

# 4K 18Gbps HDMI Video Matrix Switch: 16x16, 32x32

VEEMUX®

Route Ultra-HD 4Kx2K 60Hz 4:4:4 18Gbps HDMI video and embedded audio signals from many video sources to multiple displays.

- Configure and control the switch through front panel buttons, Ethernet, RS232, or optional IR remote control.
  - Control4® certified.
    - ♦ Module controls routing, reset, and status RS232 functions.
- Supports resolutions up to Ultra-HD 4Kx2K (3840x2160 and 4096x2160 @24/30/60Hz RGB/YUV 4:4:4).
- Each input can be independently connected to any or all outputs.
- HDCP 2.2 and 1.4 compliant.
- HDMI features supported:
  - HDMI 2.0
  - Dolby TrueHD, DTS-HD Master Audio, Dolby Digital, DTS 7.1 and LPCM audio passthrough
  - RGB, YUV 4:4:4, YUV 4:2:2, and YUV 4:2:0
  - 12-bit Deep Color
  - HDR
  - 3D
  - Bandwidth up to 600 Mhz (18 Gbps)
- EDID learning for the support of any HDMI display device.
- Selectable built-in EDID table.
- Compact case – 16x16 in 1RU and 32x32 in 2RU.
- Cable management tray included.



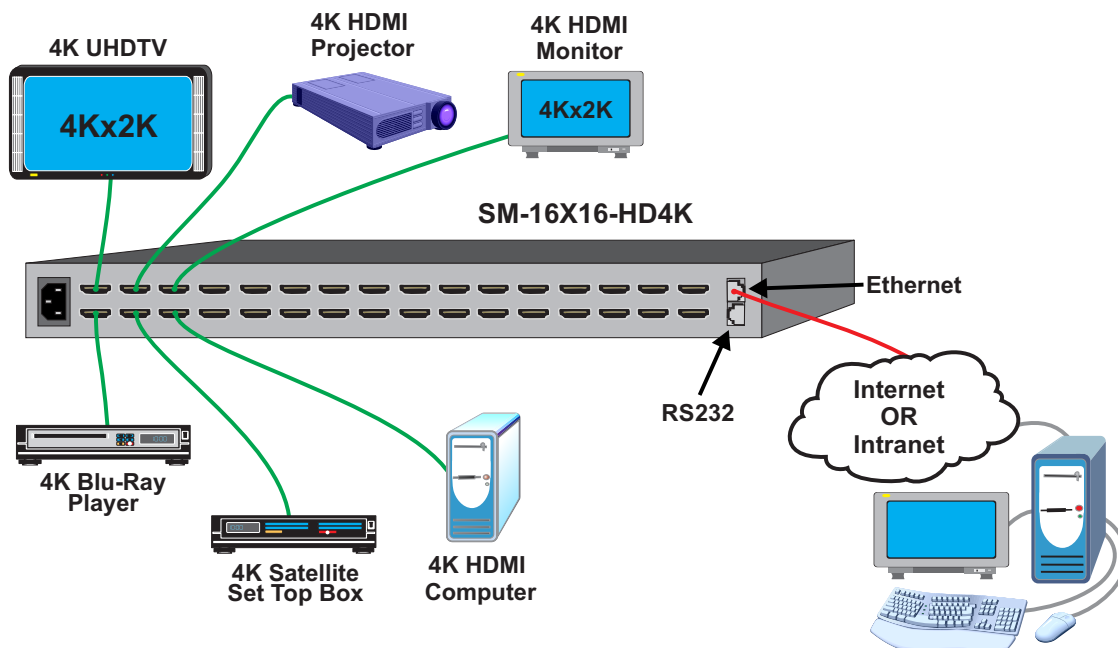
VEEMUX® SM-16X16-HD4K (Front & Back)



The VEEMUX® 4K HDMI Video Matrix Switch routes digital 4Kx2K HDMI video and embedded audio signals from up to 32 HDMI video sources (computers, Blu-Ray players, satellite receivers, etc) to up to 32 displays (monitors, 4K TV's, projectors, etc).

- Resolutions to Ultra-HD 4Kx2K 60Hz 4:4:4
- 18Gbps bandwidth
- HDMI 2.0, HDCP 2.2
- Compact case with fixed I/O – 16x16 in 1RU & 32x32 in 2RU
- IR, RS232, Ethernet control
- Control4® certified.

## Configuration and Cable Illustration



Route Ultra-HD 4Kx2K 60Hz 4:4:4 18Gbps HDMI video and embedded audio signals from many video sources to multiple displays.

## Specifications

### Video Input

- Female HDMI input connectors.
- Compatible with computers and UHD video sources (satellite receivers, Blu-Ray players, etc) with HDMI video.
- Supports HDCP 2.2/1.4
- Multiplatform support: Windows 7/8/10/11, Windows Server 2008/2012/2016/2019/2022, Solaris, Linux, FreeBSD, and MAC OS 10/11/12/13

### Video Output

- Female HDMI output connectors.
- Supports resolutions up to Ultra-HD 4Kx2K (3840x2160 and 4096x2160 @24/30/60Hz RGB/YUV 4:4:4).
- Supports HDCP 2.2/1.4
- Max data rate: 18Gbps

### Protocols

- HTTP, HTTPS
- TCP/IP, DHCP, UDP, ARP, TLS v1.2
- IPV4

### Power

- Input: 100 to 240 VAC at 50 or 60 Hz via IEC connector. (Country-specific power supply cable included.)
- Power consumption for SM-16X16-HD4K: 150W max

### Dimensions

- SM-16X16-HD4K WxDxH
  - Without cable management tray: 19x14.56x1.75 in (483x370x44 mm).
  - With cable management tray: 19x18.36x1.75 in (483x466x44 mm).
- SM-32X32-HD4K WxDxH
  - Without cable management tray: 19x18.57x3.5 in (483x472x88 mm).
  - With cable management tray: 19x22.48x3.5 in (483x571x88 mm).

### MTBF

- SM-16X16-HD4K: 25,024 hours.

### Regulatory Approvals

- CE, RoHS
- TAA compliant

### Environmental

- Operating temperature: 32 to 104°F (0 to 40°C).
- Storage temperature: -22 to 140°F (-30 to 60°C).
- Operating and storage relative humidity: 5 to 90% non-condensing RH.

### Warranty

- Two years

### Cables

- Interface cables between the video sources/displays and the switch are required for proper operation.
  - Supports cable lengths to 20 feet for 4Kx2K resolutions at 60Hz and lengths to 50 feet for 1080p at 60Hz using passive HDMI cables.
    - ♦ Cables longer than 50 feet can be used provided they have a built-in video equalizer (also known as “active HDMI cables”).
- Use HD-xx-MM HDMI cables to connect an HDMI source or display.
  - HD-3/6/10/15-MM supports resolutions to 4K@60Hz.
  - HD-25/30/50-MM supports resolutions to 1080p@60Hz.
- Use HD-ACT-xx-MM 4K HDMI Active Cables to connect an HDMI source or display up to 100 feet.
  - HD-ACT-20/25/30/40/50/60-MM supports resolutions to 4K@60Hz (18 Gbps).
  - HD-ACT-75/100-MM supports resolutions to 4K@30Hz (10.2 Gbps).
- Use DP-HD-xx-MM cables to connect a DisplayPort source up to 15 feet away from the switch.
  - Supports resolutions up to 4k@30hz 4:4:4 and 4K@60Hz 4:2:0.
- Cables not included.

### Compatible NTI Products

- Combine NTI’s extenders, switches, splitters and cables for complex applications
  - 4K HDMI Extender via One CATx (ST-C64K-300)
    - ♦ Supports resolutions up to 4k@30hz
  - 4K HDMI Active Optical Cable (HD4K18GB-FO-xxM-MM)
  - 4K@30Hz HDMI Active Cables with Built-In Signal Booster (HD-ACT-xx-MM)
  - DisplayPort to HDMI Interface Cables, Male to Male, 4K (DP-HD-xx-MM)
    - ♦ Supports resolutions up to 4k@30hz 4:4:4 and 4K@60Hz 4:2:0.

Route Ultra-HD 4Kx2K 60Hz 4:4:4 18Gbps HDMI video and embedded audio signals from many video sources to multiple displays.

## Control Methods

### Ethernet Control

- Standard control method.
- Configuration can be done over the Internet via Web server or Telnet.
- Female RJ45 connector.
- 10/100 BaseT Ethernet interface.
  - **Web Server**
    - ◆ Security is ensured by password and user configurable timeout.
    - ◆ Up to 25 users can access the web page at one time.
    - ◆ The user can access the following pages:
      - Switch page: allows the user to connect any input to any output, save and recall up to ten connections.
      - Administration pages: administrator can access pages for system configuration, network configuration, naming video inputs/outputs, scanning sequence, DDC options, changing password, and updating firmware.
      - Standby Mode page: allows the user to quickly place the switch in standby mode.
      - Support page: provides links to the product manual and firmware downloads webpage.
      - Reboot page: allows the user to quickly reboot the switch.
  - **Telnet**
    - ◆ Security is ensured by password.
    - ◆ Up to 25 users can access the telnet connection at one time.
    - ◆ Commands are similar to RS232 commands.
    - ◆ The telnet server listens on ports 2000 and 2005.
      - Port 2000 is for an operator telnet session.
      - Port 2005 is intended for a software control type session using raw TCP communication.

### Front Panel Interface

- Standard control method.
- Configuration and control can be done using the front panel buttons.
- Keypad allows selection of the input source to be routed to the desired outputs.

### RS232 Control

- Standard control method.
- Configuration and control can be done through the serial port.
  - Female RJ45 connector.
- Control the switch using the NTI Switch Control Program with Graphical User Interface (GUI control) via RS232.
- Control4 certified module controls routing, reset, and status RS232 functions.

### Infrared Remote Control (Optional)

- Optional control method.
  - IRT-UNV is sold separately.
- Standard control method
- Transmitter can be up to 30 feet (9.1 meters) away.
- Control up to 15 switches with one remote.
- Power: Two AAA batteries (included).

### 4K 18Gbps HDMI Video Matrix Switch

NTI Part #	HDMI Inputs	HDMI Outputs
SM-16X16-HD4K	16	16
SM-32X32-HD4K	32	32