16x16 Modular Matrix Switch

VM1600A

reddot award 2015
winner interface design

- The VM1600A Modular Matrix Switch offers advanced access and real-time control of multiple local and remote A/V input devices and displays from a single chassis. The VM1600A allows users to independently switch and route video and stereo audio content directly to various monitors, displays, projectors and speakers simply by pressing front panel pushbuttons. A built-in Scaler encodes the video format in order to provide seamless, real-time switching. The front-panel LCD shows a quick view of active port connections, with an option to select an EDID Mode that yields the best resolution across different monitors.

VM1600A is easily expandable and accommodates a lineup of hot-swappable ATEN I/O boards. Featured with automatic signal conversion, it allows flexible combination of digital video/analog interfaces, including HDBaseT (VM7514 / VM8514), HDMI (VM7804 / VM7814 / VM8804 / VM8814), DVI (VM7604 / VM8604), 3G-SDI (VM7404) and VGA (VM7104), making it ideal for large-scale A/V applications such as broadcasting stations, traffic and transportation control rooms, emergency service centers, and any application that requires a customizable solution with high speed A/V signal routing.

4K | Scaler | Seamless Switch | Video Wall | RS-232/485/422 Control | EDID | FPGA Design

(Depends on which I/O boards and reciever are used)

- VM1600A Front view

- VM1600A Rear view

Features

- Connects any of 16 video sources to any of 16 displays in combination with ATEN Modular Matrix I/O Boards
- Multiple means for system configuration including front-panel pushbuttons, RS-232/422/485 control, and Ethernet connections for web GUI or Telnet
- 4K resolutions – up to UHD (3840 x 2160) and DCI (4096 x 2160) with refresh rates of 30 Hz (4:4:4) and 60 Hz (4:2:0)*
- Scaler – features a (4K) video scaling function to convert input resolutions to the display's native resolutions*
- Seamless Switch™ – features close-to-zero second switching for continuous video streams, real-time switching, and stable signal transmissions*
- Video wall – allows you to create custom video wall layouts via intuitive web GUI*
- Calendar-based scheduling – plays connection profiles that synchronized with real-time clock
- EDID Expert – selects optimum EDID settings for smooth power-up, high-quality display, and use of the best resolutions across different screens*
- Audio-enabled – HDMI audio can be extracted and stereo audio can be embedded (VM7804/VM7814/VM8804/VM8814)
- Bi-directional RS-232 channel – allows you to control the connected serial devices simultaneously through the web GUI
- Supports redundant power module for higher reliability
- Hot-swappable design for easy integration of I/O boards, fan module, and power supplies
- HDCP 2.2 or 1.4 Compatible*
- HDMI (3D, Deep Color) (VM7814/VM8814/VM7804/VM8804)
- Consumer Electronics Control (CEC) supported (VM7814/VM8814/VM7804/VM8804)
- Rack mountable (6U design)

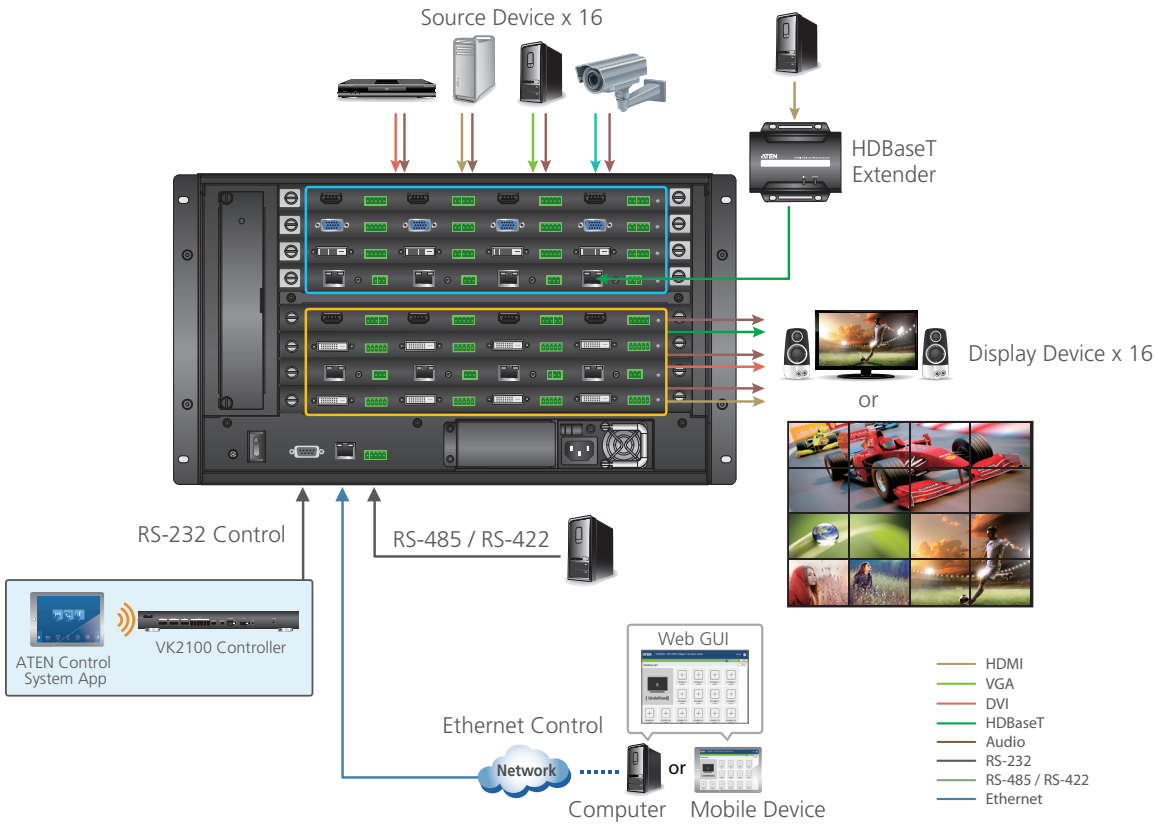
Note:

1. The availability of the features with "*" depends on which I/O board is inserted.
2. When Seamless Switch™ is enabled, 3D, Deep Color, or interlace (i.e., 1080i) formats will not be supported. To use these formats, make sure to disable Seamless Switch™.
3. Videos may not display within range when Seamless Switch™ or Video Wall is enabled, in which case please adjust the display settings on your device.

Highlights

Flexible Integration	The VM1600A can be configured with up to 16 video sources x 16 displays, with flexible installation that allows customized integration of different video interfaces and video formats for diverse applications. The removable front panel, hot swappable I/O boards, power, and fan modules make maintenance and replacement easier than ever, without any interruption to services.
Smooth and Seamless Viewing Experience	The VM1600A is built-in with Scaler and CrossPoint design that unifies video formats and provides continuous video streams, real-time switching, and stable signal transmissions. The VM1600A is capable of high-speed switching between all input/output ports–supporting high data transfer rates of up to 15.2 Gbps/ch to minimize latency and increase the processing power for time-critical video applications.
Hot-pluggable Modular Fan and Redundant Power	Overheating slows down device performance significantly and can result in equipment downtime. The VM1600A is equipped with hot-pluggable fan modules that can easily be replaced without shutting down the system, ensuring the cooling system is always in place and working. Moreover, the VM1600A comes with two power slots that support power redundancy. If the primary power shuts down, the secondary power supply can automatically take over. ATEN ensures that your investment is protected while delivering outstanding performance.

Video Wall	The VM1600A is equipped with Video Wall functionality integrated with a scaler and Cross-point design that ensure all input sources are processed at the same time, so that the video content is delivered across all screens with no delay or signal loss. With the intuitive web GUI which has won the Red Dot Interface Design award, you can easily configure up to 32 profiles and customize display layouts. Multiple displays can be easily configured to show video as a single large screen in various layouts – to see "what you want, how you want it". 
Audio Separation	The VM1600A provides the capability to separate audio signals from their corresponding video signals, including both HDMI audio extraction and stereo audio embedding. This allows the audio and video signals from one source device to be switched and sent out to different destinations.



Optional Equipments

Available Input and Output Boards

Input Boards	Output Boards
 VM7604 (DVI Input Board)	 VM8604 (DVI Output Board)
 VM7814 (4K HDMI Input Board)	 VM8814 (4K HDMI Output Board)
 VM7804 (HDMI Input Board)	 VM8804 (HDMI Output Board)
 VM7514 (HDBaseT Input Board)	 VM8514 (HDBaseT Output Board)
 VM7404 (3G-SDI Input Board)	-
 VM7104 (VGA Input Board)	-

Available Accessories

VM-PWR460	Video Matrix Power Module

Input voltage	100 - 240 VAC
Power Consumption	Max.Load 460W
Operating temp.	0° to 40° C

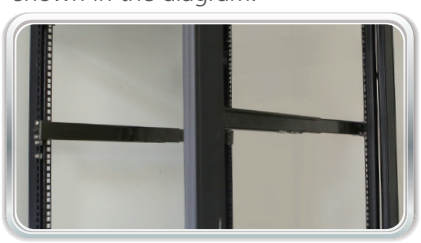
VM-FAN554	Video Matrix Fan Module

Airflow	55.2 cfm
Operating voltage	10.8 - 13.8 VDC
Operating temp.	-10° to 70° C

Rack Mount Kits (Optional)

Easy Installation Rack Mount Kit	Rack Depth
2X-026G (Short)	42 - 70 cm
2X-027G (Long)	68 - 105 cm

1. Screw the mounting brackets to the rack, as shown in the diagram.



2. Slide the unit along the brackets, then screw and secure the front panel to the rack.

Specifications

Function	VM1600A
Board Output	4 x Slot
Board Input	4 x Slot
Video Input	
Interfaces	Depends on which I/O board is inserted
Max. Data Rate	15.2 Gbps (3.8Gbps per Lane)
Audio	
Input	Depends on which Input board is inserted
Output	Depends on which Output board is inserted
Control	
RS-232	Connector: 1 x DB-9 Female (Black) Serial Control Pin Configurations: Pin2 = Tx, Pin 3=Rx, Pin 5= Gnd Baud Rate and Protocol: Baud Rate:19200, Data Bits:8, Stop Bits:1, Parity: No, Flow Control: No
RS-485/RS-422	Connector: 1 x Captive Screw Connector, 5 Pole
Ethernet	Connector: 1 x RJ-45 Female
EDID Settings	EDID Mode: Default / Port1 / Remix / Customized (EDID Wizard support)
Connectors	
Power	1 x 3-Prong AC Socket
Power	
Maximum Input Power Rating	100-240 VAC; 50-60Hz; 6.0A
Power Consumption	460W (Max.) *A power module can be purchased for power redundancy.
Fan	Airflow: 55.2 cfm Operating Voltage: 10.8 - 13.8 VDC Operating Temp: -10 - 70° C
Environmental	
Operating Temperature	0° to 40° C
Storage Temperature	-20° to 60° C
Humidity	0 - 80% RH, Non-Condensing
Physical Properties	
Housing	Metal
Weight	15.11 kg
Dimensions (L x W x H)	48.22 x 46.66 x 26.59 cm

Combination	Matrix Switch	VM1600A					
	Input Board	VM7514	VM7814	VM7804	VM7604	VM7104	VM7404
	Output Board	VM8514	VM8814	VM8804	VM8604	-	-
Interface		HDBaseT (RJ-45)	HDMI	HDMI	DVI	VGA	3G-SDI
Max Video Resolution		4K @ 60 Hz (4:2:0); 4K @ 30 Hz (4:4:4)(3)	4K @ 60 Hz (4:2:0); 4K @ 30 Hz (4:4:4)	1920 x 1080	1920 x 1200	1920 x 1200	SD: 625i (PAL) / 525i (NTSC) HD / 3G: Up to 1920 x 1080
Max Distance		100 m(3)	5 m	5 m	5 m	1.8 m	SD: 300 m; HD: 150 m; 3G: 90 m
			15 m	15 m			
Audio		V	V(1)	V(1)	V	V	V
Scaler Support		VM8514 + VE805R(2)	VM8814	VM8804	VM8604	N/A	N/A
Seamless Switch(4)		VM8514 + VE805R(2)	VM8814	VM8804	VM8604	N/A	N/A
Video Wall(4)		VM8514 + VE805R(2)	VM8814	VM8804	VM8604	N/A	N/A

Note:
(1) HDMI audio signals can be extracted into stereo audio. Stereo audio can be embedded into HDMI audio.
(2) For the VM8514, the Seamless Switch™, scaler and video wall functions are only available when used with the VE805R.
(3) Supported resolution and distance may vary depending on which HDBaseT extender is used.
(4) Videos may not display within range when Seamless Switch™ or Video Wall is enabled, in which case please adjust the display settings on your device.

Product information is subject to change without prior notice.

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