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M5 Series Modular Seamless Matrix Switcher

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 up to 144x inputs and 144x outputs. It is designed for mission critical situations that work 24/7, with high reliability.



Core Features

- Station logo display
- Scrolling Text
- Seamless switch
- KVM control



Seamless switching of 4K@60 UHD

Single channel up to 4Kx2K@60Hz, 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, no black field, no flash screen, no fragmentation, and no static picture. 2K and 4K signals arbitrary switch, 4:4:4 color sampling.

Signal source clipping

Supports cropping input sources at any position and size, removing black borders or cropping parts of the image.



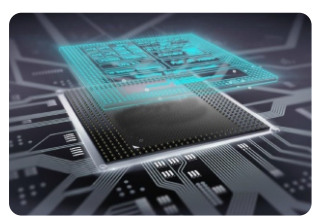
Visualization control

Video preview and switching on the PC and tablet with preview card, and supports real-time monitoring of the large screen.



Multi-terminal simultaneous visualization operation

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



Audio intelligent management

Supports analog audio embedding, digital audio de-embedding, independent audio and video switching, and control via front panel, software, or serial port.

Basic Function

- 2U/3U/7U/12U/24U chassis optional and supports up to 8x8, 16x16, 36x36, 72x72, and 144x144 input/output channels.
- FPGA-based pure hardware structure, work after power-on, boot up time ≤ 2 seconds.
- LCD display and buttons can display and configure the IP address and show the switching action and switching status in real time.
- Modular design for flexible configuration of input and output cards.
- The seamless hybrid matrix supports the cross conversion of the following signals: DVI HD, Dual-Link DVI 4K, HDMI HD, HDMI 4K, VGA, YPBPR, CVBS, HD-SDI, 3G-SDI, 12G-SDI, Fiber, HDBaseT HD and HDBaseT 4K.
- Single matrix supports up to 144 channels of 4K604:4:4 signal input and output.
- Fully digital seamless switching technology ensures no black screen, no flickering, no fragments, and no picture stillness. It supports arbitrary switching between 2K and 4K signals and employs a 4:4:4 full-frame rate graphics processing algorithm for true color reproduction, with a delay as low as 0ms.
- Single channel up to 4Kx2K@60Hz, 4K input collection, 4K seamless output, backward compatible with all standard resolutions, and support resolution customization.
- 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.
- Optional redundant power supply, the redundant power supply will automatically take over without interrupting the operation of the controller.
- Hot plug-and-play input and output cards without affecting the operation of other systems.
- Supports automatic fan control based on temperature changes.
- Firmware online upgrade.
- A variety of test images such as red, green, blue, white, etc included, convenient for quick debugging and system maintenance.
- Supports EDID management, copying the EDID of output displays to input ports, or updating and editing EDID for specified input ports.
- 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 large screen.
- Flexible control mode includes front panel LCD screen button, IR, RS-232 and RS-232 loop-out, PC, web, RS-422, preview card and HDBaseT serial port control.
- B/S architecture, supports Android, IOS, Windows systems, and does not need to install any software and plug-ins without requiring an external server or central control.
- Input signal automatic detection, real-time detection of signal access, input card indicator and client software have status indication.
- Output signal automatic detection, real-time detection of protocol connection, output card indicator, the background color of the display and the client software have status indications.
- Support DVI 1.0 protocol, comply with HDCP2.2, compatible with HDMI2.0.
- With correction and compensation signal characteristics to reduce the video stream error, DVI, HDMI input up to 35m.
- HDMI input card with digital and analog audio selection input, digital audio de-embedding analog output.
- HDMI output card embedded digital audio and analog audio output at the same time.
- SDI input/output card with loop-out function.
- IP card supports the access of PTZ, supports web login to set the network protocol, supports onvif, RTP, RTSP, RTCP, TCP, UDP protocols etc, and can directly decode the network camera signal.
- 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.
- Front panel, software, control port, etc can set to switching in the hybrid matrix system.
- 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.
- 60Hz frame synchronization processing technology, perfectly solve the dislocation and tearing phenomenon between different display units of high-speed moving pictures.
- 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.
- Input source image can be cropped, realize real-time processing functions such as removing black borders, edge shielding, area enlargement, etc.
- Supports multi-plan management, saving the current signal switching status as scenarios for easy retrieval based on application scenarios.
- Supports real-time monitoring of temperature (input cards, output cards), version, and operational status of any module.
- 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 immediately.
- Automatic and manual backup configuration, configuration file export, configuration file import control card.
- KVM management, realizes a set of mouse and keyboard to control multiple computers, and can realize remote switching control of the matrix through the keyboard.

Chassis Specifications

| 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) |
|-------------|---------|---|-----------------------|------------------------|-------------------------|---|-------|-----------------|
| VW-VL0808 | 2U | supports up to 8 inputs and 8 outputs | 2 | 2 | 1 | 1-1 | 18W | 445x400x88 |
| VW-VL1616 | 3U | supports up to 16 inputs and 16 outputs | 4 | 4 | 1 | 1-1 | 18W | 445x400x132 |
| VW-VL3636 | 7U | supports up to 36 inputs and 36 outputs | 9 | 9 | 1 | 1-3 | 30W | 445x400x310 |
| VW-VL7272 | 12U | supports up to 72 inputs and 72 outputs | 18 | 18 | 1 | 1-3 | 30W | 445x400x532 |
| VW-VL144144 | 24U | 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, YPBPR, CVBS, HD-SDI, 3G-SDI, 12G-SDI, Fiber, HDBaseT HD and HDBaseT 4K |
| Output card | DVI HD, Dual-Link DVI 4K, HDMI HD, HDMI 4K, VGA, YPBPR, CVBS, 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 | Supports signal switching, scenario management, and control card network parameter modification via front panel buttons. |
| Other control | IR control, KVM 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 seamless switching, no black field, no flicker, no fragmentation, no static picture, single and multi-channel audio and video synchronization switching |
| Transmission bandwidth | 18Gbps |
| Output resolution | Support 4KX2K HD resolution, can customize configuration resolution |

Environmental parameters

| | |
|---------------------|---------------------|
| Working temperature | -10~+55°C |
| Working humidity | <90% Non-condensing |



VW-VL0808

VW-VL1616

VW-VL3636

VW-VL7272

VW-VL144144

Card Specifications

Input interface

| Model | Port type | Card | Port No. | Signal type | Maximum resolution | Number of audio interface | Other interface |
|------------|---------------------------|--------------------|----------|-------------|--------------------|---------------------------|-------------------------------|
| MX-HM4I | HDMI+3.5mm audio | 4*HDMI | 4 | HDMI1.3 | 1920X1200@60Hz | 8 | - |
| MX-HM2I | HDMI+3.5mm audio | 2*HDMI 4K | 2 | HDMI1.4 | 4096X2160@30Hz | 4 | - |
| MX-HM4I-4K | HDMI+3.5mm audio | 4*HDMI 4K | 4 | HDMI2.0 | 4096X2160@60Hz | 8 | - |
| MX-HD4I | RJ45+phoenix terminal | 4*HDBaseT | 4 | HDBaseT | 1920X1200@60Hz | - | 4*two-way RS232, 4*two-way IR |
| MX-HD2I | RJ45+phoenix terminal | 2*HDBaseT 4K | 4 | HDBaseT | 4096X2160@30Hz | - | 2*two-way RS232, 2*two-way IR |
| MX-SDI4I | SDI | 4*SDI | 4 | SDI | 1920X1080@60Hz | - | 4*SDI loop out |
| MX-DVI4I | DVI+3.5mm audio | 4*DVI | 4 | DVI | 1920X1200@60Hz | 4 | - |
| MX-VA4I | VGA+3.5mm audio | 4*VGA | 4 | VGA | 1920X1080@60Hz | 4 | - |
| MX-SF4I | Optical fiber module slot | 4*optical fiber | 4 | Fiber | 1920X1200@60Hz | - | - |
| MX-SF2I | Optical fiber module slot | 2*optical fiber 4K | 2 | Fiber | 4096X2160@30Hz | - | - |
| MX-IP2I | RJ45 | 2*IP | 2 | 4K IP | 4096X2160@30Hz | - | - |

Output interface

| Model | Port type | Card | Port No. | Signal type | Maximum resolution | Number of audio interface | Other interface |
|------------|---------------------------|----------------------|----------|-------------|--------------------|---------------------------|-------------------------------|
| MX-HM4O | HDMI+3.5mm audio | 4*HDMI | 4 | HDMI1.3 | 1920X1200@60Hz | 4 | - |
| MX-HM2O | HDMI+3.5mm audio | 2*HDMI 4K | 2 | HDMI1.4 | 4096X2160@30Hz | 2 | - |
| MX-HM4O-4K | HDMI+3.5mm audio | 4*HDMI 4K | 4 | HDMI2.0 | 4096X2160@60Hz | 4 | - |
| MX-HD4O | RJ45+phoenix terminal | 4*HDBaseT | 4 | HDBaseT | 1920X1200@60Hz | - | 4*two-way RS232, 4*two-way IR |
| MX-HD2O | RJ45+phoenix terminal | 2*HDBaseT 4K | 2 | HDBaseT | 4096X2160@30Hz | - | 2*two-way RS232, 2*two-way IR |
| MX-SDI4O | SDI | 4*SDI | 4 | SDI | 1920X1080@60Hz | - | 4*SDI loop out |
| MX-DVI4O | DVI+3.5mm audio | 4*DVI | 4 | DVI | 1920X1200@60Hz | 4 | - |
| MX-VA4O | VGA+3.5mm audio | 4*VGA | 4 | VGA | 1920X1080@60Hz | 4 | - |
| MX-SF4O | Optical fiber module slot | 4*optical fiber | 4 | Fiber | 1920X1200@60Hz | - | - |
| MX-SF2O | Optical fiber module slot | 2*optical fiber 4K | 2 | Fiber | 4096X2160@30Hz | - | - |
| MX-STM4 | RJ45 | 1*IP streaming media | 1 | IP | 1920X1080@30Hz | - | - |

Preview

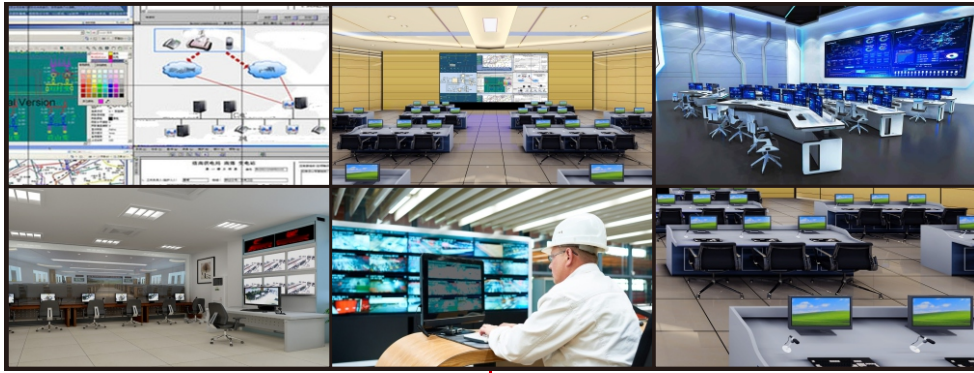
| Model | Port type | Card | Port No. | Signal type | Maximum resolution | Number of audio interface | Other interface |
|--------|-----------|---------------|----------|-------------|--------------------|---------------------------|-----------------|
| MX-PVW | Rj45 | 1*Net preview | 1 | IP | 1920X1080@30Hz | - | - |

Optional

| Model | Description |
|--------------|---|
| VIS-CKB100 | 4 inch touch screen embedded remote control panel |
| VIS-RPWR | PSU backup power supply |
| VIS-M5SOFT | Professional matrix Windows control software |
| VIS-CON ENT5 | advanced web-page visualization control card |

System Diagram

LCD videowall



- 5G WiFi
- RS-232
- Audio
- CAT5e
- HDMI
- SDI
- VGA
- DVI
- USB



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