TK-MT Matrix Switcher System

Welcome to learn about the TK-MT series hybrid matrix platform. Through the TK-MT series hybrid matrix platform, you can achieve various customized functions and solve the personalized needs of your engineering projects

4K@30HZ Stable transmission and seamless switching of signals;

Seamless switching and setting of any combination of splicing modes for 1080P signals, i.e. seamless splicing function

4K multi screen treasure signal input, point-to-point display, and can also achieve switching and splicing of ordinary high-definition signals

The direct core module enables low-cost signal conversion between different formats, and centralized power supply makes the cabinet more tidy

Mixing multiple different formats of signals, signals can be converted to each other

I、 Product Introduction:

The TK-MT series hybrid matrix switcher is a multifunctional image processing device that can achieve seamless switching and splicing of 4K signals, seamless switching and splicing of high-definition signals, ultra high resolution point-to-point splicing, and conversion of different format signals through different input and output card combinations.

The product supports optional chassis specifications of 8x8, 16x16, and 32x32, and can be configured with different input and output cards according to user needs.

II. the functional characteristics:

- ✓ Adopting a plug-in card design, users can freely choose or add/remove input/output signal modules;
- ✓ Input compatible with HDMI, HDBaset, 8K Multi Screen Treasure module, DVI, VGA, 3G-SDI signal input
- ✓ Output supports HDMI, HDBaset, DVI, VGA signal output;
- ✓ •Support customized super dot to ultra high resolution splicing, as well as regular high-definition signal switching and splicing;
- ✓ •The seamless matrix supports EDID learning function, which can read the EDID of the display device and write it to the input terminal;
- ✓ Support HDCP1.4 version with outstanding security and digital content protection;
- ✓ support Blu-ray DVD or other devices that require HDCP decoding;
- ✓ the card supports hot plugging, plug and play;
- ✓ with power-down memory function, with power-off field protection function;
- ✓ standard chassis button, infrared remote control, RS-232 serial port, central control, optional TCP-IP control or WEB control;
- ✓ international standard power supply support (100~240V AC, 50/60HZ), safety certification;

III.Chassis specifications

The core module of the product adopts a high-performance CPU image processing module, which can achieve up to 4K@30HZ Switch to ultra clear resolution. Single card 4-way card insertion design, with different chassis specifications configured according to requirements, supporting the selection of three chassis specifications: 8x8, 16x16, and 32x32.

8x8 (standard 2U)

16x16 (standard 3U)

32x32 (standard 6U)

IV. List of Input/Output Cards:

The product supports the selection of various input and output modules to achieve different functions. Input supports HDMI, DVI, HDBaset, 3G-SDI, HDBaset, and 8K multi screen treasure input modules; Output supports HDMI seamless card, DVI, HDBaset, VGA, HDMI seamless splicing card with 3.5mm independent audio, as shown in the following figure for various interface types:

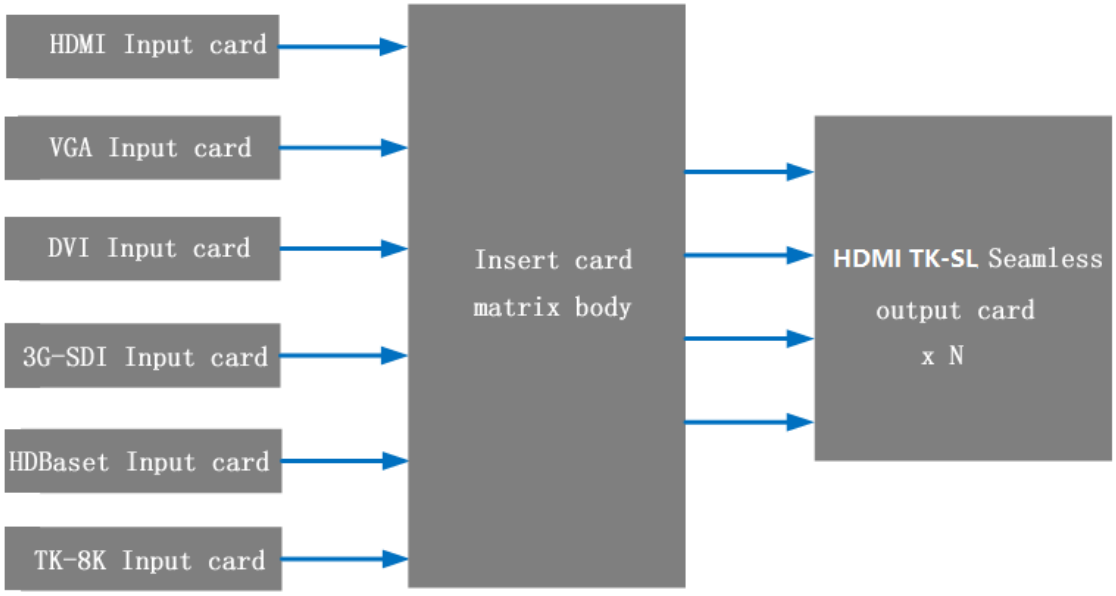
V. Implementing functions through the combination of input and output cards

5.1 Seamless splicing function

Through the HDMI TK-SL seamless output card, seamless switching and setting of any splicing mode can be achieved with any format of input card, achieving seamless splicing function.
Seamless splicing function with maximum input resolution support 1920x1080@60HZ Downward compatibility; Output maximum resolution support 1920x1200@60HZ Supports multiple output resolutions to choose from.
Seamless output card supports 1 independent 3.5mm audio output per output port, which can be connected to external speakers or amplifiers.

Seamless splicing matrix supported boards

The output card supports HDMI TK-SL seamless splicing output card module, and the input can support HDMI, DVI, VGA, HDBaset, 3G-SDI, TK-8K multi screen treasure input module.



4K matrix function

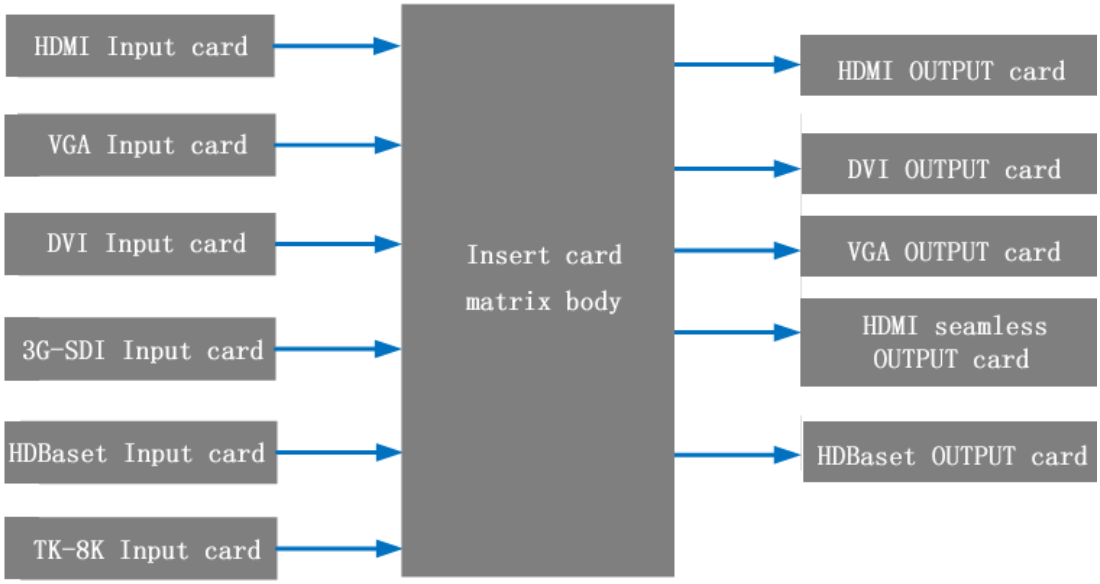
The 4K matrix can support the mutual conversion and arbitrary switching of signals in all different formats. The HDMI signal supports EDID learning function, which can read the EDID information of the display end and make the computer output the same resolution and refresh rate as the display end, solving product compatibility issues as much as possible.

The main body of the product adopts ADI high-performance image processing chips imported from abroad, which can perfectly support 4K@30HZ Display and stable transmission of signals.

The maximum input and output resolution that can be supported by a seamless matrix 4K@30HZ The RGB format and formats such as YCbCr 4:2:0, YCbCr 4:2:2, YCbCr 4:1:1, YCbCr 4:4:4, etc.

The 4K matrix input module supports HDMI in, VGA in, DVI in, 3G-SDI in, HDBaset in, and TK-8K multi screen Baoin input cards; The output module supports HDMI ou, DVI out, VGA out, HDMI TK-SL, and HDBaset output cards.

The 4K matrix does not support ordinary signal splicing function.



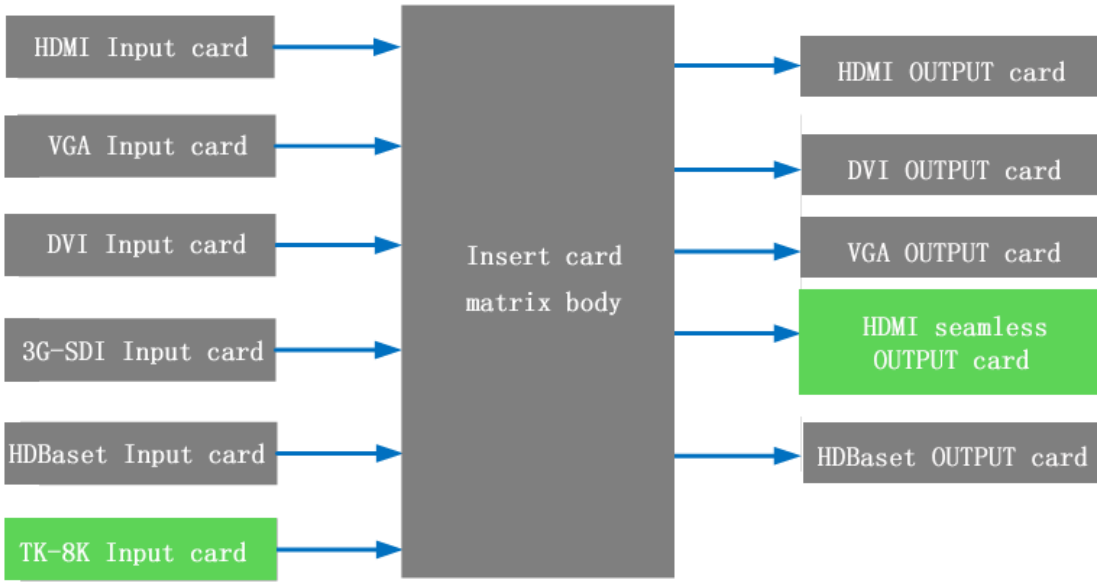
5.3. Ultra high resolution point-to-point stitching function

By using the TK-8K in ultra high resolution input module in combination with other modules, it is possible to achieve both single screen and arbitrary splicing mode display of ordinary high-definition input signals while displaying point-to-point ultra high resolution on the splicing wall. Solve the pain point of ordinary multi screen treasure that cannot achieve ordinary signal input and splicing after point-to-point splicing. The specific applications are as follows:

Most of the time, point-to-point splicing display is required, and during meetings, the splicing wall signal needs to be switched to signals such as laptops;

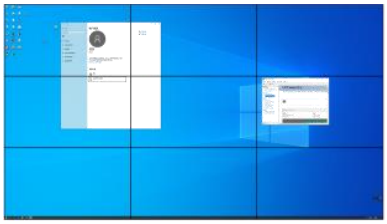
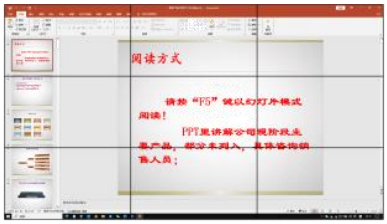
During certain time periods, point-to-point display of big data or video may require switching between displaying multiple ordinary high-definition monitoring signals;
Several computers require point-to-point display, but there is only one splicing wall, and several computers need to switch to splicing wall display;
A computer with multiple identical splicing walls that require synchronized display of the same content;
Other applications that require a combination of ultra-high resolution and high-definition signals.

The point-to-point splicing and ordinary signal switching splicing functions are highly customized functions, and specific requirements need to be communicated before placing an order. The following input and output modules can be selected for different user needs:



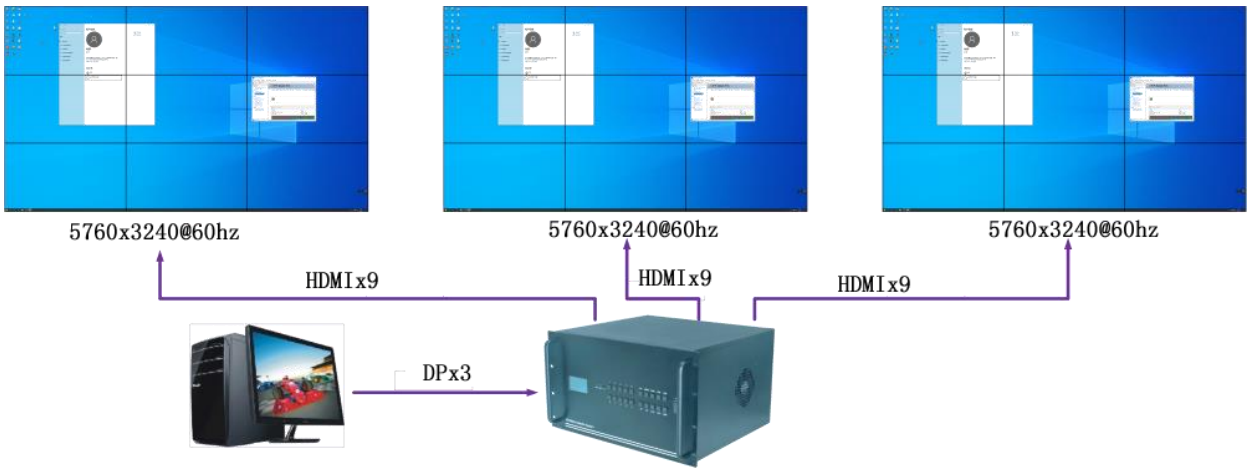
Common scene illustrations

Switching between point-to-point splicing, regular high-definition signal splicing, and multi screen arbitrary splicing combination modes for display:

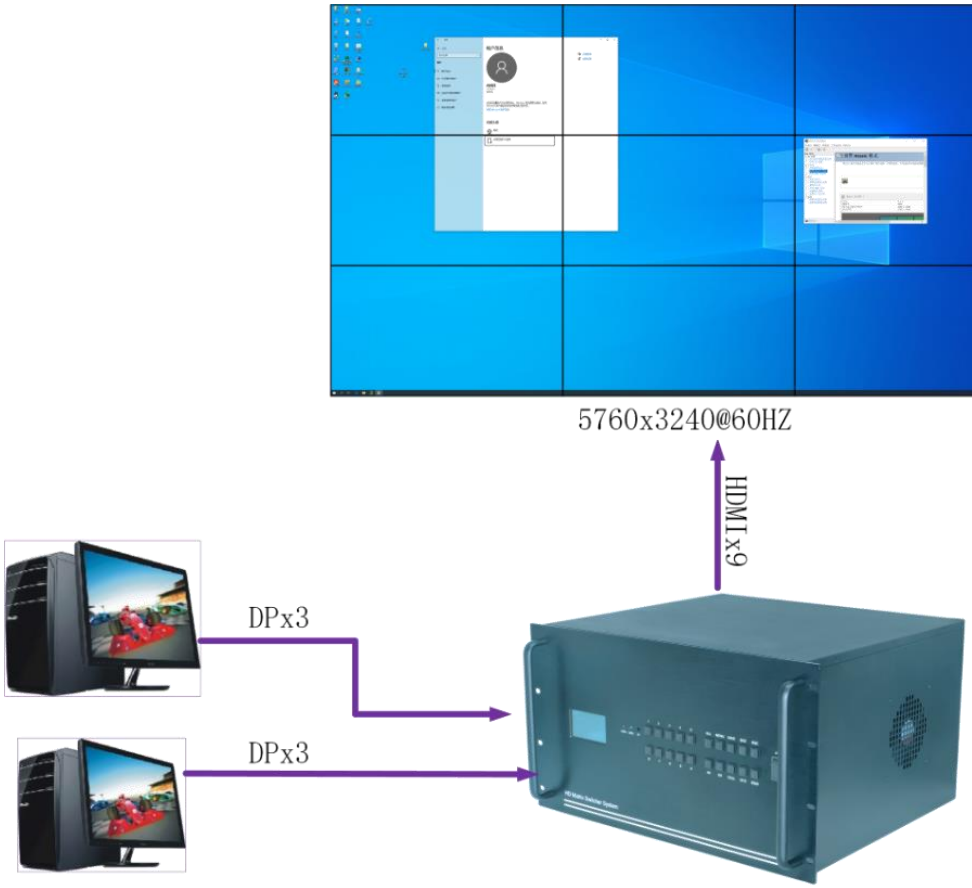




Copy a high-resolution point-to-point image from a computer to display on

different splicing walls in the same mode;



Multiple computers share a set of splicing walls for point-to-point display



6、 Control method

The product comes standard with RS-232, chassis buttons, infrared remote control, and optional TCP/IP, web pages, and wireless keyboard control for calling modes.

RS-232 serial port control

The control software or central control can fully control the device through RS-232 serial port, and the control software is a standard configuration of the product.

Chassis button control

Control various functions such as signal switching, EDID learning, mode storage, and calling through the chassis buttons. At the same time, signal switching is also more convenient:
The 8x8 matrix can achieve two key quick switching, or fix one output to achieve one key switching of input signals.
The 16x16 and 32x32 matrices can achieve four key switching or fix one output to achieve two key switching.

Remote control

The infrared remote control is almost identical to the silk screen markings on the chassis buttons, and the operation mode of the chassis buttons is completely consistent.

TCP/IP control

The control software or central control can fully control the device through TCP/IP, which is an optional feature.

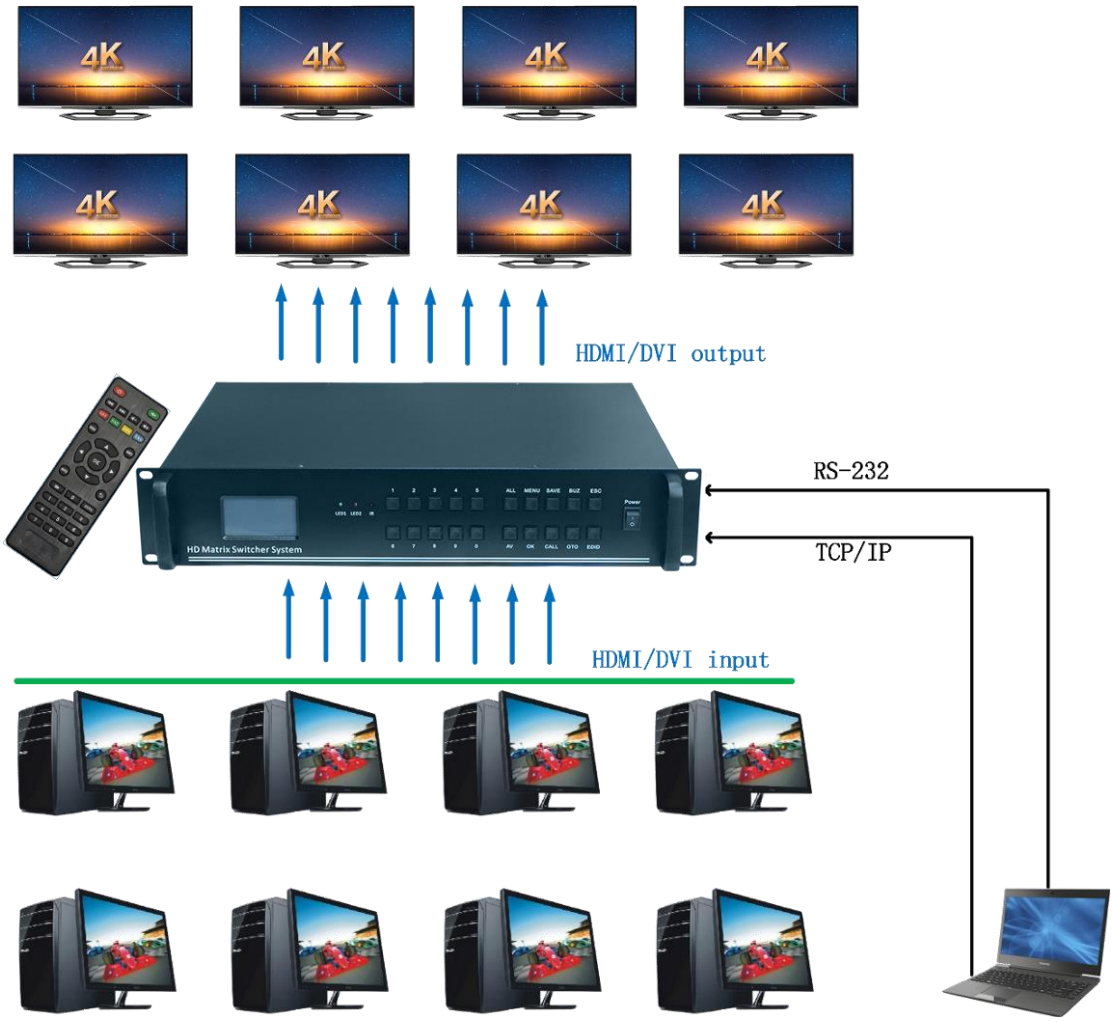
Web page control

It can be fully controlled by opening web pages through various systems such as mobile phones, tablets, and computers. After selecting web page control, the central control cannot be controlled through the network port, but it does not affect the control through RS-232 serial port and Windows APP.

KEYBOARD

The unique optional keyboard control function allows for storing and calling matrix modes through regular wired or wireless computer keyboards and numeric keyboards, making it more convenient and simple to use in scenarios where only the mode needs to be called.

System topology



VII. Technical parameters

model / Technical specifications	TK-MT0808	TK-MT1616	TK-MT3232
Video input			
Input	HDMI, HDBaset, DVI, VGA, 3G-SDI, TK-8K in optional		
input resistance	50Ω		
Video output			
Output	HDMI, DVI, VGA, HDBaset, HDMI TK-SL seamless splicing card optional		
Output impedance	50Ω		
Video signal			
HDMI in input card	3840* 2160@30HZ ,1920* 1200@60HZ ， 1920* 1080@60HZ Downward compatibility		
HDMI out output card	3840* 2160@30HZ ,1920* 1200@60HZ ， 1920* 1080@60HZ Downward compatibility		
HDBaset input card	70 meter module supports 4K30HZ extension of 40 meters, 1920x1080/ 1200@60HZ Extend by 70 meters 100 meter module supports 4K30HZ extension of 70 meters, 1920x1080/ 1200@60HZ Extend by 100 meters		
HDBaset output card	70 meter module supports 4K30HZ extension of 40 meters, 1920x1080/ 1200@60HZ Extend by 70 meters 100 meter module supports 4K30HZ extension of 70 meters, 1920x1080/ 1200@60HZ Extend by 100 meters		
TK-8K in Multi Screen Input Card	support 5760x1080@60HZ The 7680x1080@60HZ The 1920x3240@60HZ The 1920x4320@60HZ Input, downward compatible		
Other input/output modules	Highest support 1920x1200@60HZ Downward compatibility		
EDID management	Support EDID read-write function		
HDCP management	Supports high bandwidth digital content protection (HDCP) using DVI 1.0 and HDMI 1.4 standards.		
audio signal			
Digital audio	Support HDMI audio transmission		
Control section			
Serial control port	9-pin female RS-232 connector		
Infrared remote control	Default infrared remote control		
Front panel control	Button		
TCP/IP network control	Optional		
Web page control	Optional		
Computer keyboard control	Optional		

model / Technical specifications	TK-MT0808	TK-MT1616	TK-MT3232
agreement	Industry standard 1v1 control protocol		
conventional			
power supply	100VAC ~ 240VAC, 50/60Hz		
temperature	-20 ~ +70℃		
humidity	10% ~ 90%		
Power consumption	25W	40W	75W
Chassis size	Length 445x wide 309x high 88	Length 483x wide 309x high 133	Length 486x wide 400x high 266
product weight	4.9Kg	6.75Kg	13.8Kg