

Installation Planning Guide

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SERIES 7000HD
SIGNAL MANAGEMENT SYSTEM

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Installation Planning Guide

Series 7000-HD

The Series 7000-HD expands the multiformat routing capability of the Series 7000 Signal Management System to include routing of full bandwidth High Definition Television (HDTV) signals. Series 7000-HD components are compatible with existing Series 7000 matrices and control panels.

32x32HD

The 32x32HD has 32 inputs and 32 single outputs. It was designed to switch uncompressed serial digital SMPTE 292M at 1.485 Gbps rate and in non-reclocking mode to handle data rates from 10 Mbps to 700 Mbps.

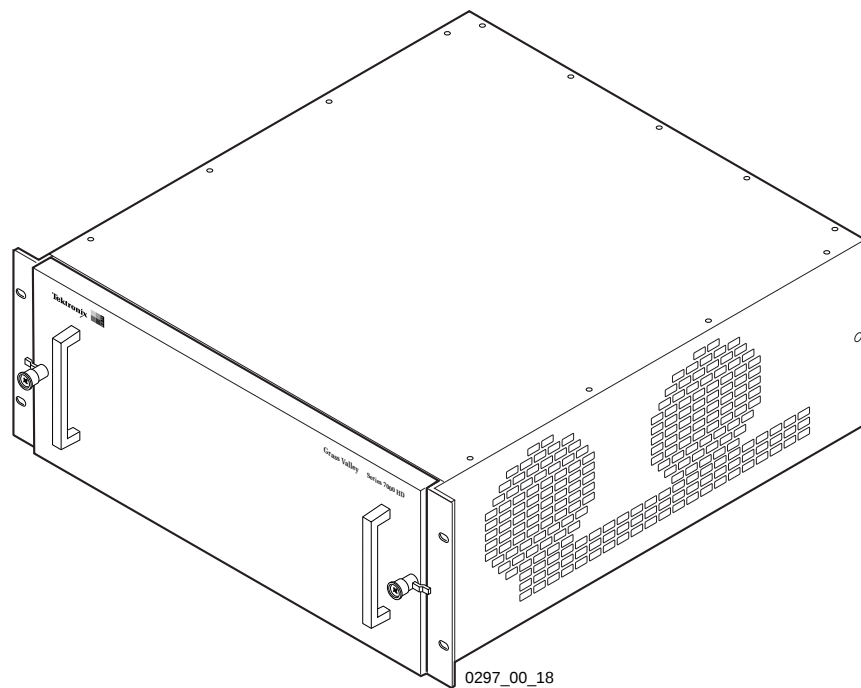


Figure 1. 32x32HD Router

Table 1. 7000-HD Mechanical Specifications

Component	Configuration	Depth	Width	Height	Weight	Rack Units
32x32HD	32x32	489 mm 19.25 in.	432 mm 17 in.	178 mm 7 in.	19.99 kg. 44 lbs.	4
	16x16	489 mm 19.25 in.	432 mm 17 in.	178 mm 7 in.	17.69 kg. 39 lbs.	4

Installation

The Series 7000-HD routers are added to existing Series 7000 systems as new frames. They are installed in a standard 483 mm (19 in.) equipment rack.

32x32HD Rack installation

The 32x32HD router is four rack-units high. Cooling is by horizontal air-flow using a two fan vertically mounted module on one side of the frame and an air filter on the other side. The video, controller, and power supply modules are mounted horizontally. The front of 32x32HD frame is shown in [Figure 2](#) with the cover removed. The front cover should remain in place during normal system operation.

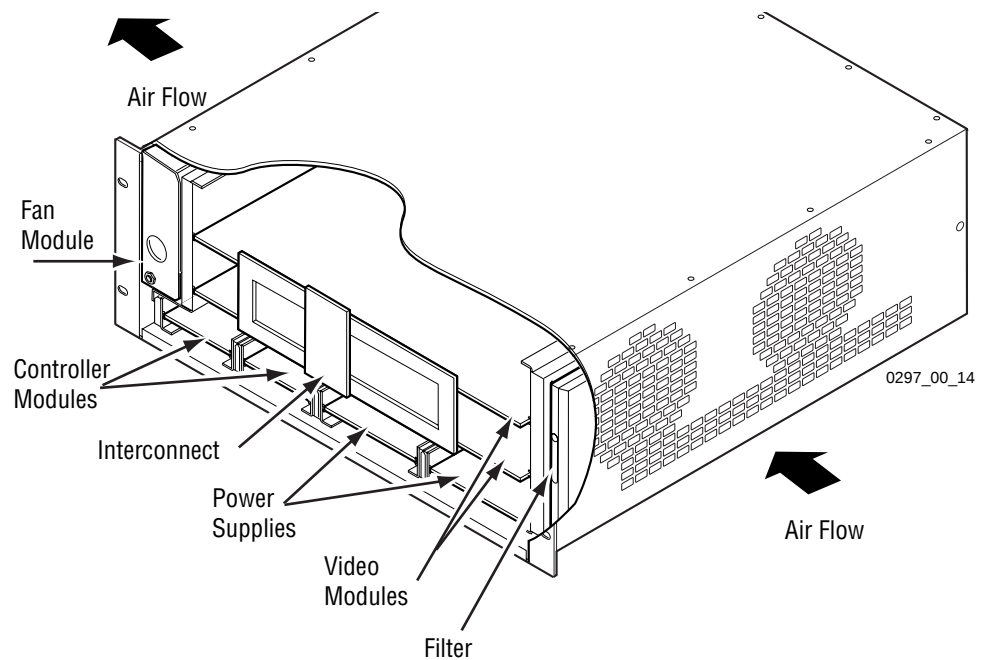


Figure 2. 32x32HD Router Module Configuration

Use screws specified by the rack manufacturer (not supplied) to secure the frame in the equipment rack. Place a screw in every mounting slot in the frame.

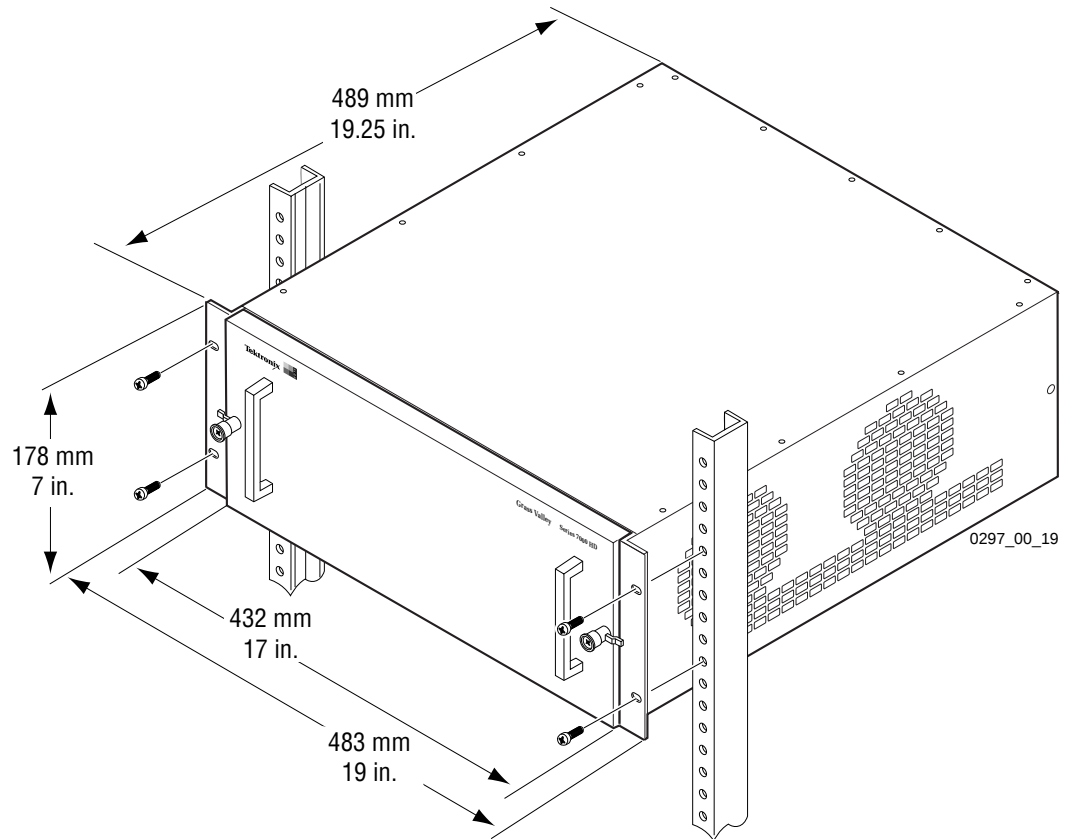


Figure 3. 32x32HD Rack Mount

CAUTION When installing a 32x32HD router in a frame with other Series 7000 components keep the 32x32HD router out of the airflow path of the vertically cooled components.

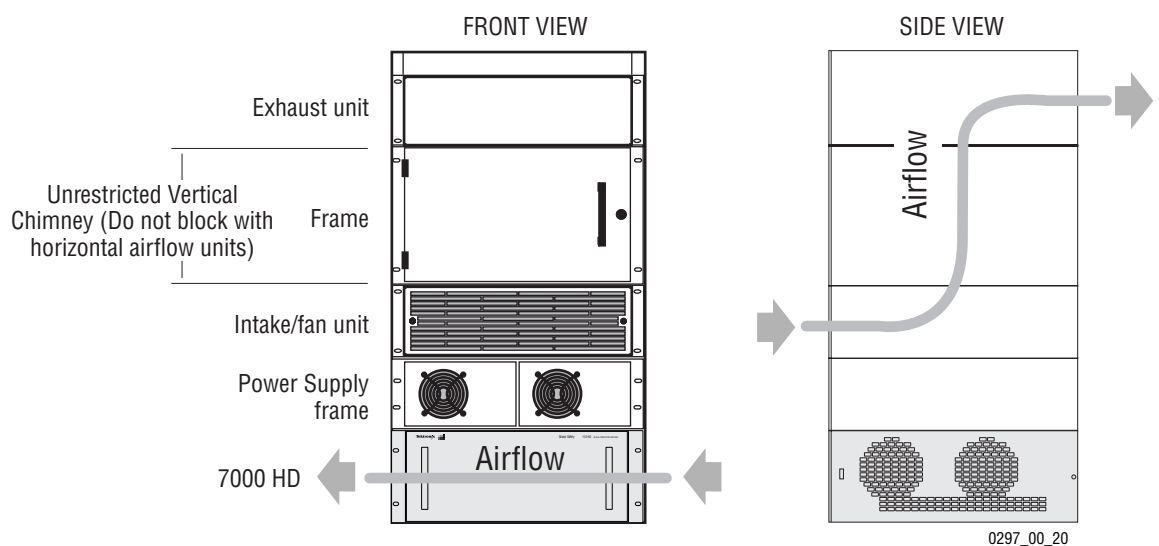


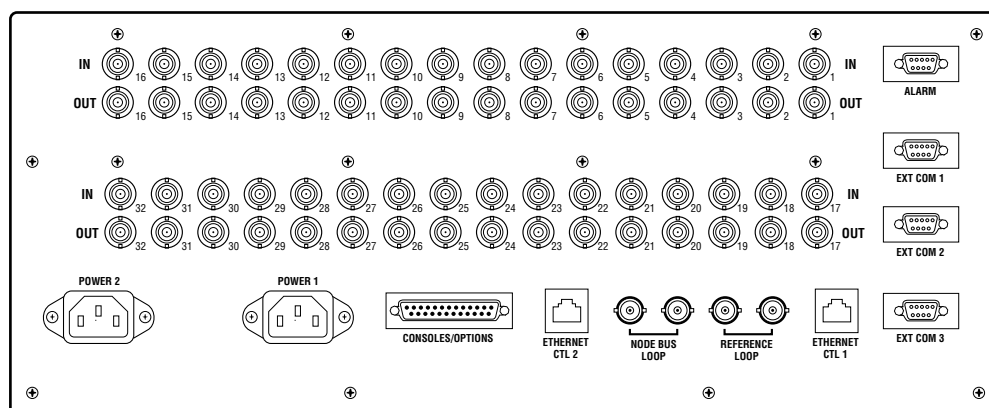
Figure 4. 32x32HD Installation Examples

System Cabling

Series 7000-HD routers use various types of connectors to interface with other components in a system.

32x32HD Cabling

Power, control, and video connections are made to the rear of the electronics frame ([Figure 5](#)).



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Figure 5. 32x32HD Connections

Typical 32x32HD system connections are listed in [Table 2](#).

Table 2. 32x32HD Connectors

Connector	Type	Use
1-32 IN	75 Ohm BNC	Inputs
1-32 OUT	75 Ohm BNC	Outputs
REFERENCE LOOP	75 Ohm BNC	Video Reference
NODE BUS LOOP	75 Ohm BNC	Control Interconnect Cabling
POWER 1 and 2	IEC Filtered AC	AC Power
CONSOLE/OPTIONS	25-Pin Female D	Optional Interface with M2100 and Future Use
ALARM	9-Pin Female D	Future Use
EXT COM 1, 2, and 3	9-Pin Female D	Future Use
ETHERNET CTL 1 and 2	Network/RJ-45	Future Use

Specifications

Table 3. 32x32HD Specifications

Video/Data Inputs	
Type	Serial Digital conforming to SMPTE 292M
Connector	75 Ohm BNC
Quantity	32 Non Looping
Return Loss (1MHz to 1500MHz)	15 dB minimum
Cable Equalization	Automatic for up to 100m of Belden 1694A @ 1.5 Gbps Automatic for up to 100m @ 270 Mbps
Video/Data Outputs	
Type	Serial Digital conforming to SMPTE 292M
Connector	75 Ohm BNC
Quantity	32
Return Loss (1MHz to 1500MHz)	10 dB minimum
Output Signal Amplitude	800 mV + 10% when terminated into 75 Ohms.
Output DC Offset	+ 0.5 V when terminated into 75 Ohms.
Rise/Fall times	<220 pS (measured from 20% to 80), when terminated into 75 Ohms.
Operational Modes/Performance	
Reclocked	1.485 Gbps
Reclocked Jitter	<100 pS
Non Reclocked	Operation from 10Mbit/s to 700Mbit/s with signals that have a maximum ones/zeros ratio of 20:1
Non Reclocked Jitter Addition	<150 pS
Input to Output delay	11nsec +/- 1.25nS, Reclocked. 10.34nsec +/- 1.25nS, Non Reclocked
Vertical Interval Switch	Software controlled, with respect to the Analog Reference Input
Reference Input	
Type	Analog PAL or NTSC Color Black.
Connectors	2 BNCs configured as Loop-Through.
Level	300mV +/- 100mV Sync Amplitude When terminated in 75 Ohms.
Return Loss	> 30 dB to 5MHz
Node Control (Node Bus)	
Type	1Mbit/s Serial Bus
Quantity	1 High Impedance Loop Through
Connector	BNC
Level	1Vpp to 8Vpp Pulse Amplitude
Return Loss	>20 dB to 1MHz

Table 3. 32x32HD Specifications

Consoles/Options	
Type	Dual Purpose; 2 RS232 console ports with Controller installed or MEDIC bus access via terminator module installed in place of the Controllers
Quantity	1
Connector	D Type, 25p
External Comm Ports	
Type	RS422 Serial Ports, Software determines usage (not specified)
Quantity	Total 3
Connector	D Type, 9p
Ethernet Ports	
Type	10 Base T
Quantity	Total 2
Connector	RJ-45
Frame Power	
Connector Type	IEC Filtered AC connector
Quantity	2
Voltages	90-240 VAC, converted to +24VDC internal bus.
Frame Power Consumption	120W
Fuses	
Video Module	7 amp 125V (F) F1 Fast
Controller Module	3 amp 125V (F) F1 Fast
Environmental	
Operating Temperature	0 to 40 degrees Centigrade ambient
Relative Humidity	0 to 90% non-condensing.



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