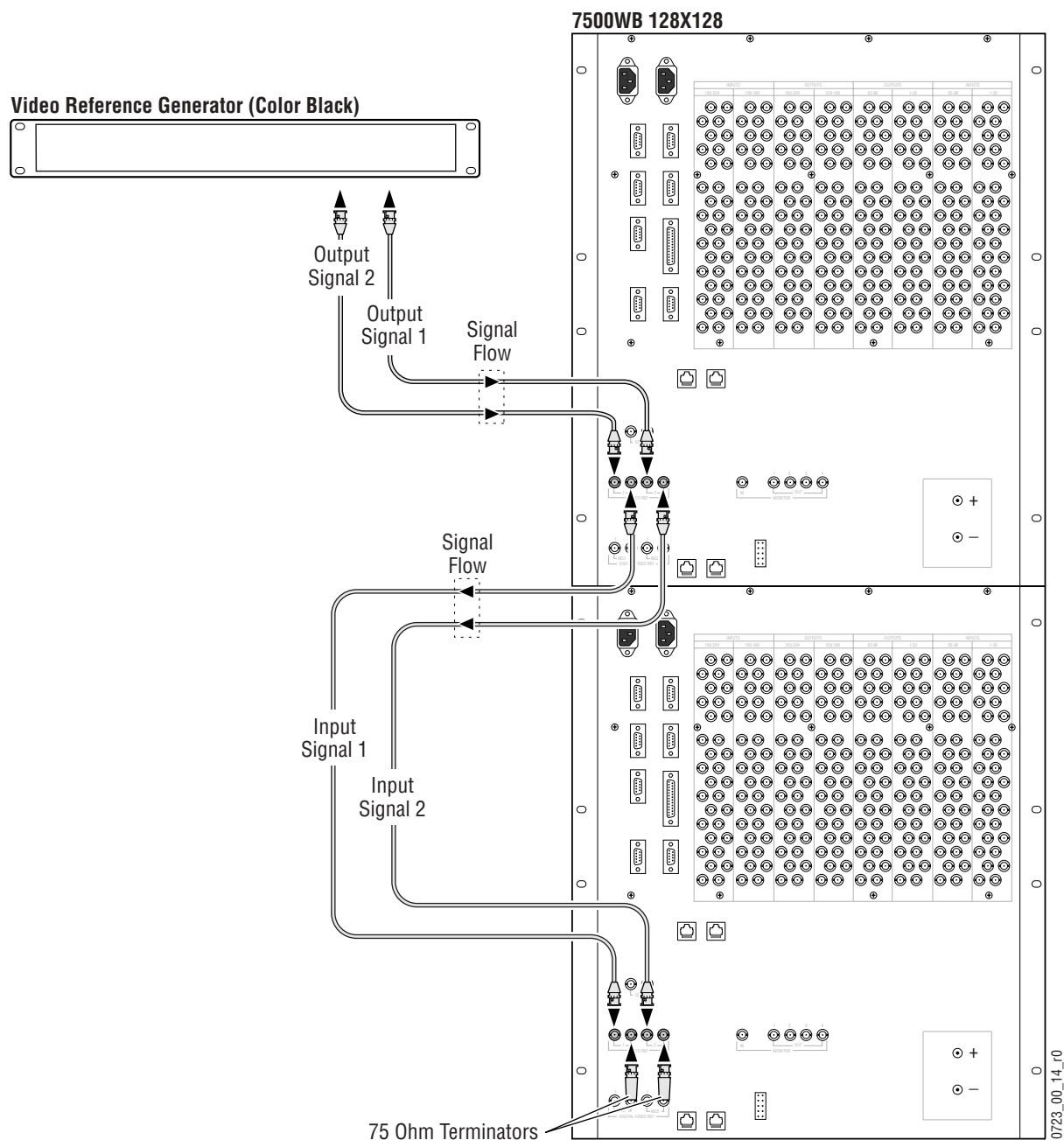


7500WB Video Reference

The 7500WB Video Reference is used to determine the router switch point. Two sets of video references allow the router to switch on two different vertical rates. Any Composite Analog Video Sync signal will work. Color Black is recommended. See [Figure 20](#).

The 7500 WB Digital Video References are not currently used.

Figure 20. WB Video Reference Connectors



Power

Frames may be powered using either an AC power source, or a 48V DC power source. It is also possible to cable a matrix using an AC power source and a 48V DC power source at the same time. If a matrix has both AC and DC power sources available it will use whichever power source can meet its power level demand. So if the AC power source fails then the DC power source would feed the matrix, and if the DC power starts to fall the AC power would feed the matrix. AC and DC power sources are kept separate with no feedback, so the AC power source will not charge batteries used in a connected DC power source.

AC Connections

The 7500NB 256x256 and the 7500WB 128x128 come with one power supply. The 7500WB 256x256 comes with two power supplies. Redundancy is provided by adding additional power supplies.

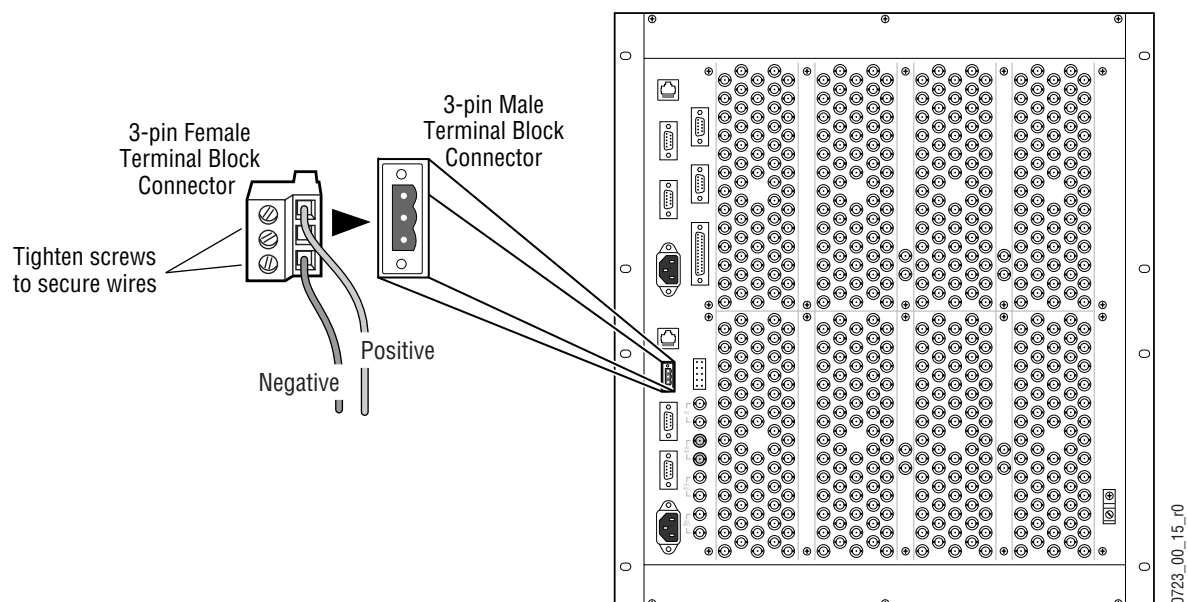
48V DC Connections

WARNING Do not apply a 48V DC power source until all 48V DC connections on the 7500 matrices are complete and secure.

7500NB 48V DC

The 7500NB 48V DC connection requires 12 AWG (3.31 mm²) wire and a 3-pin female terminal block connector. See [Figure 21](#).

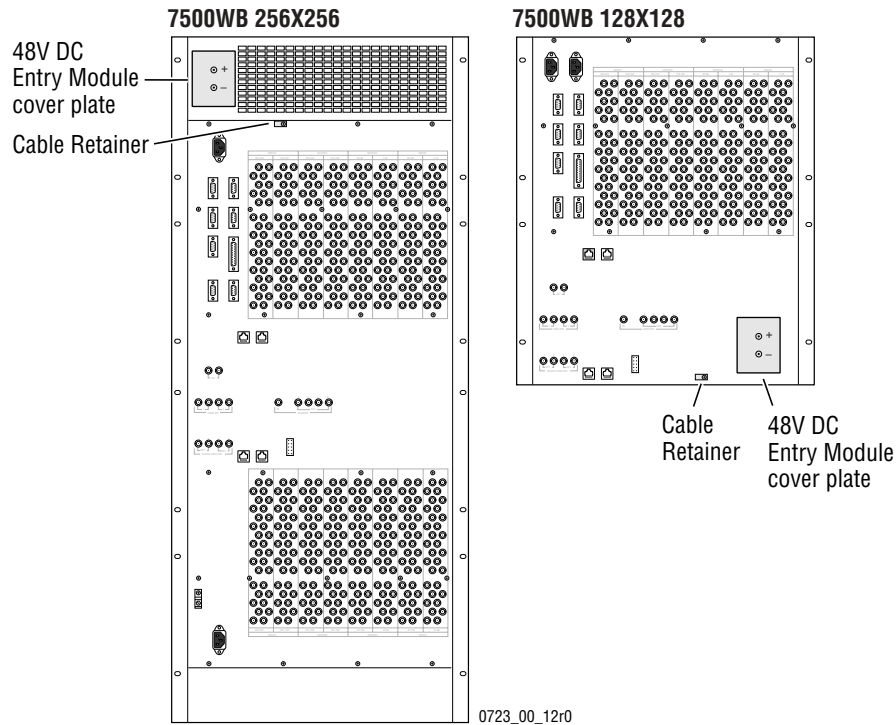
Figure 21. NB 48V DC Connection



7500WB 48V DC

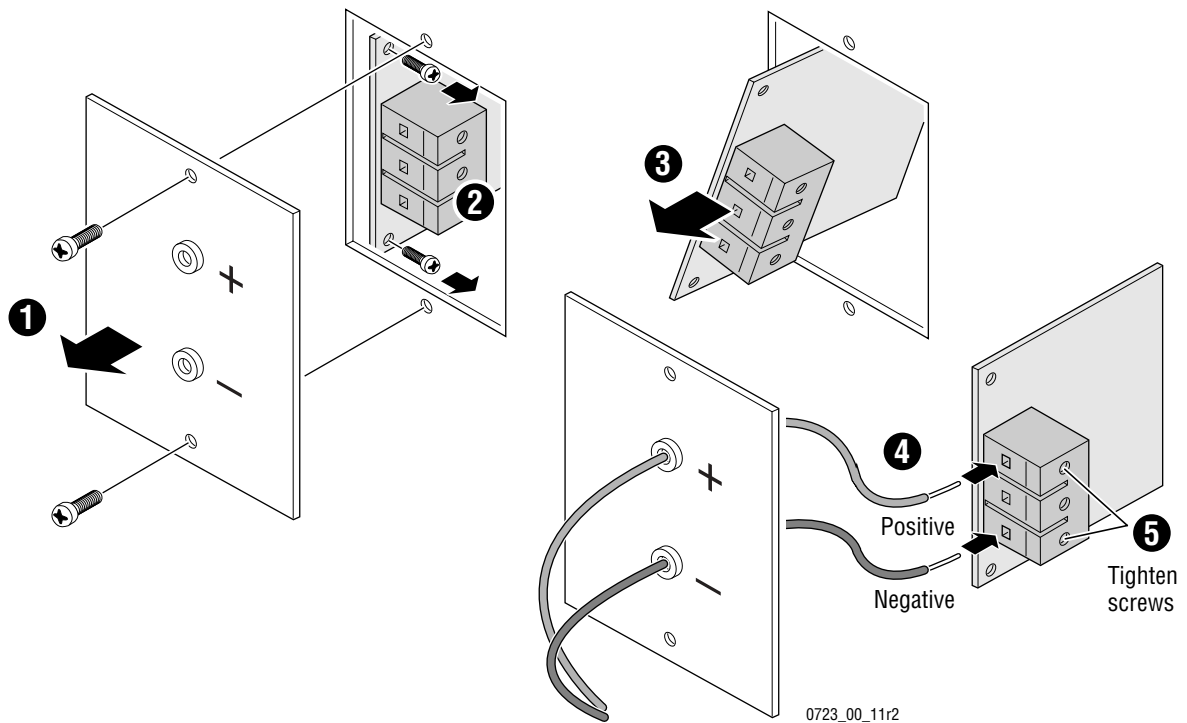
Refer to [Figure 22](#), [Figure 23](#), and [Figure 24](#) when performing the following procedure.

Figure 22. WB 48V DC Cover Plate and Retainer Locations



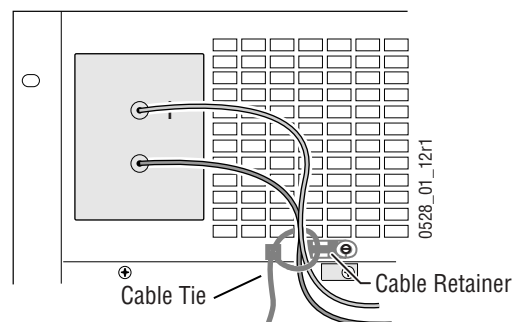
1. Remove cover screws. Set cover aside.
2. Remove screws from 48V DC Entry module.
3. Remove 48V DC Entry module.
4. Thread a 6 AWG (13.30 mm²) positive connector wire through the top hole on the cover.
5. Secure wire to 48V DC Entry module by inserting the wire in the top slot and tightening the retention screw.

Figure 23. WB 48V DC Connector



6. Thread a 6 AWG (13.30 mm²) negative connector wire through the bottom hole on the cover.
7. Secure wire to 48V DC Entry module by inserting the wire in the bottom slot and tightening the retention screw. The middle slot is not used.
8. Reseat the 48V DC Entry module in the matrix.
9. Secure the 48V DC Entry module with screws.
10. Replace the cover and secure with screws.
11. Restrain wires using a cable tie looped through the retainer on the back of the frame.

Figure 24. WB 48V DC Cable Retainer and Tie



Mechanical and Power Specifications

Table 4. 7500 Mechanical and Power Specifications Maximum Configuration

Component	Depth ^a	Width	Height	Weight	Rack Units	Voltage Input	Power Consumption (Maximum)
7500NB256X256B/D	483 mm 19 in.	483 mm 19 in.	534 mm 21 in.	46.7 kg. 103 lbs.	12	100-240 V AC or 36-60 V DC	120 W
7500NB512x512B/D	483 mm 19 in.	483 mm 19 in.	1067 mm 42 in.	104.3 kg. 230 lbs.	24	100-240 V AC or 36-60 V DC	300 W
7500WB128x128	483 mm 19 in.	483 mm 19 in.	578 mm 22.72 in.	47.6 kg. 105 lbs.	13	100-240 V AC or 40-56 V DC	900 W
7500WB256x256	483 mm 19 in.	483 mm 19 in.	1110 mm 43.72 in.	81.7 kg. 180 lbs.	25	100-240 V AC or 40-56 V DC	1800 W

^a Allow a minimum of four inches behind the frames for cabling

Performance and Environmental Specifications

7500NB

Table 5. 7500NB256x256 and 512x512

AES Inputs		
Signal Format		SMPTE-276-M (AES/EBU)
Input Voltage		200 mV to 5V p-p
Impedance/Connector	BNC unbalanced	75 Ohms
	50-pin D balanced	110 Ohms
Return Loss		>15dB 0.1-1 MHz 25dB @ MHz
Cable EQ		None
Jitter Tolerance		+/- 1/2 UI
AES Outputs - Including Monitors		
Signal Format		SMPTE-276-M (AES/EBU)
Output Voltage	Balanced	1V p-p
	Unbalanced	4V p-p
Impedance/Connector	BNC unbalanced	75 Ohms
	50-pin D balanced	110 Ohms
Rise-time		15-30 ns
Return Loss		>15dB 0.1-1 MHz 25dB @ MHz
Input-to-Output Delay		3-4 AES Frames
Output Jitter		TBD

Table 5. 7500NB256x256 and 512x512 - (continued)

Reference Video Input	
Type	NTSC or PAL color black
Impedance/Connector	High/looping BNC
Return Loss	>25dB 0.1-5 MHz, 75 ohm termination
Audio Reference Inputs 1 and 2	
Type	SMPTE-276-M (AES/EBU) audio black not necessary
Impedance/Connector	High/looping BNC
Return Loss	>15dB 0.1-6 MHz, 75 ohm termination
Node Bus Input	
Type	SMS-7000 Node Bus proprietary Global Serial Channel
Impedance/Connector	High/looping BNC
Return Loss	>25dB @ 1 MHz, 75 ohm termination
Environment	
Operating Temperature	0-to-40 degrees C

7500WB

Table 6. 7500WB128x128 and 256x256

Video Inputs		
Format		SMPTE-259, SMPTE-292
Voltage		800 mV ± 10%
Impedance / Connector		75 ohms, unbalanced BNC
Return Loss		> 15 dB 1 MHz ≥ 1.5 GHz, self terminating, 20 dB typical
Cable Equalization	1694A	100 meters maximum all formats
	7731A	200 meters maximum all formats
Video Outputs (including monitors)		
Format		SMPTE-259, SMPTE-292
Voltage		800 mV ± 10%
Rise time		SMPTE-292 R AC
Impedance / Connector		75 ohms unbalanced BNC
Return Loss		> 15 dB 1 MHz -> 1.5 GHz, self terminating, typical
Output Jitter (reclocked)		< 0.2 unit interval
Output Reclocking		143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps, 540 Mbps, 1.485 Gbps
Output Non-reclocking Bypass		10 Mbps ≥ 500 Mbps
Input To Output Delay		28 nanoseconds ± 2 nanoseconds
Input To Output Delay Match		± 5 nanoseconds
Video Reference 1 & 2 Input		
Type		NTSC or PAL color black
Impedance / Connector		High looping BNC
Return Loss		> 25 dB @ 1 MHz, when terminated into 75 Ohms

Table 6. 7500WB128x128 and 256x256 - (continued)

Vertical Interval Switch			
VI1, Video Reference 1	525/625 Mode		Middle of the line ± 5 microseconds - 0, + 0, field latency
	Pulse Mode		2 microseconds or less from rising edge, - 0, + 1 field latency
VI1, Video Reference 2 Using SMS 7000 Control System	525/625 Mode		Middle of the line ± 12 microseconds - 0, + 0, field latency
	Pulse Mode		- 5.5 + 7.5 microseconds or less from rising edge, - 0, + 1 field latency
Impedance / Connector			High looping BNC
Return Loss			> 25 dB @ 1 MHz, when terminated into 75 ohms
Node Bus Input			
Type			SMS7000 Node Bus proprietary Global Serial Channel
Impedance / Connector			High, looping BNC
Return Loss			> 10 dB @ 1 MHz, when terminated into 75 ohms
Ethernet Port			
Connector			RJ45
Power Supply			
Mains AC Voltage			100-240 V 50/60 Hz
AC Current	128x128	100-120 V	8 amps maximum
		200-240 V	4 amps maximum
	256x256	100-120 V	16 amps maximum
		200-240 V	8 amps maximum
DC Voltage			48 V DC nominal (40-56 V DC)
DC Current	128x128	22 amps DC nominal @ 48 V in	
	256x256	33 amps DC nominal @ 48 V in	
Environmental			
Operating Temperature			0-40 degrees C (32-104 degrees F)
Operating Humidity			10-90% non-condensing
Static Withstand			1.5 k V (330 ohms, 150 pF)



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