VISSONIC

Professional Audio Video Manufacturer

Signal Management

PRODUCT DATASHEET

VISSONIC ELECTRONICS LTD.

Think Solutions

M5 series Seamless Modular Matrix Switcher

1. Product Introduction

The M5 Series is a seamless hybrid matrix switcher with modular design and plug-in structure. It supports seamless switching up to 4k@60Hz, with a wide product range of up to 144x input and 144x output. It is designed for mission-critical situations that work 24/7. It has high reliability and is widely used in conference rooms, command centers, security monitoring, exhibition displays, military command, education and research, government announcements, commercial displays and other industries.

2. Core Features

Audio and video switching equipment that supports seamless switching of 4K@60 UHD signals

Single channel maximum resolution up to 4Kx2K@60Hz, support 4K input collection, 4K seamless output, backward compatible with all standard resolutions, and support resolution customization.

4K2K arbitrary switch

Full digital seamless switching technology, two signal parallel processing, to ensure that the switch no black field, no flash screen, no fragmentation, and no static picture. It can meet 2K and 4K signals arbitrary switch, and adopts 4:4:4 full frame rate graphics processing algorithm, true to restore the graphics color, the delay is as low as 0ms.

With rolling subtitles

Superimpose pictures at any position of each input signal or customize text in any language or font size, which can be set as a rolling analog LED banner.

Visualization control

The configuration of the preview card can realize the video preview and switching on the PC and tablet, and supports real-time monitoring of the contents of the large screen.

Audio intelligent management

Support analog audio embedded in video, digital audio de-embedded into analog audio, support audio and video in the hybrid matrix system independent switching, which can be controlled through the front panel, software, control port, etc.

Support splicing function

Splicing output supports single layer arbitrary zooming, superimposing, cross-screening, and roaming. A single signal can be spliced and displayed on any M×N display unit, and M and N are all positive integers greater than or equal to 1.

Multi-terminal simultaneous visualization operation

The visual preview of the signal, support on any system, any PC/mobile phone/tablet, realize visualization, movable, touch management, multiple operation terminals can be simultaneously controlled and status synchronized.

3. Basic Function

1. Seamless hybrid matrix switchers have a mounting structure of 2U/3U/7U/12U/24U chassis size, and supports a maximum of 8x8, 16x16, 36x36, 72x72, and 144x144 input/output channels, respectively.
2. FPGA-based pure hardware architecture avoids the virus intrusion of the device, improves system stability, can work after power-on, boot up time ≤ 2 seconds.
3. The front panel has an LCD display and buttons, which can display and configure the IP address of the device, and display the switching action and switching status in real time.
4. Modular design for flexible configuration of input and output cards.
5. The seamless hybrid matrix supports the cross conversion of the following signals: DVI HD, Dual-Link DVI 4K, HDMI HD, HDMI 4K, VGA, Component, Composite, YC, SD-HDI, HD-SDI, 3G-SDI, HDBaseT HD and HDBaseT 4K, fully digital switching, each seamless output card can achieve true real-time seamless switching.
6. A single matrix supports up to 144 channels x single 1080P input or 72 channels x single 4K UHD input.
7. A single processor supports up to 144 channels x single channel 1080P or 72 channels x single 4K UHD seamless output,

144 channels x single channel 1080P or 72 channels x single channel 4K UHD splicing output.

8. Full digital seamless switching technology, two signal parallel processing, to ensure that the switch no black field, no flash screen, no fragmentation, and no static picture. It can meet 2K and 4K signals arbitrary switch, and adopts 4:4:4 full frame rate graphics processing algorithm, true to restore the graphics color, the delay is as low as 0ms.
9. Single channel maximum resolution up to 4Kx2K@60Hz, support 4K input collection, 4K seamless output, backward compatible with all standard resolutions, and support resolution customization.
10. Optional support splicing function, splicing output supports single layer arbitrary zooming, superimposing, cross-screening, and roaming.
11. Superimpose pictures at any position of each input signal or customize text in any language or font size, which can be set as a rolling analog LED banner.
12. Optional redundant power supply, the redundant power supply will automatically take over without interrupting the operation of the controller.
13. Hot plug-and-play input boards and output boards without affecting the normal operation of other systems.
14. Automatic adjustment of the cooling fan speed according to temperature changes.
15. Firmware network online upgrade and Micro USB upgrade.
16. The system contains a variety of test images such as red, green, blue, white, etc., which is convenient for quick debugging and system maintenance.
17. Support EDID reading and EDID management.
18. The configuration of the preview card can realize the video preview and switching on the PC and tablet, and supports real-time monitoring of the contents of the large screen.
19. Flexible control mode, support front panel LCD screen button control, infrared control, RS-232 control and RS-232 loop-out control, network interface for upper computer software control, web control, support RS-422 external panel control interface for embedded touch button panel control, preview card visualization preview control, and can be controlled through the remote HDBaseT serial port, which is convenient for users to use with various remote control devices.
20. Using B/S architecture, the product itself supports mobile phone and tablet control, supports Android, IOS, Windows systems, and does not need to install any software and plug-ins without requiring an external server or central control.
21. Input signal automatic detection, real-time detection of whether each input port has signal access, input board indicator light and client software have status indication.
22. Output signal automatic detection, real-time detection of whether each output port has a successful handshake with the display end protocol, the output board indicator, the background color of the display and the client software have status indications.
23. Support DVI 1.0 protocol, comply with HDCP2.2 standard, compatible with HDMI2.0.
24. With correction and compensation signal characteristics to reduce the video stream error, DVI, HDMI input up to 35 meters.
25. HDMI input card with digital audio and analog audio selection input, digital audio de-embedding analog output.
26. HDMI output card embedded digital audio and analog audio output at the same time.
27. SDI input/output card with loop-out function.
28. The IP card supports the access of the network monitoring dome camera, supports web login to set the network protocol, supports onvif, RTP, RTSP, RTCP, TCP, UDP and other network protocols, and can directly decode the network camera signal.
29. HDBaseT input and output signals support embedded (or local) two-way RS-232 and two-way IR signals, and can choose to switch with the video signal, or separate switching modes, and support POC for external power supply.

4. Optional Features

1. Audio and video can switch independently in the hybrid matrix system, which can be controlled through the front panel, software, control port, etc.
2. Superimpose pictures at any position of each input signal or customize text in any language or font size, which can be set as a rolling analog LED banner.
3. Splicing output supports single layer arbitrary zooming, superimposing, cross-screening, and roaming. A single signal can be spliced and displayed on any M×N display unit, and M and N are all positive integers greater than or equal to 1.
4. 60Hz frame synchronization processing technology, perfectly solve the dislocation and tearing phenomenon between different display units of high-speed moving pictures.
5. Intelligent scaling technology, image scaling adopts intelligent multi-phase filtering algorithm, automatically selects the optimal filter coefficient according to the characteristics of the image, the image is close to the vector level scale effect, ensuring more details, no jagged edges and good sharpness.
6. Supports simultaneous management of more than 5 display wall groups, each display wall can be a different display device, resolution or size, all display walls should support real-time management.
7. Output mapping, more flexibility in project site construction, the connection line between the equipment and the display unit does not need to be one-to-one correspondence, and can be quickly adjusted in the software.
8. Input source image can be cropped, realize real-time processing functions such as removing black borders, edge shielding, area enlargement, etc., which can be added as input sub-signals.
9. The device can store 200 sets of matrix preset switching instructions and 40 preplans for each video wall, and supports 5 video walls, that is, a total of 200 sets of splicing preplan instructions, which can be switched with one-key when calling.
10. Support real-time status monitoring of any module card (input card, output card, control card) temperature, version, manufacturing information and fan speed.
11. Support client operation change mode, after opening this function, all window operations will not take effect immediately. After clicking confirm, then all operations will take effect at once.
12. Support automatic and manual backup configuration, configuration file export, configuration file import control card。
13. Each splicing output card can realize the video splicing function, and the image window in the full-screen range can be arbitrary zoom, superimposed, cross-screened, roamed, background image setting, partial interception and enlargement.
14. Support window lock, the size and position of the window will be fixed, it can't be moved once locked.
15. KMX management, realizes a set of mouse and keyboard to control multiple computers, and can realize remote switching control of the matrix through the keyboard.

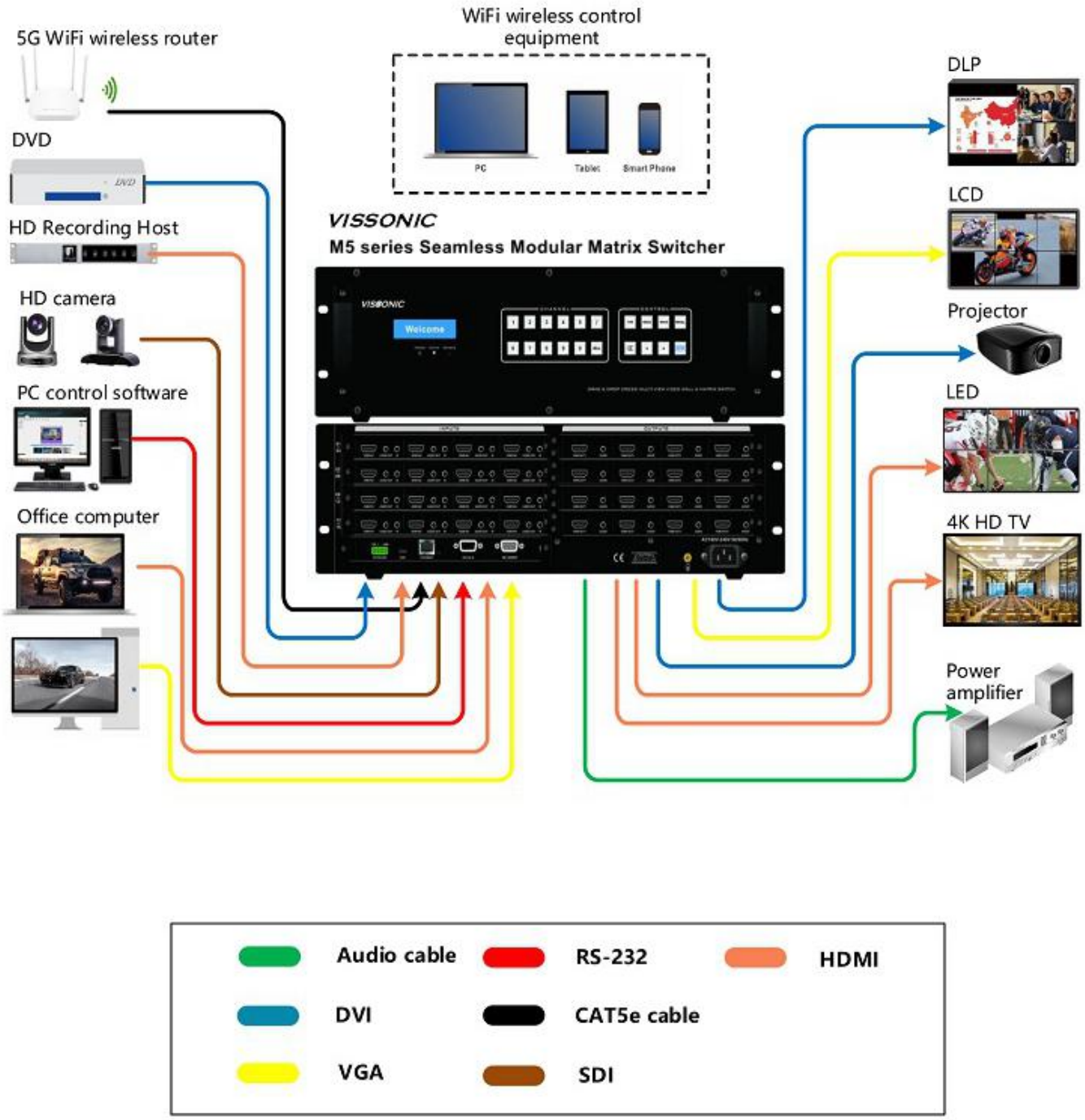
5. Chassis specifications

Technical parameters								
Model	**Chassis**	**Specifications**	**Number of input cards**	**Number of output cards**	**Number of control cards**	**Power Supply Default power supply - backup power supply**	**Power**	**Dimensions (mm)**
MX-VL0808	2U	2U chassis, supports up to 8 inputs and 8 outputs	2	2	1	1-1	18W	445x400x88
MX-VL1616	3U	3U chassis, supports up to 16 inputs and 16 outputs	4	4	1	1-1	18W	445x400x132
MX-VL3636	7U	7U chassis, supports up to 36 inputs and 36 outputs	9	9	1	1-3	30W	445x400x310
MX-VL7272	12U	12U chassis, supports up to 72 inputs and 72 outputs	18	18	1	1-3	30W	445x400x532
MX-VL144144	24U	24U chassis, supports up to 144 inputs and 144 outputs	36	36	1	2-6	70W	445x400x1043
Card								
Input card	DVI HD, Dual-Link DVI 4K, HDMI HD, HDMI 4K, VGA, Component, Composite, YC, SD-HDI, HD-SDI, 3G-SDI, Fiber, HDBaseT HD and HDBaseT 4K							
Output card	DVI HD, Dual-Link DVI 4K, HDMI HD, HDMI 4K, VGA, Component, Composite, YC,SD-HDI, HD-SDI, 3G-SDI, Fiber, HDBaseT HD and HDBaseT 4K							
Control mode								
Network control	1 RJ45 interface, 10M/100M adaptive, support the management and configuration of the machine.							
Serial control	2 RS232, can be connected to the central control, and support loop-out control matrix, screen and other third-party equipment.							
Front panel control	Support front panel LCD display and switch button control, can modify IP address and other parameters.							
Other control	IR infrared control, KMX switch control, RS485 remote 4-inch touch screen control (optional), web visualization control (optional), HDBASET remote serial port control (optional)							
Image Processing								
Switch effect	4K fast and seamless switching, no black field, no flicker, no fragmentation, no static picture, single and multi-channel audio and video synchronization switching.							
Transmission bandwidth	10Gbps							
Output resolution	Support 4KX2K HD resolution, customizable configuration resolution.							
Environmental parameters								
Working temperature	-10~+55℃							
Working humidity	<90% Non-condensing							

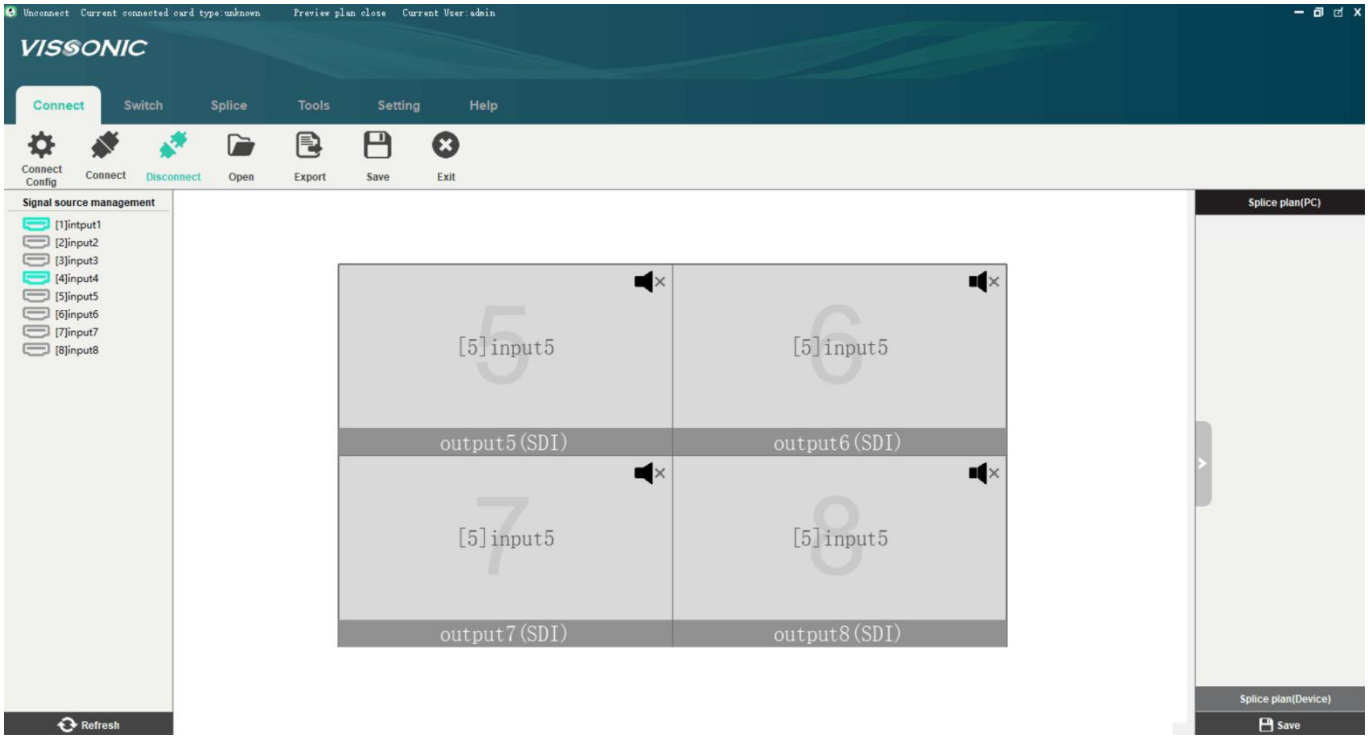
6. Card specifications

Model	Port type	Name parameter	Number of single card video interface	Signal type	Maximum resolution	Number of audio interface	Other interface
Input interface							
MX-HM4I	HDMI+3.5mm audio	4*HDMI input card	4	HDMI1.3	1920X1200@60Hz	8	-
MX-HM2I	HDMI+3.5mm audio	2*HDMI input card	2	HDMI1.4	3840X2160@30Hz	4	-
MX-HM1I	HDMI+3.5mm audio	1*HDMI input card	1	HDMI2.0	3840X2160@60Hz	2	-
MX-HD4I	RJ45+phoenix terminal	4*HDBaseT input card	4	HDBaseT	1920X1200@60Hz	-	4*two-way RS232, 4*IR two-way interface
MX-HD2I	RJ45+phoenix terminal	2*HDBaseT 4K input card	2	HDBaseT	3840X2160@30Hz	-	2*two-way RS232, 2*two-way IR interface
MX-SDI4I	SDI	4*SDII input card	4	SDI	1920*1080@60Hz	-	4*SDI loop out
MX-DVI4I	DVI+3.5mm audio	4*DVI input card	4	DVI	1920X1200@60Hz	4	-
MX-VA4I	VGA+3.5mm audio	4*VGA input card	4	VGA	1920*1080@60Hz	4	-
MX-SF4I	Fiber	4*optical fiber input card	4	Fiber	1920*1080@60Hz	-	` -
MX-SF2I	Fiber	2*optical fiber 4K input card	2	Fiber	3840X2160@30Hz	-	-
MX-IP2I	RJ45	2*IP 4K input card	2	4K IP	3840X2160@30Hz	-	-
Output interface							
MX-HM4O	HDMI+3.5mm audio	4*HDMI output card	4	HDMI1.3	1920X1200@60Hz	4	-
MX-HM2O	HDMI+3.5mm audio	2*HDMI 4K output card	2	HDMI1.4	3840X2160@30Hz	2	-
MX-HM1O	HDMI+3.5mm audio	1*HDMI 4K output card	1	HDMI2.0	3840X2160@60Hz	1	-
MX-HD4O	RJ45+phoenix terminal	4*HDBaseT output card	4	HDBaseT	1920X1200@60Hz	-	4*two-way RS232,4*IR two-way interface
MX-HD2O	RJ45+phoenix terminal	2*HDBaseT 4K output card	2	HDBaseT	3840X2160@30Hz	-	2*two-way RS232, 2*two-way IR interface
MX-SDI4O	SDI	4*SDI output card	4	SDI	1920*1080@60Hz	-	4*SDI loop out
MX-DVI4O	DVI+3.5mm audio	4*DVI output card	4	DVI	1920X1200@60Hz	4	-
MX-VA4O	VGA+3.5mm audio	4*VGA output card	4	VGA	1920*1080@60Hz	4	-
MX-SF4O	Fiber	4*optical fiber output card	4	Fiber	1920*1080@60Hz	-	-
MX-SF2O	Fiber	2*optical fiber 4K output card	2	Fiber	1920*1080@60Hz	-	-
MX-PMX	RJ45	1*Network preview card	1	IP	1920X1080P@60Hz	-	-
Optional							
VIS-CKB100	4 inch touch screen embedded remote control panel						
VIS-RPWR	PSU backup power supply						
VIS-M5SOFT	professional matrix splicing WINDOWS control software						
VIS-CON ENT5	advanced web-page visualization control card						

7. System diagram



VIS-M5SOFT Control Software



Features

- Matrix switching control with preview to switch function
- Real-time status monitoring of the temperature (input card, output card, control card), version, manufacturing information and fan speed etc.
- Support input video preview function (requires preview card)
- 200 matrix switching plans can be recalled with one key on the software
- OSD text overlay function for subtitles and messaging
- User right management
- Drag and drop from input to output

MX-PMX Network preview card

Features:

- 1 channel RJ45 interface preview output, can view 4 channels of video image information at the same time;
- Each channel video resolution:
  1280x720@30fps;
  800x600@30fps;
  640x480@30fps;
  352x288@30fps;
- H.264 & JPEG multi-stream encoding is applied, and the frame rate supports 1/16 ~ 60fps;
- Support hot plugging;
- Video switching through preview control

MX-HM4I HDMI INPUT CARD

Features

- 4 HDMI-A interfaces, 8x3.5mm audio sockets;
- The longest distance up to 35 meters;
- Hot swap, support audio and video signal switching together
- 3.5 analog audio and HDMI embedded audio selection input;
- Digital audio de-embedding can output to 3.5 audio socket
- EDID reading function
- Compatible with HDMI1.3a standard, HDCP1.3 protocol, DVI1.0 protocol;
- Maximum supported resolution:
  HDPC: 1920x1200P@60;
  HDTV: 1920x1080P@60

Technical parameter

Model	**MX-HM4I**
Protocol	
HDMI1.3a standard, HDCP1.3 protocol, DVI1.0 protocol;	
Video	
Gain	0dB
Pixel bandwidth	165MHz, full digital
Interface bandwidth	2.25Gbps, full digital (total 6.75Gbps, each color is 2.25Gbps)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080@25, 1920x1080P@30, 1920x1200P@60, 1920x1080P@60, 1920x1080i@50, 1920X1080i@60
Clock Jitter	<0.15Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime	<0.3Tbit (20%--80%)
Maximum transmission delay	5nS(±1nS)
Interface	4 HDMI-A ports, 4 3.5mm audio jacks
Signal strength	T.M.D.S. +/- 0.4Vpp
Min/max level	T.M.D.S. 2.9V/3.3V
Impedance	50 Ω
EDID	Default EDID and read function (Optional)
Maximum DC offset error	15mV
Recommended maximum input / output distance	When input distance is less than 35 meters, at 1600x1200@60, it is recommended to use certified HDMI special cable, such as Molex TM cable
Product weight	0.5KG
Maximum power consumption	15W

MX-HM2I HDMI 4K INPUT CARD

Features:

- 2 HDMI-A interfaces, 4x3.5mm audio sockets
- The longest distance up to 35 meters
- Hot swap, support audio and video signal switching together
- 3.5 analog audio and HDMI embedded audio selection input
- Digital audio de-embedding output to 3.5 audio socket
- EDID reading function
- Compatible with HDMI1.3a standard, HDCP1.3 protocol, DVI1.0 protocol
- Maximum supported resolution: 4Kx2K@30;

Technical parameter

Model	**MX-HM2I**
Protocol	
HDMI1.4 standard, HDCP1.3 protocol, DVI1.0 protocol;	
Video	
Gain	0dB
Pixel bandwidth	297MHz, full digital
Interface bandwidth	4.5Gbps full digital (13.5Gbps in total, 4.5Gbps for each color)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920X1200P@60, 3840X2160P@30;
Clock Jitter	<0.15Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime	<0.3Tbit (20%--80%)
Max. transmission delay	5nS(±1nS)
Interface	2 HDMI ports, 2 3.5mm audio jacks
Signal strength	T.M.D.S. +/- 0.4Vpp
Min / Max level	T.M.D.S. 2.9V/3.3V
Impedance	50 Ω
EDID	N/A
Maximum DC offset error	15mV
Recommended maximum input / output distance	When input distance is less than 35 meters at 1600x1200@60, it is recommended to use certified HDMI special cable, such as Molex TM cable
Product weight	0.5KG
Max power consumption	20W

MX-HD4I HDBaseT INPUT CARD

Features

- 4 channel high-speed RJ45 interface seamless output, 4 channel 6PIN Phoenix socket interface
- Using CAT5e / 6 cable output the longest distance up to 1080P@60HZ 100M
- Hot swap of card, audio and video signal switching together
- Infrared serial port output, optional IO switch card, can realize infrared serial port switch
- Compatible with HDBaseT protocol
- Maximum supported resolution:
  HDPC: 1920x1200P@60;
  HDTV: 1920x1080P@60

Model	**MX-HD4I**
Link port input / output	
Interface	4 channel high-speed RJ45 and 4 channel 6PIN Phoenix
Supported protocols	HDBaseT protocol
Pixel bandwidth	165MHz, full digital
Interface bandwidth	2.25Gbps, full digital (total 6.75Gbps, each color is 2.25Gbps)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1200P@60, 1920x1080P@60, 1920x1080i@50, 1920X1080i@60;
Signal type	High-speed differential signals defined in HDBaseT protocol
Network cable power supply	With POC power supply (+ 48V), for POC Powered by our company's CAT5 series transmitter, this card input port can provide power to it through the network cable
Impedance	50 Ω
EDID	Default EDID (Optional)
Maximum DC offset error	15mV
Recommended maximum input / output distance	When maximum input distance is 100 meters at 1600x1200@60, it is recommended to use NEXANS CAT5e/6 special cable
Product weight	0.5KG
Maximum power consumption	27W

MX-SDI4I SDI INPUT CARD

Features

- 4 channel BNC female interface, 4 way BNC female interface ring out;
- Support hot plugging;
- HD / 3G SDI signal input
- Maximum supported resolution: HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-SDI4I**
Interface	4 channels BNC input, 4 channels BNC loop out
Supported protocols	SMPTE 425M, SMPTE 424M, SMPTE 292M, SMPTE 259M-C, DVB-ASI
Pixel bandwidth	2.970Gb/s, 1.485Gb/s, 270Mb/s
Resolution	1920x1080@25, 1920x1080P@30, 1280x720@60, 1280x720@50, 1920X1080P@60, 1920x1080i@50, 1920X1080i@60;
Support format	HD-SDI 3G-SDI
Product weight	0.5KG
Maximum power consumption	20W

MX-DV4I DVI INPUT CARD

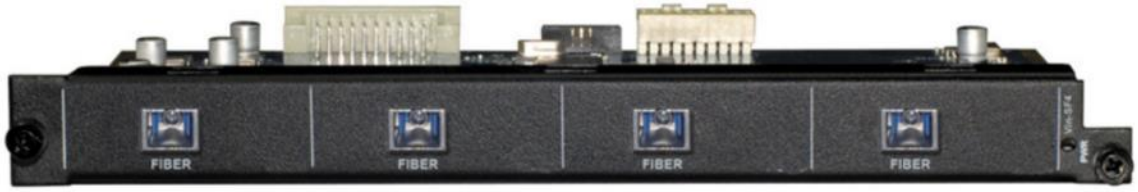
Features

- 4 channel DVI-D interface, 3.5mm audio socket
- The longest distance up to 35 meters;
- Hot swap, support audio and video signal switching together
- Analog audio and DVI video signal input
- EDID reading function
- Using DVI1.0 protocol
- Maximum supported resolution: HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-DV4I**
Protocol	
DVI1.0 protocol	
Video	
Gain	0dB
Pixel bandwidth	165MHz, full digital
Interface bandwidth	2.25Gbps, full digital (total 6.75Gbp s, each color is 2.25Gbps)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920x1200P@60, 1920x1080i@50, 1920X1080i@60
Clock Jitter	<0.15Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime	<0.3Tbit (20%--80%)
Max. transmission delay	5nS(±1nS)
Interface	4 x DVI-D female interface, 4 x 3.5mm Audio Jacks
Signal strength	T.M.D.S. +/- 0.4Vpp
Min / Max level	T.M.D.S. 2.9V/3.3V
Impedance	50 Ω
EDID	Default EDID and read function (Optional)
Maximum DC offset error	15mV
Recommended maximum input / output distance	When input transmitter distance is less than 35 meters at 1600x1200@60, it is recommended to use certified DVI dedicated cable, such as Molex TM cable.
Product weight	0.5KG
Max power consumption	15W

MX-SF4I OPTICAL FIBER INPUT CARD



Features

- 4x single core optical fiber inputs;
- Support hot plugging;
- Matching with optical fiber transmitter can realize input signal transmission of 300 meters (multimode) or maximum 20 kilometers (single mode)
- Optional IO switch card can realize infrared serial port switch;
- Input maximum supported resolution:: HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-SF4I**
Interface	4 high-speed single-core SC fiber interface
Video	
Fiber optic interface	SC connector
Fiber type	Multimode/Single Mode (optional)
Wavelength	Multimode 850nm/Single Mode: 1310-1620nm(optional)
Interface bandwidth	Forward: 6.25Gbps, Reverse: 3.125Gbps
Clock Jitter	<0.15 Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime	<0.3Tbit (20%--80%)
Recommended maximum input distance	OM3 multimode fiber: less than 300 meters, single mode fiber: 2 ~ 20 kilometers, at 1920x1080p@60
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920X1200P@60, 1920x1080i@50, 1920X1080i@60;
Product weight	0.5KG
Maximum power consumption	20W

MX-IP2I IP Streaming INPUT CARD

Features

- 2 high-speed RJ45 ports;
- Use CAT5e / 6 cable to output the longest distance up to 100M;
- Support web login to set network protocol, local network parameters or remote network parameters and other parameters;
- Can receiving fixed IP address video, or automatically search for encoding devices on the network;
- Support onvif, RTP, RTSP, RTCP, TCP, UDP and other network protocols;
- Support G711a, G711u, G726 and ADPCM audio encoding;
- Support Mainstream cameras such as HIKVISION, Dahua and Huawei;
- Maximum supported resolution: 4K@30Hz.

Technical parameter

Model	**MX-IP2I**
Network protocol	
Onvif, RTP, RTCP, RTSP, TCP, UDP	
Video	
Network port bandwidth	100M
Video compression	H.264 MainProfile/ H.264 Baseline Profile / H.264 HighProfile
Audio compression	G711a, G711u, G726, ADPCM
Control protocol	Support standard protocol ONVIF
Maximum transmission delay	100ms (depending on coding delay and network transmission delay)
IP parameters	Port1 default IP: 192.168.1.100, Port2 default IP: 192.168.2.100, Port3 default IP: 192.168.1.200, Port4 default IP: 192.168.2.200
Resolution and frame rate	3840X2160P@30, 1920X1200P@60, 1920×1080@60Hz, 1920×1080@30Hz, 1920x1080@25Hz, 1280×720@60Hz, 1280x1024@60Hz, 1280x960@60Hz, 704x576@60Hz, 704x576@30Hz, 704x576@25Hz, 704x480@60Hz, 704x480@30Hz, 704x480@25Hz, 352x288@60Hz, 352x288@30Hz, 352x288@25Hz;
Recommended maximum input distance	100M
Product weight	0.5KG
Maximum power consumption	25W

MX-HM4O HDMI SEAMLESS OUTPUT CARD

Features

- With 4 channels HDMI-A interface seamless output, 3.5mm audio socket
- Maximum output distance up to 7 meters
- Hot swap of card, audio and video signal switching together
- Analog audio and HDMI embedded audio can output at the same time
- EDID read function
- Compatible with HDMI1.3a standard, HDCP1.3 protocol, DVI1.0 protocol
- Maximum supported resolution: HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-HM4O**
Protocol	
HDMI1.3a standard, HDCP1.3 protocol, DVI1.0 protocol;	
Video	
Gain	0dB
Pixel bandwidth	165MHz, full digital
Interface bandwidth	2.25Gbps, full digital (total 6.75Gbps, each color is 2.25Gbps)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080@25, 1920x1080P@30, 1920x1080P@60, 1920x1200P@60,
Clock Jitter	<0.15Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime	<0.3Tbit (20%--80%)
Max. transmission delay	5nS(±1nS)
Interface	4 HDMI-A ports, 4 3.5mm audio jacks
Signal strength	T.M.D.S. +/- 0.4Vpp
Min/max level	T.M.D.S. 2.9V/3.3V
Impedance	50 Ω
EDID	N/A
Maximum DC offset error	15mV
Recommended maximum input / output distance	When the output distance is less than 7 meters, at 1600x1200@60, it is recommended to use certified HDMI dedicated cable, such as Molex TM cable
Product weight	0.5KG
Max. power consumption	15W

MX-HM2O HDMI 4K SEAMLESS OUTPUT CARD

Features

- 2 channels HDMI-A interface seamless output, 3.5mm audio socket
- The longest output distance is up to 7 meters
- Hot swap, support audio and video signal switching together
- Analog audio and HDMI embedded audio can output at the same time
- EDID read function
- Maximum supported resolution: 4Kx2K@30Hz

Technical parameter

Model	**MX-HM2O**
Protocol	
HDMI1.4 standard, HDCP1.3 protocol, DVI1.0 protocol;	
Video	
Gain	0dB
Pixel bandwidth	297MHz, full digital
Interface bandwidth	4.5Gbps full digital (13.5Gbps in total, 4.5Gbps for each color)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920X1200P@60, 3840X2160P@30
Clock Jitter	<0.15Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime	<0.3Tbit (20%--80%)
Maximum transmission delay	5nS(±1nS)
Interface	2 HDMI ports, 2 3.5mm audio jacks
Signal strength	T.M.D.S. +/- 0.4Vpp
Min / Max level	T.M.D.S. 2.9V/3.3V
Impedance	50 Ω
EDID	N/A
Maximum DC offset error	15mV
Product weight	0.5KG
Max power consumption	20W

MX-HD4O HDBaseT SEAMLESS OUTPUT CARD

Features

- 4 channel high-speed RJ45 interface seamless output, 4 channel 6PIN Phoenix connector;
- Use CAT5e / 6 cable to output the longest distance up to 100M;
- Hot swap of card, audio and video signal switching together;
- Infrared serial port output, optional IO switch card, can realize infrared serial port switch;
- Compatible with HDBaseT protocol;
- Maximum supported resolution:

  HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-HD4O**
Link port input / output	
Interface	4 channel high-speed RJ45 and 4 channel 6PIN Phoenix
Supported protocols	HDBaseT protocol
Pixel bandwidth	165MHz, full digital
Interface bandwidth	2.25Gbps, full digital (total 6.75Gbps, each color is 2.25Gbps)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920x1200P@60, 1920x1080i@50, 1920X1080i@60;
signal type	High-speed differential signals defined in HDBaseT protocol
Network cable power supply	With POC power supply (+ 48V), for POC For the CAT5 series transmitter of our company, this card input port can provide power to it through the network cable.
Impedance	50 Ω
EDID	N/A
Recommended maximum input / output distance	When maximum distance is 100 meters, at 1600x1200@60, it is recommended to use NEXANS CAT5e/6 special cable
Product weight	0.5KG
Max power consumption	22W

MX-SDI4O SDI SEAMLESS OUTPUT CARD

Features

- 4 channel BNC female interface, 4 way BNC female interface ring out;
- Support hot plugging;
- HD / 3G SDI signal output
- Maximum supported resolution: HDPC: 1920x1200P @ 60; HDTV: 1920x1080P @ 60

Technical parameter

Model	**MX-SDI4O**
Interface	4 channels BNC output, 4 channels BNC loop out
Supported protocols	SMPTE 425M, SMPTE 424M, SMPTE 292M, SMPTE 259M-C, DVB-ASI
Pixel bandwidth	2.970Gb/s, 1.485Gb/s, 270Mb/s
Resolution	1920x1080@25, 1920x1080P@30, 1280x720@60, 1280x720@50, 1920X1080P@60, 1920x1080i@50, 1920X1080i@60;
Support format	HD-SDI, 3G-SDI
Product weight	0.5KG
Maximum power consumption	20W

MX-DV4O DVI OUTPUT CARD

Features

- 4 channel DVI-D interface, 3.5mm audio socket
- The longest distance up to 35 meters;
- Hot swap, support audio and video signal switching together
- Analog audio and DVI video signal input
- EDID reading function
- Using DVI1.0 protocol
- Maximum supported resolution: HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-DV4O**
Protocol	
DVI1.0 protocol	
Video	
Gain	0dB
Pixel bandwidth	165MHz, full digital
Interface bandwidth	2.25Gbps, full digital (total 6.75Gbp s, each color is 2.25Gbps)
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920x1200P@60, 1920x1080i@50, 1920X1080i@60;
Clock Jitter	<0.15Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime	<0.3Tbit (20%--80%)
Max. transmission delay	5nS (±1nS)
Interface	4 x DVI-D female interface, 4 x 3.5mm Audio Jacks
Signal strength	T.M.D.S. +/- 0.4Vpp
Min / Max level	T.M.D.S. 2.9V/3.3V
Impedance	50 Ω
EDID	N/A
Maximum DC offset error	15mV
Recommended maximum input / output distance	When output distance is less than 7 meters, at 1600x1200@60, it is recommended to use certified DVI dedicated cable, such as Molex TM cable
Product weight	0.5KG
Max. power consumption	15W

MX-SF4O OPTICAL FIBER OUTPUT CARD

Features

- 4x single core optical fiber inputs;
- Support hot plugging;
- Matching with optical fiber transmitter can realize input signal transmission of 300 meters (multimode) or maximum 20 kilometers (single mode)
- Optional IO switch card can realize infrared serial port switch;
- Input maximum supported resolution: HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-SF4O**
Interface	4 high-speed single-core SC fiber interface
Video	
Fiber optic interface	SC connector
Fiber type	Multimode/Single Mode (optional)
wavelength	Multimode 850nm/Single Mode: 1310 - 1620nm(optional)
Interface bandwidth	Forward: 6.25Gbps, Reverse: 3.125Gbps
Clock Jitter	<0.15 Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime)	<0.3Tbit (20%--80%)
Recommended maximum input / output distance	OM3 multimode fiber: less than 300 meters, single mode fiber: 2 ~ 20 kilometers, at 1920x1080p@60
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920X1200P@60, 1920x1080i@50, 920X1080i@60;
Product weight	0.5KG
Maximum power consumption	20W

MX-SF4O OPTICAL FIBER OUTPUT CARD

Features

- 4x single core optical fiber inputs;
- Support hot plugging;
- Matching with optical fiber transmitter can realize input signal transmission of 300 meters (multimode) or maximum 20 kilometers (single mode)
- Optional IO switch card can realize infrared serial port switch;
- Input maximum supported resolution: HDPC: 1920x1200P@60; HDTV: 1920x1080P@60

Technical parameter

Model	**MX-SF4O**
Interface	4 high-speed single-core SC fiber interface
Video	
Fiber optic interface	SC connector
Fiber type	Multimode/Single Mode (optional)
wavelength	Multimode 850nm/Single Mode: 1310 - 1620nm(optional)
Interface bandwidth	Forward: 6.25Gbps, Reverse: 3.125Gbps
Clock Jitter	<0.15 Tbit
Risetime	<0.3Tbit (20%--80%)
Falltime)	<0.3Tbit (20%--80%)
Recommended maximum input / output distance	OM3 multimode fiber: less than 300 meters, single mode fiber: 2 ~ 20 kilometers, at 1920x1080p@60
Resolution	800x600@60, 1024x768@60, 1280x720@60, 1280x768@60, 1280x800@60, 1280x960@60, 1280x1024@60, 1360x768@60, 1366x768@60, 1440x900@60, 1600x900@60, 1600x1200@60, 1920x1080P@60, 1920X1200P@60, 1920x1080i@50, 920X1080i@60;
Product weight	0.5KG
Maximum power consumption	20W

MX-IP2O IP Streaming OUTPUT CARD

Features

- 2 high-speed RJ45 ports;
- Use CAT5e / 6 cable to output the longest distance up to 100M;
- Support web login to set network protocol, local network parameters or remote network parameters and other parameters;
- Can receiving fixed IP address video, or automatically search for encoding devices on the network;
- Support onvif, RTP, RTSP, RTCP, TCP, UDP and other network protocols;
- Support G711a, G711u, G726 and ADPCM audio encoding;
- Support Mainstream cameras such as HIKVISION, Dahua and Huawei;
- Maximum supported resolution: 4K@30Hz.

Technical parameter

Model	**MX-IP2O**
Network protocol	
Onvif, RTP, RTCP, RTSP, TCP, UDP	
Video	
Network interface bandwidth	100M
Video compression	H.264 MainProfile / H.264 Baseline Profile / H.264 HighProfile
Audio compression	G711a, G711u, G726, ADPCM
Control protocol	Support standard protocol ONVIF
Maximum transmission delay	100ms (depending on coding delay and network transmission delay)
IP parameters	Port1 default IP: 192.168.1.100 Port2 default IP: 192.168.2.100 Port3 default IP: 192.168.1.200 Port4 default IP: 192.168.2.200
Resolution and frame rate	3840X2160P@30, 1920X1200P@60, 1920×1080@60Hz, 1920×1080@30Hz, 1920x1080@25Hz, 1280×720@60Hz, 1280x1024@60Hz, 1280x960@60Hz, 704x576@60Hz, 704x576@30Hz, 704x576@25Hz, 704x480@60Hz, 704x480@30Hz, 704x480@25Hz, 352x288@60Hz, 352x288@30Hz, 352x288@25Hz;
Recommended maximum input distance	100M
Product weight	0.5KG
Maximum power consumption	25W

About VISSONIC Electronics Limited

Our mission is to develop and manufacture the most comprehensive and innovative audio visual products for our clients. We provide the best performance/price ratio products because it could give you satisfaction just from the time you use them, we believe the good design with cutting edge technology on products will provide value to all our partners and end users. Listen to your demands, we fulfill it.

VISSONIC
4/F, Building 6, No. 50 Nanxiang 1st Road, Huangpu District, Guangzhou, China
• Tel: +86-020-82515140 • E-mail: info@vissonic.com
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