

## ANY SIGNAL ANYWHERE

### AVG-DMMS1616 Modular Matrix Switcher



The AVG-DMM1616 is a high-performance video and audio modular matrix switcher from our Digital Media Matrix range. It supports a maximum of 16 input signal sources and 16 output displays synchronously. It supports different video signals with true cross-point switching. Every video and audio signal is transmitted and switched independently to decrease signal attenuation. The AVG-DMM1616 supports various interchangeable cards including HDMI, 4K, DVI, VGA, SDI, Fiber Optic and HDBaseT etc, and all the cards support hot plug & play.

#### Features

- Modular chassis with configurable I/O slots, ranging from 4x4 to 16x16.
- Various I/O cards, includes HDMI, HDBaseT, SD/HD/3G-SDI, DVI and VGA cards (Compatible with YUV, YC & CVBS.) to configure any matrix.
- True cross-point switching, any input to any output, regardless of signal format.
- Supports HDMI1.4a, supports 3D.
- Supports 4K.
- Integrated HDBaseT technology.
- Controllable via button, RS232 & optional TCP/IP, also compatible with 3rd party control systems.
- HDCP compliant.
- LCD display.

## Specifications

### Main Unit

Control			
Serial control port	RS-232, 9- female D connector	Configurations	2 = TX, 3 = RX, 5 = GND
TCP/IP control	RJ45 Port		
Front Panel	Push Button control		
General			
Power Supply	100VAC ~ 240VAC,	Power	84W (Max)
	50/60Hz	Consumption	
Temperature	-10 ~ +40°C	Humidity	10% ~ 90%
Dimension W (*H*D)	483 x 133x 320mm (3U high)	Weight	3.5Kg

### Changeable Cards

#### 4I-DV & 4O-DV

Input		Output	
Input	4 DVI	Output	4 DVI
Input Connector	Female DB24+5	Output Connector	Female DB24+5
Input Level	T.M.D.S. 2.9V~3.3V	output Level	T.M.D.S. 2.9V~3.3V
Input Impedance	75Ω	Output Impedance	75Ω
General			
Gain	0 dB	Bandwidth	340 MHz (10.2 Gbit/s)
Video Signal	DVI 1.0/HDMI 1.3 full digital T.M.D.S signal	Switching Speed	200ns (Max.)
Max Time-delay	5nS (±1nS)	Crosstalk	<-50dB@5MHz
EDID and DDC	Supports Extended Display Identification Data (EDID) and Display Data Channel (DDC) data using DVI and HDMI standards. EDID and DDC signals are actively buffered		
HDCP	Compliant with HDCP using DVI and HDMI 1.3 standards		

**4I-DS & 4O-DS**

Input		Output	
Input	4 DVI	Output	4 DVI
Input Connector	Female DB24+5	Output Connector	Female DB24+5
Input Level	T.M.D.S. 2.9V~3.3V	output Level	T.M.D.S. 2.9V~3.3V
Input Impedance	75Ω	Output Impedance	75Ω
<b>General</b>			
Gain	0 dB	Bandwidth	340 MHz (10.2 Gbit/s)
Video Signal	DVI,HDMI,VGA,C-VIDEO,YPbPr	Switching Speed	200ns (Max.)
Max Time-delay	5nS (±1nS)	Crosstalk	<-50dB@5MHz
EDID and DDC	Supports Extended Display Identification Data (EDID) and Display Data Channel (DDC) data using DVI and HDMI standards. EDID and DDC signals are actively buffered		
HDCP	Compliant with HDCP using DVI and HDMI 1.3 standards		

**4I-HD & 4O-HD**

Input		Output	
Input	4 HDMI	Output	4 HDMI
Input Connector	Female HDMI	Output Connector	Female HDMI
Input Level	T.M.D.S. 2.9V/3.3V	output Level	T.M.D.S. 2.9V/3.3V
Input Impedance	75Ω	Output Impedance	75Ω
<b>General</b>			
Gain	0 dB	Bandwidth	6.75Gbit/s
Video Signal	DVI 1.0/HDMI 1.4a full digital T.M.D.S signal	Max Time-delay	5nS (±1nS)
Switching Speed	200ns (Max.)	Crosstalk	<-50dB@5MHz
EDID and DDC	Supports Extended Display Identification Data (EDID) and Display Data Channel (DDC) data using DVI and HDMI standards. EDID and DDC signals are actively buffered		
HDCP	Compliant with HDCP using DVI and HDMI 1.4a standards		

**4I-VG & 4O-VG**

Input		Output	
Input	4 VGA	Output	4 VGA
Input Connector	Female 15 pin HD	Output Connector	Female 15 pin HD
Input Level	0.5 ~ 2.0Vp-p	Output Level	0.5 ~ 2.0Vp-p
Input Impedance	75Ω	Output Impedance	75Ω
<b>General</b>			
Gain	0 dB	Bandwidth	350MHz (-3dB), fully load
Video Signal	VGA-UXGA, RGBHV, RGBS, RGsB, RsGsBs, component video, S-video & C-video.		
Switching Speed	200ns (Max.)	Crosstalk	<-50dB@5MHz

**4I-VA**

Input			
Video		Audio	
Input	4 VGA	Input	4 Stereo Audio
Input Connector	Female 15 pin HD	Input Connector	3P Captive connector
Input Level	0.5 ~ 2.0Vp-p	CMRR	>90dB @20Hz ~ 20KHz
Input Impedance	75Ω	Input Impedance	>10KΩ
<b>General</b>			
Gain	0 dB	Bandwidth	YPbPr:170MHz; C-video:150MHz; VGA:170MHz
Video Signal	VGA-UXGA, RGBHV, RGBS, RGsB, RsGsBs, component video, S-video& composite video.		
Switching Speed	200ns (Max.)	Crosstalk	<-50dB@5MHz

**4I-SD & 4O-SD**

Input		Output	
Input	4 SDI	Output	4 SDI
Input Connector	Female BNC	Output Connector	Female BNC
Input Level	0.8Vp-p $\pm$ 10%	output Level	0.8Vp-p $\pm$ 10%
Input Impedance	75 $\Omega$	Output Impedance	75 $\Omega$
<b>General</b>			
Gain	Unity	Maximum Data Rate	2.97 Gbps
Transmission Distance	300M (Max.)	Data rate Lock	Auto
Input Return Loss	<-14 dB @ 1 MHz ~ 1.5 GHz	Input Return Loss	<-14 dB @ 1 MHz ~ 1.5 GHz
Video Standard	SMPTE 292M, SMPTE 259M, SMPTE 424M, ITU-RBT.601, ITU-RBT.1120	Data Type	8bit, 10bit
Audio Bits per Sample	18 bits per channel, 2 channels (L, R)		

**4I-TP & 4O-TP**

Video Input		Video Output	
Input	4 RJ45	Output	4 RJ45
Input Connector	Female RJ45 3.5mm mini jack for IR 3 poles captive screw connector for RS232	Output Connector	Female RJ45 3.5mm mini jack for IR 3 poles captive screw connector for RS232
Input Impedance	75 $\Omega$	Output Impedance	75 $\Omega$
<b>Video General</b>			
Gain	0dB ~ 10dB@100MHz	Bandwidth	6.75Gbps
Resolution range	800x600 ~ 1920x1200	Transmission Distance	70M(Max)
SNR	>70dB@ 100MHz-100M	Return Loss	<-30dB@ 5KHz
THD	<0.005%@1KHz	Min.~Max. Level	<0.3V ~ 1.45Vp-p
HDMI	Support HDMI1.4a and	Differential Phase Error	$\pm$ 10° @



Standard	HDCP		135MHz_100M
----------	------	--	-------------

**4I-UH & 4O-UH**

<b>Input</b>			
<b>Video Input</b>		<b>Video Output</b>	
Input	4 HDMI	Input	4 Analog
Input Connector	Female HDMI	Input Connector	3.5mm pluggable terminal block
Min.~Max. Level	T.M.D.S. 2.9V~3.3V	Input Impedance	75Ω
Input Impedance	100Ω (Differential)	Frequency Response	20Hz~20K Hz
<b>Output</b>			
<b>Video Output</b>		<b>Audio Output</b>	
Output	4 HDMI	Output	4 Stereo
Output Connector	Female HDMI	Output Connector	3.5mm Stereo audio connector
Min.~Max. Level	T.M.D.S. 2.9V~3.3V	Output Impedance	75Ω
Output Impedance	100Ω (Differential)	Frequency Response	20Hz~20K Hz
<b>General</b>			
Gain	0dB	Bandwidth	6.75Gbps
Max Resolution	4Kx2K	Crosstalk	<- 50dB@5MHz
Transmission Distance	1080P≤70m 4Kx2K ≤ 40m	Switching Speed	200ns (Max.)
Work Temperature	-10℃~+40℃	Reference Humidity	10%~90%
SNR	>70dB@ 100MHz-100M	Return Loss	<-30dB@ 5KHz
Supported Audio Format	Embedded HDMI audio: PCM, Dobyly Digital, DTS, DTS-HD Analog audio: PCM		
HDMI Standard	Supports HDMI1.4& DVI1.0		
EDID& HDCP Management	Compliant with HDCP 1.4; Supports manual EDID management		

**4I-UF & 4O-UF**

<b>Input</b>		<b>Output</b>	
Input	4 Fiber Optical	Output	4 Fiber Optical
Input Connector	SPF Fiber Optical Connector	Output Connector	SPF Fiber Optical Connector
Fiber Type	Multi-mode, Single mode	Fiber Type	Multi-mode, Single
<b>General</b>			
Data Rate	10.2 Gbps	Color Depth	8bit, 10bit, 12bit, 16bit
Work Temperature	0~55°C	Reference Humidity	10%~90%
<b>Optical Fiber Mode</b>			
Connector	LC connector		
Resolution	Up to 4Kx2K		
Transmission Distance	1km (Single mode transmission, using Single Mode Optical Module and OS1 Single Mode Fiber Cable) 300m (Multi-mode transmission, using Single/ Multi mode Optical Module and OM3 Multi-Mode Fiber Cable)		
Data Rate	10.2Gbit/s		

**6.2.10. 4I-BT & 4O-BT**

<b>Input</b>			
<b>Video Input</b>		<b>Audio Input</b>	
Input	4 HDBT	Input	4 Stereo
Input	4 Female RJ45 (with	Input	3.5mm Stereo audio
Connector	dual-color indicator)	Connector	connector
Min.~Max. Level	T.M.D.S 2.9V~3.3V	Input Impedance	75Ω
Input Impedance	100Ω (Differential)	Frequency Response	20Hz~20K Hz
<b>Output</b>			
<b>Video Output</b>		<b>Audio Output</b>	
Output	4 HDBT	Output	4 Stereo
Output Connector	4 Female RJ45 (with dual-color indicator)	Output Connector	3.5mm Stereo audio connector
Min.~Max. Level	T.M.D.S 2.9V~3.3V	Output Impedance	75Ω

Output Impedance	100Ω (Differential)	Frequency Response	20Hz~20K Hz
<b>Control Part</b>			
Control Signal	4 RS232	Control Connector	3-pin pluggable terminal block
Protocol	TCP/IP		
<b>General</b>			
Gain	0dB	Bandwidth	6.75Gbps
Max Resolution	4Kx2K	Crosstalk	<-50dB@5MHz
Transmission Distance	1080P≤70m 4Kx2K ≤ 40m	Switching Speed	200ns (Max.)
Work Temperature	-10℃~+40℃	Reference Humility	10%~90%
SNR	>70dB@ 100MHz-100M	Return Loss	<-30dB@ 5KHz
Supported Audio Format	Embedded HDMI audio: PCM, Dobly Digital, DTS, DTS-HD Analog audio: PCM		
HDMI Standard	Supports HDMI1.4		
EDID& HDCP Management	Compliant with HDCP 1.4; Supports manual EDID management		