KENSENCE

FMX Flexible Matrix Switcher

Operation manual

Kensence (Shenzhen) Technology Development CO.,LTD

Version：V1.01.01

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Content

Safety Reminder

✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧

To protect the device and operating personnel from electrostatic discharge, you need to check and ensure that the device is grounding good before the device is powered on. Please observe the following when you install, use, maintain this equipment.

Make sure the device ground connection.

➢ Please use single-phase three wire system AC 220V power supply, and ensure all transmission system is grounding good.

➢ To protect operating personnel and the device ，please turn off all power supplies and pull the plug before moving the device or doing some specific works witch need to be done when the electricity is turned off . Please turn off   the main power switch on rainy days or when not in use for a long time.

➢ Please do not put anything upon the cables, or tread the cables .

➢ To avoid damaging the device , please turn off power supply before plugging cable into the device or pulling cable from device. The damage caused by plugging/ pulling cables without turning off power supply is outside the scope of the warranty.

➢ The power of the device gives out heat when it works, so it's necessary to keep the work environment ventilated to protect the device from the damage caused by

overtemperature.

➢ Do not place the device in very cold or very hot places. Do not sprinkle any corrosive

chemicals or liquid on or around the device.

➢ To avoid accident or any further damage ,non-professionals please do not dismantle or

maintain the device without permission.

➢ Do not sprinkle any corrosive chemicals or liquid on or around the device.

1.Introduction

FMX16/FMX32 is a new type of HD seamless modular matrix of one card one single , which supports a total of 16/32 HD video. The 12 / 24 channels can be customized input / output mode, of which 4/8 channel is fixed output. It can automatically detect of card type and support different input and output channel number.The system support HDMI, DVI, VGA, SDI, YPBPR, CVBS, HDBaseT, HDCI and other signals, can customize the output resolution, the highest is 1920*1200@60Hz. It also adopts seamless switching technology, making the switching process without black, blue, tearing, jitter and so on.It can be widely used in government, judicial, military, education, medical, business and other occasions.

2.Features

- Modular design, support HDMI, DVI, SDI, HDBT, HDCI signal card, VGA & Audio cards and can be free to match, improves system flexibility;

- Compatible with HDCP2.2 and HDCP1.4;

- Support PCI-E 32 slots

- Available with choice of I/O cards, Free configuration from 1x38 to 24x8 (FMX 32), from 1x15 to 12x4 (FMX16)

- Automatically detected input/output signal card.

- Support PoH

- Scaling technology

- Support seamless switching (4k);

- Flexible control mode, with key panel (button) operation, GUI, RS232 control function, network port control function, infrared control function, etc.;

- Using LCD screen displays real-time working status;

- Support scene save and call function;

- Support EDID learning function;

- Automatic detection of input and output cards;

3.System connection

1.Connect signal source such as blu-ray player、game controller、A/V receiver、cables、satellite receiver etc. to input port,when plug in and out of the card, please be careful to operate in case of   damaging   the circuit when the matrix is power on.

2.Connect the output port to HD display such as HDTV or HD projector.

3.Firstly power on the signal source，then the matrix(with power supply)，finally devices connected to the output port .

4.Plug in power to each device in the same order .

4.Standard configuration

Please check the outer package before using this product. Please contact us if the product is faulted or not intact. We will sincerely serve you according to relevant provisions.

NO.	Name	Quantity	Unit
1	Matrix Host	1	pcs
2	Dryer 50g	1	pcs
3	AC power adapter	2	pcs
4	Certification	1	pcs
5	Warranty card	1	pcs
6	User manual	1	pcs

5.1 Specification

Model	FMX16
Description	16 card enhanced HD modular matrix
Card slot	16 card of 12 arbitrary combination and 4 fixed output
Input module	Support CVBS, YPbPr, VGA, HDMI, DVI, AUDIO, 3GSDI, HDCI, HDBase T
Output Module	Support CVBS, YPbPr, VGA, HDMI, DVI, AUDIO, 3GSDI, HDCI, HDBase T
Bandwidth	10.2 Gbps
Serial port control	Control protocol : RS232(baud rate : 115200 data bits:8 stop bit 1:no parity Connector : 9 pin D-sub(DE9F) jack2=TX 3=RX 5=GND
Network IP	Control protocol : TCP/IP Connector : RJ45 connector 10/100 Base-T Ethernet
Color space	Supports RGB444, YUV444, YUV422 color space, supports x.v.Color extended gamut standard
Electrostatic protection	Human body discharge mode: ±8kV (air gap discharge) ± 4kV (contact discharge)
Input Voltage	100 VAC-260 VAC, 50/60 Hz,international adaptive power supply 23W(max)/0.5w(Standby state)
Operating Temperature	-10℃---50℃
Storage Temperature	-20℃---60℃

5.2 Specification

| Model	FMX32
Description	32 card enhanced HD modular matrix
Card slot	32 card of 24 arbitrary combination and 8 fixed output
Input module	Support CVBS, YPbPr, VGA, HDMI, DVI, AUDIO, 3GSDI, HDCI, HDBase T
Output Module	Support CVBS, YPbPr, VGA, HDMI, DVI, AUDIO, 3GSDI, HDCI, HDBase T
Bandwidth	10.2 Gbps
Serial port	Control protocol : RS232(baud rate : 115200 data bits:8 stop bit 1:no parity
Network IP	Control protocol : TCP/IP Connector : RJ45 connector 10/100 Base-T Ethernet
Color space	Supports RGB444, YUV444, YUV422 color space, supports x.v.Color extended
Electrostatic	Human body discharge mode: ±8kV (air gap discharge)
Input Voltage	100 VAC-260 VAC, 50/60 Hz,international adaptive power supply 23W(max)/0.5w(Standby state)
Operating Temperature	-10℃---50℃
Storage Temperature	-20℃---60℃

6.Device panel description
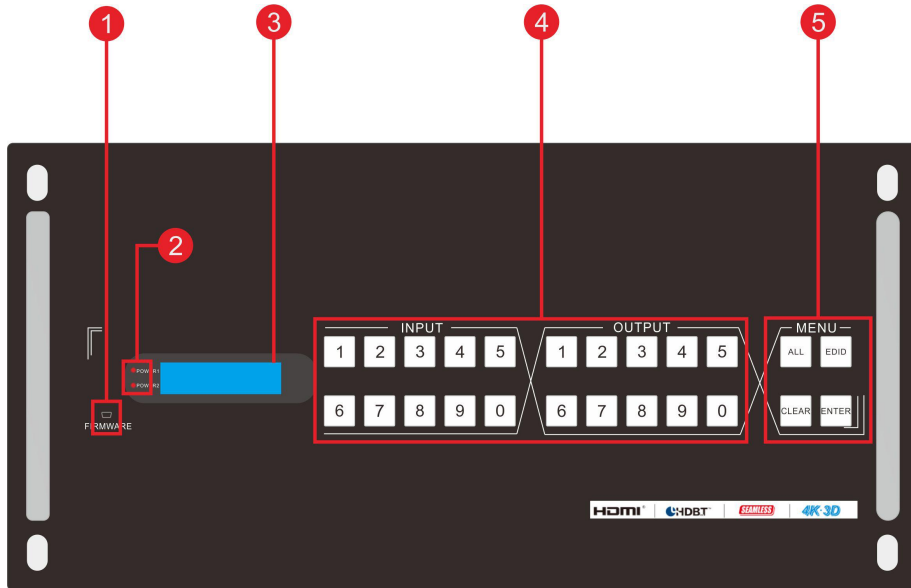
Fig 6.1.1 FMX32 front panel

1.Micro USB interface: through the interface to upgrade the firmware;

2.Power indicator, when switch on it's always bright;

3.LCD screen: display real-time operating status;

4.INPUT and OUTPUT Key area;

5.function key area: including "ALL" select button. " EDID" button." CLEAR" button,"ENTER" button this four buttons.
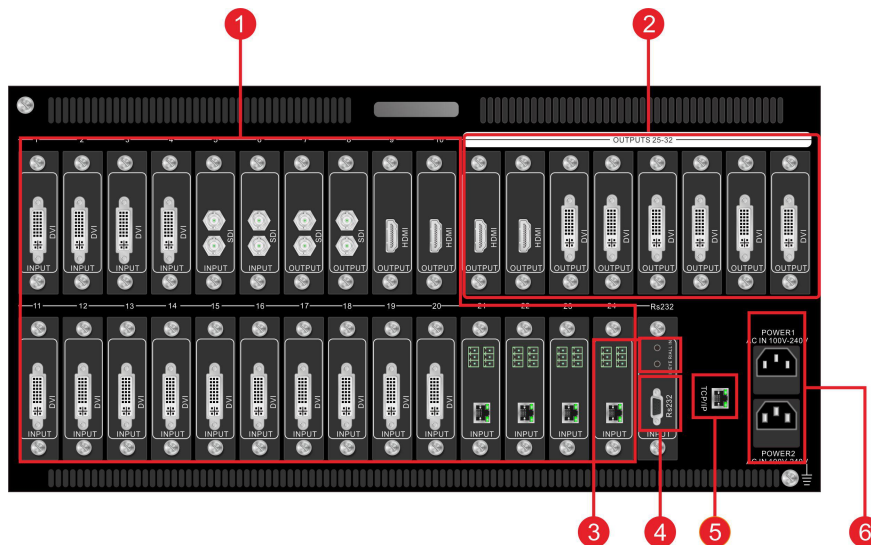

Fig 6.1.2 FMX32 rear panel

1 audio and video card channel 1~10 and 11~24: according to the need to customize input and output card, the system will automatically recognize the input card or the output card;

2.Signal output card 25~32:this eight card slots are fixed outputs, can only receive the output signal card;

3 Infrared signal input port: connected with carrier infrared receiver, the received infrared signal simultaneously transmitted to the remote receiver through the twisted pair to achieve multi broadcast control;

4.RS232 port: connected with the control device, the control device can send commands to control the machine.

5.Network connection port: connected with the control device (such as PC) control terminal send commands or through the GUI interactive interface to control the machine;

7.Card introduction

1.FMX-HDMI-4K-IN/OUT （4Kx2K signal input and output card）

FMX-HDMI-4K-IN   FMX-HDMI-4K-OUT
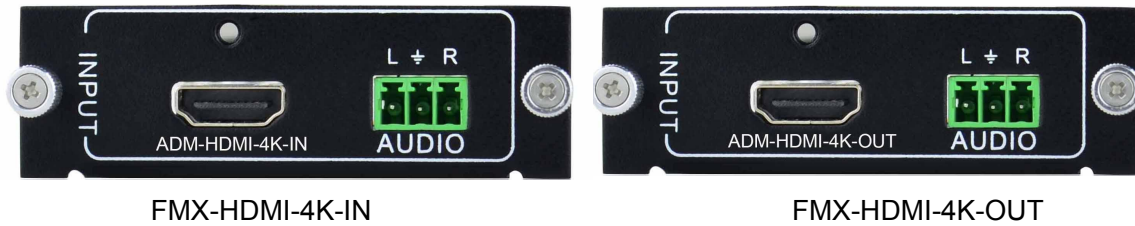
- ➢ Support HDMI1.3 standard, compatible with HDCP1.2 standard and DVI signal;

- ➢ HDMI 1 port, Sound Analog 1 port

- ➢ Maximum resolution support 4Kx2k;

- ➢ Support PCM Sound System

- ➢ Bandwidth 6.75 Gbps

- ➢ The output resolution of the output card can be adjusted: 1360x768@60Hz, 1024x768@60Hz, 1280x720@60Hz, 1280x800@60Hz, 1920x1080@60Hz (default), 1920x1200@60Hz, 1600x1200@60Hz;

- ➢ Compatible with EDID, Signal Switching Speed 100 ns

- ➢ The input audio can be selected through the instruction for HDMI embedded audio /
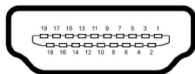
external analog audio, the default is HDMI embedded audio;

The output analog audio on / off can be set by command, the default is off;

Mother port HDMI connector pin arrangement:

| Pin	Signal name	Pin	Signal name
1	TMDS Data 2+	20	SHELL
2	TMDS Data 2 Shield	19	Hot Plug Detect
3	TMDS Data 2-	18	+5V Power
4	TMDS Data 1+	17	Ground
5	TMDS Data 1 Shield	16	DDC Data
6	TMDS Data 1-	15	DDC Clock
7	TMDS Data 0+	14	No Connect
8	TMDS Data 0 Shield	13	CEC
9	TMDS Data 0-	12	TMDS Clock-
10	TMDS Clock+	11	TMDS Clock Shield

2、FMX-HSDA-IN/OUT(Universal signal input and output card)
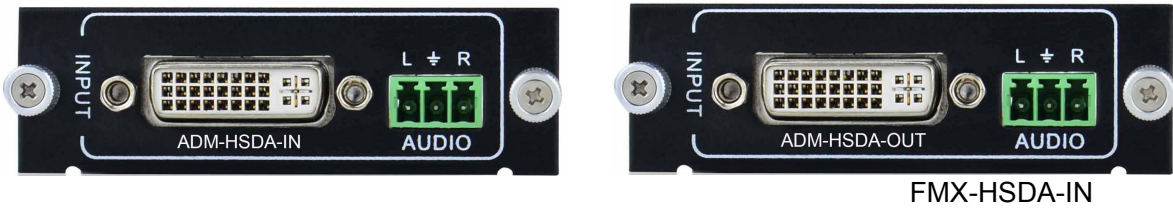
FMX-HSDA-IN

FMX-HSDA-OUT

➢ Compatible with HDMI1.3 and HDCP1.4 standards;

➢ The input and output ports are supported by DVI, HDMI, VGA, YPbPr and C-VIDEO format signals;

➢ Automatic identification of input signal format, no need to set manually;

➢ Output signal format can be set through the serial port;

➢ The output resolution of the output card can be adjusted: 1280x720P@60Hz, 1920x1080@60Hz (default), 800x600@60Hz, 1024x768@60Hz, 1280x1024@60Hz, 1920x1200@60Hz;

➢ With embedded EDID management technology (for HDMI,DVI signal),support for DDC control;

Mother port DVI-I connector pin arrangement:
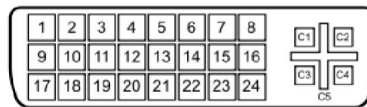
Pin	Function	Pin	Function
1	T.M.D.S.Data2-	13	T.M.D.S.Data3+
2	T.M.D.S.Data2+	14	+5V Power
3	T.M.D.S. Data 2/4 Shield	15	Ground (for +5V)
4	T.M.D.S. Data 4-	16	Hot Plug Detect

5	T.M.D.S. Data 4+	17	T.M.D.S. Data 0－
6	DDC Clock	18	T.M.D.S. Data 0+
7	DDC Data	19	T.M.D.S. Data 0/5 Shield
8	No Connect	20	T.M.D.S.Data5－
9	T.M.D.S.Data1-	21	T.M.D.S.Data5＋
10	T.M.D.S.Data1+	22	T.M.D.S. Clock Shield
11	T.M.D.S.Data1/3 Shield	23	T.M.D. S. Clock +
12	T.M.D.S.Data3-	24	T.M.D.S .Clock－
C1	Analog Red	C2	Analog Green
C3	Analog Blue	C4	Horizontal Sync Analog
C5	Analog Ground（analog R，G，B return）		

When signal is VGA, YPbPr and C-VIDEO, with different adaptor/ line to use:

DVI to YPbPr

Pin	Signal name	Pin	Signal name
C1	RED	C3	BLUE
C2	GREEN	C5	GND
The remaining pins are empty			

DVI to C-VIDEO

Pin	Signal name
C1	YELLOW
C5	GND
The remaining pins are empty	

DVI to VGA

DVI-I Pin	VGA Pin	Signal name	DVI-I Pin	VGA Pin	Signal name
8	14	HSync	C4	13	VSync
C1	1	RED		6	GND
C2	2	GREEN	C5	7	
C3	3	BLUE		8	
The remaining pins are empty					

3、FMX-HDBT-IN/OUT（HDBT remote signal input and output card）


FMX-HDBT-IN

FMX-HDBT-OUT

➢ Accord with HDBT1.0 standards, compatible with HDCP1.4; EDID;

- Accord with HDMI 1.3, DVI 1.0 standards.

- Support 1080P(1920x1080) 3D signal, maximum resolution support 4Kx2K;

- Support PCM Sound system

- Signal Switch Speed 100 ns

- HDBT (RJ 45) 1 port, Sound analog 1 port

- HDBT ports to be used with a remote transmitter / receiver;

- HDBT port indicator status: the device is connected to the power, when the cable is not connected, the yellow light flashes; when the cable is connected, the yellow light flashes, the green light is always on;

- HDBT port transmits up to 70 meters when resolution is 1080P,when resolution is 4Kx2K can reach the maximum distance of 40 meters (CAT6);

- Each HDBT port also contains 1 Audio external audio, 1 RS232 control signal;

- RS232 serial port coordinate with remote transmitter / receiver serial port to achieve two-way communication;

- Audio input port can be select by serial command AUDIO[X]I[Z] choosing embedded audio or non balance external audio , instruction description: AUDIO[X]I[Z]. select the audio input method. [x] denotes the port number and [Z] means selecting audio, 0 means selecting HDMI embedded audio input, 1 means selecting the analog input.

Description: through RS232 port control remote device, can only control device with baud rate of 2400 and 4800, 9600,19200, 38400,57600 and 115200;output port connected to the highest 1080P screen,need to adjust the input signal resolution to 1080p. Video port is RJ45, the use of class A or B straight twisted pair connection, the proposed use of class B straight line, both ends follow the same standard, the following is the class A/B straight line pin reference standard:

TIA/EIA 568A		TIA/EIA 568B	
Pin	Wire color	Pin	Wire color
1	Green and white	1	Orange and white
2	Green	2	Orange
3	Orange and white	3	Green and white
4	Blue	4	Blue
5	Blue and white	5	Blue and white
6	Orange	6	Green
7	Brown and white	7	Brown and white
8	Brown	8	Brown
Each color corresponds to the half white form a pair			
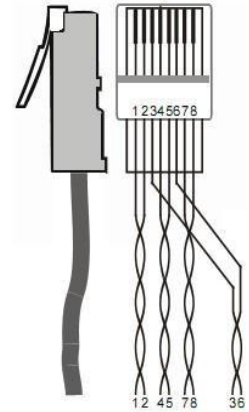
4、FMX-3GSDI-IN/OUT(SDI signal input and output card)


FMX-3GSDI-IN   FMX-3GSDI-OUT

➢ Each input signal with one SDI loop out;

➢ Support HD-SDI, SDI, 3G-SDI signal;

➢ Input resolution can be automatic recognition;

➢ Upscaling function,the low input resolution was upscaled to 1080P output by default;

➢ Output resolution of each output card can be adjusted: Output1280x720@60Hz,

1280x800@60Hz,1024x768@60Hz,1920x1080@60Hz (default),

1360x768@60Hz1920x1200@60Hz1600x1200@60Hz;

BNC connector diagram

BNC Connector
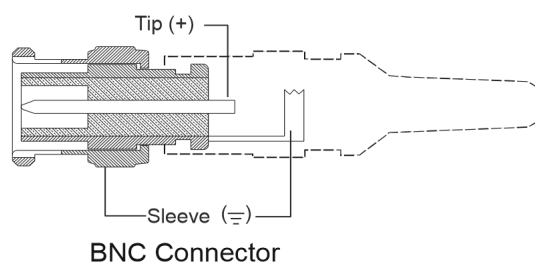
5、FMX-HDCI-IN/OUT(POLYCOM video conference special card)

➢ Input card connect to Polycom EagleEye cameras,which can be powered by matrix host.

➢ Output card connect to Polycom conference terminal (such as: HXD 7000 HD)

➢ Compatible with YPbPr,maximum resolution support 1080P

FMX-HDCI-IN   FMX-HDCI-OUT

HDCI 60P   parent pin description:

Signal	Pin	Signal	Pin
Y	47	GND	7
Y SHIELD	46	GND	8
Pb	13	GND	48
Pb SHIELD	12	GND	58
Pr	14	Rx	1
Pr SHIELD	15	Tx	2
+12 VDC	4	+12 VDC	10

Connect the HDCI connector, do not insert joint oppsite so as not to burn the HDCI card.

8.Matrix control operation introduction

8.1Panel control

Switching operation

First select the input port, then select the output port and then press the "ENTER", select the input and output port using combination forms.

Example 1:Input "1" switch to output "5", press input area "0" and "1" and output port area"0" and "5", then press "ENTER" key is ok.

Example 2: the input "11" switch to the output "13", press"1" in the "input port area" two times, and then press "1" and "3" in the output port area and then press "ENTER".

If you want to switch one way to all the output ports, you can use the "ALL" button.

Example 3: input port "3" switch to all output ports, press input port "0" and "3", and then press the "ALL" button, finally press the "ENTER" button.

During the operation, before the "ENTER" key is pressed, the "CLEAR" key is used to clear the selected input and output ports.

EDID function key using

Using EDID function key can easily call the output display EDID information, the specific operation is as follows:

Example 1: input port "2" call the output "8" EDID information, press the "EDID" button, and then press the input "0" and "2", the output "0" and "8", and finally press "ENTER".

8.2 RS232 Control

Preparation before control

Connect the computer serial communication port and the matrix RS232 communication port through straight line RS232 . After application software is installed, you can use the computer to control the matrix.

Here take SSCOM32 as an example to explain.

Software installation method: copy control software to normal connection control device.

Software uninstall method:delete the overall folder where the control software is.

Basic setting:

Install RS232 software on the computer, double-click the installation package in the software running icon (as shown in Figure 8.2.1)

Fig8.2.1 SSCOM32 Software icon

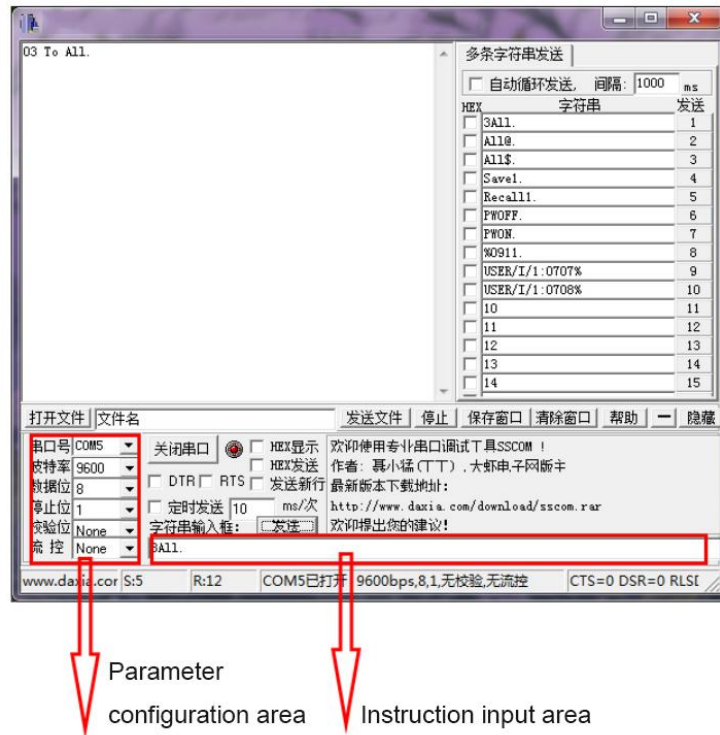Open RS232 software, the main interface as shown below 7.2.2:

Fig8.2.2 software interface

Fill in the correct serial number,communication protocol, baud rate, data bits, stop bits, parity bit in the parameter configuration area,can input command in command input area to control the local or remote receiver.

RS232 control command

Communication protocol: baud rate: 9600 data bits: 8 stop bit: 1: no parity bit

RS232 Command	Function description	Return code
Control host command		
/*Type;	Query matrix model	MODULAR3232-N
/%Lock;	Lock the front panel button	System Locked!
/%Unlock;	Unlock the front panel button	System Unlock!
/^Version;	Query software version	Vx.x.x
/:MessageOff;	Closes the serial port returns,returns only " SWITCH OK!" character information.	Closed The Message Return.
/:MessageOn;	Open the serial port return	Enabled The

		Message Return.
Undo.	Cancels the previous operation and returns to the state of the previous switch.	Undo
Demo.	Set the system to work in Demo mode. In this mode, each input and output will be switched in turn, each interval is 2 seconds. Such as AV0808: in Demo mode, will be 1->1.1->2… …8->7. 8->8. 1->1.1->2… …	Demo Mode AV: 01->001 … …
[x]All.	Switch input channel [x] to all output	01 To All
All#.	Set all output corresponding to all input, such as: 1->1… … 32->32	All Through.
[x]#.	The channel [x] input switch to the channel [x] output (audio and video)	01 Through.
All$.	Turn off all output channels (audio and video)	All Closed.
[x]$.	Close channel [x] output (audio and video)	AV: 01 Closed.
ALL@.	Open all output channels	All Open.
[x]@.	Open output channel [x]	01 Open.
[x1]V[x2],[x3],[x4].	Video switching: switch [x1] to all or one of [x2], [x3] and [x4]......,using ", " to seperate multi-channel output	1V1,2
[x1]B[x2],[x3],[x4].	Audio and video synchronization switching: switch [x1] to all or one of [x2], [x2], and [x4]...... using ", " to seperate multi-channel output	1AV1,2
Status[x].	Query signal input status of the output channel [x]	V: 01->001 A: 01->001

Status.	Query signal input status of all output channel	V: 01->001 A: 01->001 … …
Save[Y].	Save the current state to [Y] group, [Y] is 0-9 numeric keys	Save To F8
Recall[Y].	Call the input and output switching state of the storage unit in group [Y], and [Y] is 0 to 9 digit key.	Recall From F8 V: 01->001 A: 01->001 … …
Clear[Y].	Clear the stored unit [Y] data, and the status is all closed.	Clear F8
PWON.	regular work	PWON
PWOFF.	Standby	PWOFF
HDCPON.	Opening the HDCP protocol in output channel	HDCPON
HDCPOFF.	Closing the HDCP protocol in output channel	HDCPOFF
/V00.	Query software version number	Vx.x.x
EDIDUpgrade[x].	Serial port to upgrade the EDID data, [x] means the input port, after sending instructions, the machine will be prompted to send EDID files, file format is .bin, reserve 10S timeout	

UpgradeIntEDID[y].	Update the built-in EDID data, support 6 kinds of built-in EDID, after receiving the instruction, the machine will prompt to send EDID files, the file format is .Bin, reserve 10S timeout, y is the EDID representative value: 1 ~ 6: 1. 1080P 2D 5.1 channel; 2. 1080P 2D 2.0 channel; 3. 720P 2D 5.1 channel; 4. 720P 2D 2.0 channel; 5. 4Kx2K 2D 5.1 channel; 6. 4Kx2K 2D 2.0 channel;	
EDID/[x]/[y].	Input port x uses the built-in EDID named y	
EDIDG[x].	Get the output port EDID data and display [x] output port number through serial port	
EDIDM[X]B[Y].	Copy [X] the monitor EDID of output port to [Y] input port, if error, will be initialized by the EDID data configuration	EDIDM2B1
%0911.	Recover the host factory settings (only to restore the port corresponding state, do not restore the scene state)	
Signal card instruction		
AUDIO[X]I[Y].	HDBaseT/HDMII input card: set X channel audio input mode, [X] means the port number; [Y] means the choice of audio (0 means the choice of HDMI embedded audio, 1 means the choice of external audio)	AUDIO1I0.
USER/I/[x]:0648%;	VGA input card: open channel [x] audio	0648%

USER/I/[x]:0649%;	VGA input card: close channel [x] audio	0649%
USER/I/[x]:0684%;	VGA input card: set input channel [x] color space to YCBCR	0684%
USER/I/[x]:0685%;	VGA input card: set input channel[x] color space to RGB	0685%
USER/I/[x]:0622%;	VGA input card: set input channel [x] signal source to VGA	0622%
USER/I/[x]:0623%;	VGA input card: set input channel [x] signal source to YPbPr	0623%
USER/I/[x]:0624%;	VGA input card: set input channel [x] signal source to S-VIDEO	0624%
USER/I/[x]:0625%;	VGA input card: set input channel [x] signal source to C-VIDEO	0625%
USER/I/[x]:0626%;	VGA/DVI/HDMI/SDI input card:set input channel [x]resolution to 1024x768 60Hz	0626%
USER/I/[x]:0627%;	VGA/DVI/HDMI/SDI input card:set input channel [x]resolution 1280x720 60Hz	0627%
USER/I/[x]:0628%;	VGA/DVI/HDMI/SDI input card:set input channel [x]resolution 1280x800 60Hz	0628%
USER/I/[x]:0629%;	VGA/DVI/HDMI/SDI input card:set input channel [x]resolution 1920x1080 60Hz	0629%
USER/I/[x]:0619%;	VGA/DVI/HDMI/SDI input card:set input channel [x]resolution 1360x768 60Hz	0619%
USER/I/[x]:0620%;	VGA/DVI/HDMI/SDI input card:set input channel [x]resolution 1920x1200 60Hz	0620%
USER/I/[x]:0621%;	VGA/DVI/HDMI/SDI input card:set input channel [x]resolution 1600x1200 60Hz	0621%
USER/I/[x]:0606%;	VGA/DVI input card:automatic correction of input channel [x] signal (only for the VGA signal)	0606%
USER/I/[x]:0617%;	VGA/DVI/HDMI/SDI input card:restore the input channel [x] signal to factory settings	0617%
USER/I/[x]:0686%;	VGA/DVI/HDMI input card: set the input channel [x] signal format to HDMI	0686%
USER/I/[x]:0687%;	VGA/DVI input card: set the input channel [x] signal format to	0687%

	DVI	
USER/I/[x]:0698%;	VGA/DVI/HDMI/SDI input card:Software upgrade (upgrade program named MERGE)	0698%
USER/I/[x]:02xx%;	DVI/HDMI/SDI input card:set the input channel [x] image brightness values xx（00～99）	02xx%
USER/I/[x]:03xx%;	DVI/HDMI/SDI input card:set the input channel [x]image contrast value xx（00～99）	03xx%
USER/I/[x]:04xx%;	DVI/HDMI/SDI input card:set the input channel [x]image chroma value xx（00～99）	04xx%
USER/I/[x]:05xx%;	DVI/HDMI/SDI input card:set the input channel [x]image sharpness value xx（00～99）	05xx%
USER/I/[x]:0607%;	DVI/HDMI/SDI input card:set the input channel [x]image color temperature	0607%
USER/I/[x]:0608%;	DVI/HDMI/SDI input card:set the input channel [x] image proportion	0608%
USER/I/[x]:0614%;	DVI/HDMI/SDI input card: set the input channel [x] signal to P.P image mode, cycle switch to different image mode	0614%
USER/I/[x]:0711%;	HDMI input card: set the input channel [x] to HDMI embedded audio	0711%
USER/I/[x]:0712%;	HDMI input card: set the input channel [x] to external analog audio	0712%
USER/O/[x]:0201%;	DVI output card: set output channel [x] signal source to YCBCR	0201%
USER/O/[x]:0202%;	DVI output card: set output channel [x] signal source to VGA	0202%
USER/O/[x]:0203%;	DVI output card: set output channel [x] signal source to C-VIDEO	0203%
USER/O/[x]:0617%;	DVI output card: restore output channel [x] to the factory settings	0617%
USER/O/[x]:0804%;	DVI/HDMI output card:set output channel [x] signal resolution to1280x720P @60Hz	Resolution Out03

		1280x720P
USER/O/[x]:0813%;	DVI/HDMI output card:set output channel [x] signal resolution to 1920x1080P @60Hz	Resolution Out03 1920x1080P
USER/O/[x]:0824%;	DVI/HDMI output card:set output channel [x] signal resolution to 1024x768 @60Hz	Resolution Out03 1024x768
USER/O/[x]:0826%;	DVI/HDMI output card:set output channel [x] signal resolution to 1280x1024 @60Hz	Resolution Out03 1280x1024
USER/O/[x]:0837%;	DVI/HDMI output card:set output channel [x] signal resolution to 1920x1200 @60Hz	Resolution Out03 1920x1200
USER/O/[x]:0110%;	HDMI output card: open output channel [x] analog audio	0110%
USER/O/[x]:0111%;	HDMI output card: close output channel [x] analog audio	0111%
GetResolution[x].	DVI/HDMI output card: access to the resolution of output channel [x]	
GetVGAPortMode[x].	DVI/HDMI output card: query the state of the VGA output port of channel [x]	

Note：

1. USER/[Y]/[x]:*****; instructions for card instructions, including: ***** is instructions filled in by user , such as 0623%, Y for the I/O, I means the input, O is output, [x] means the input / output port number;

2. signal card instruction for different signal card, all has marked in the instruction function description part ;

3. EDID instruction, only effective to card supports EDID learning function, including ADM-HDMI-4K-IN/OUT, ADM-HSDA-IN/OUT

4. When output signal is set to HDMI or DVI,you can choose the color space,set to HDMI

output the color space can be YCBCR,RGB; set to DVI the color space only supports

RGB;

5. [x1], [x2], [x] in instructions is the effective range of input or output channel number, if

beyond the scope, it can seen as command input error;

6. "[" and "]" in instructions are non sending characters;

7. The end of each instruction can not be missed, such as "." ", and so on, and must be

punctuation in English input;

8. Pay attention to the Caps Lock.

8.3 TCP/IP communication port control

Through TCP/IP communication port control matrix, its factory default IP address is:

192.168.10.2; gateway: 192.168.0.1 (IP, gateway can be changed), port number: 4001 (no

change). The matrix host can be connected to a single non networked computers, control

through the GUI software, can also access to LAN, realizes multi machine control at same

time, using TCP / IP communication port control matrix need to change the control

computer's IP same as matrix's IP before establishing a connection.

8.3.1Control computer IP changes

First: open the network and sharing center, open "local connection", click "properties" to

enter the interface as shown in figure A:
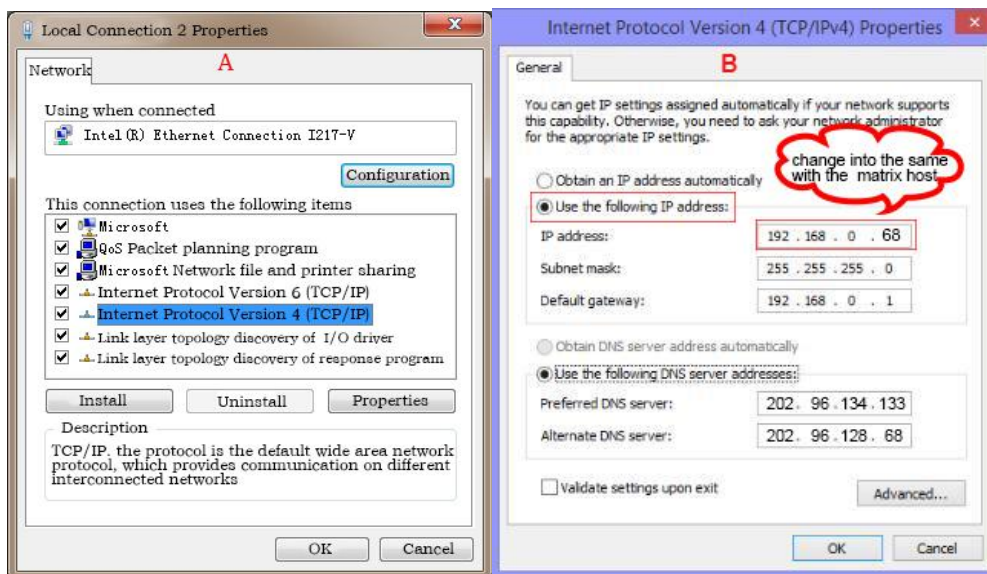
Fig8.3.1 Computer IP changes

Second: select IPV4, click on "property" to enter the interface as shown in figure B:

Third:choose" using the following IP address", change the IP gateway to the same as matrix host: 192.168.0.178;

Fouth:Click OK, IP change completed

8.3.2 Loading and use of GUI software

First: connect matrix host to a computer with same IP through twisted pair, open browser, enter the default IP:192.168.10.2 (IP is changeable,for example: matrix host IP change to 192.168.0.112. Here input IP 192.168.0.112),then enter the login interface, as shown in Figure 8.3.2.
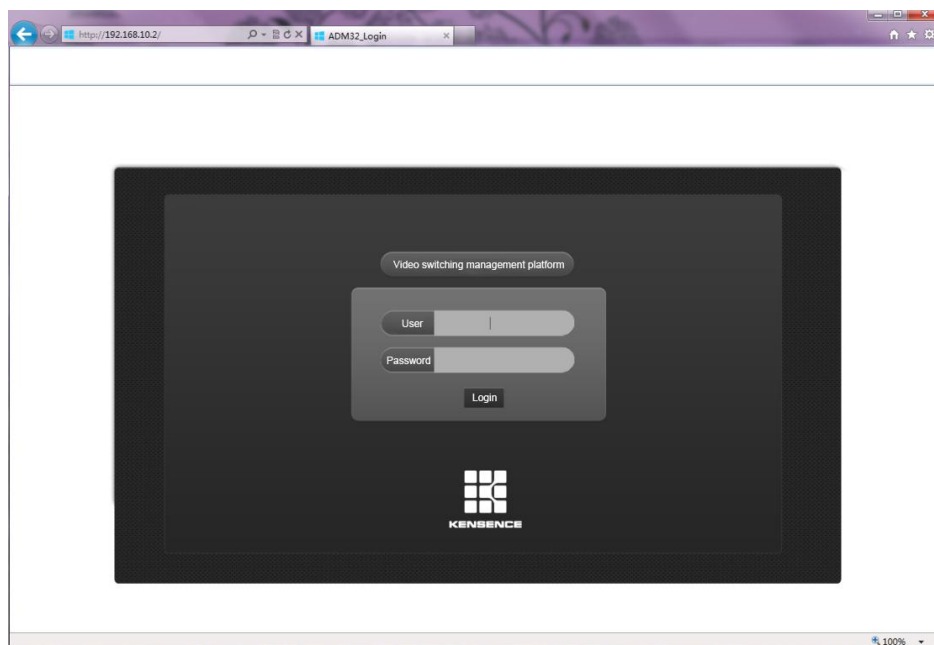
Fig 8.3.2 GUI loading interface

Second: enter the user name and password on the login screen, the factory default user name: user, the default password: user, click OK to enter main interface, as shown in figure 8.3.3;
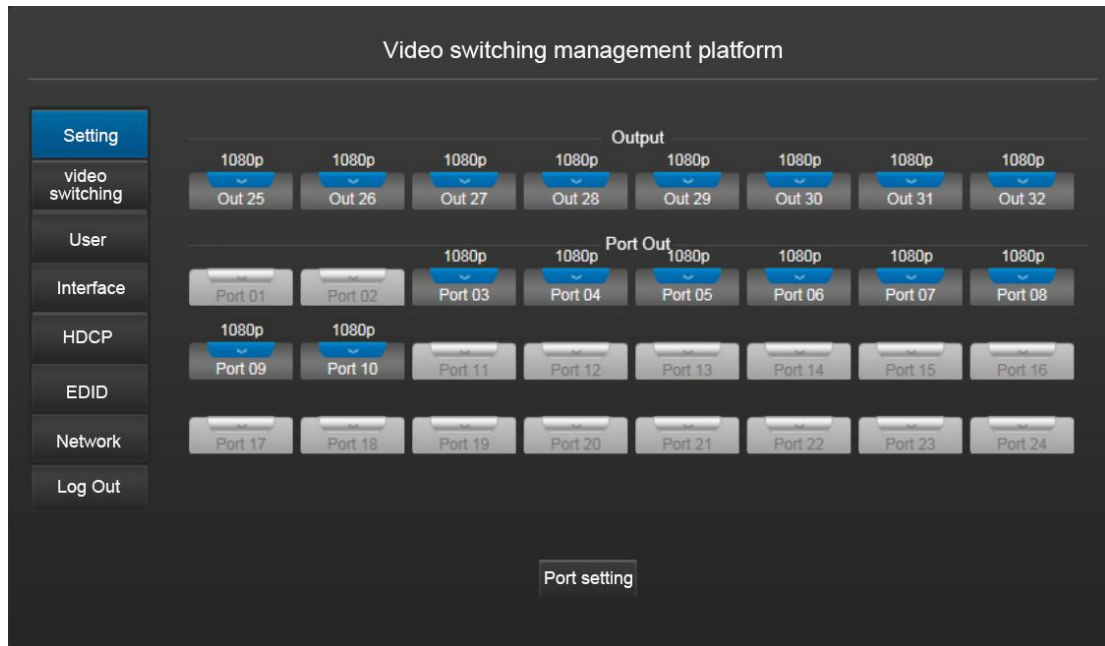
Fig 8.3.3 GUI main interface

Output card resolution setting

Enter the GUI main interface, select "Settings" option, as shown in Fig 8.3.3, and then select the "resolution settings" option, then select one output card, the resolution can be set. For example, to set the "27" output card resolution, click on drop-down arrow of channel "27" card , select the appropriate resolution is ok.

Output card signal output mode change

Enter the GUI main interface, select "Settings" option, as shown in Fig 8.3.3, and then select "port settings "option,as shown in figure 8.3.4, select one output card,can change this card output mode to VGA/YPbPr/CVBS,and the change is completed by clicking "OK" (valid to ADM-HSDA-OUT card).
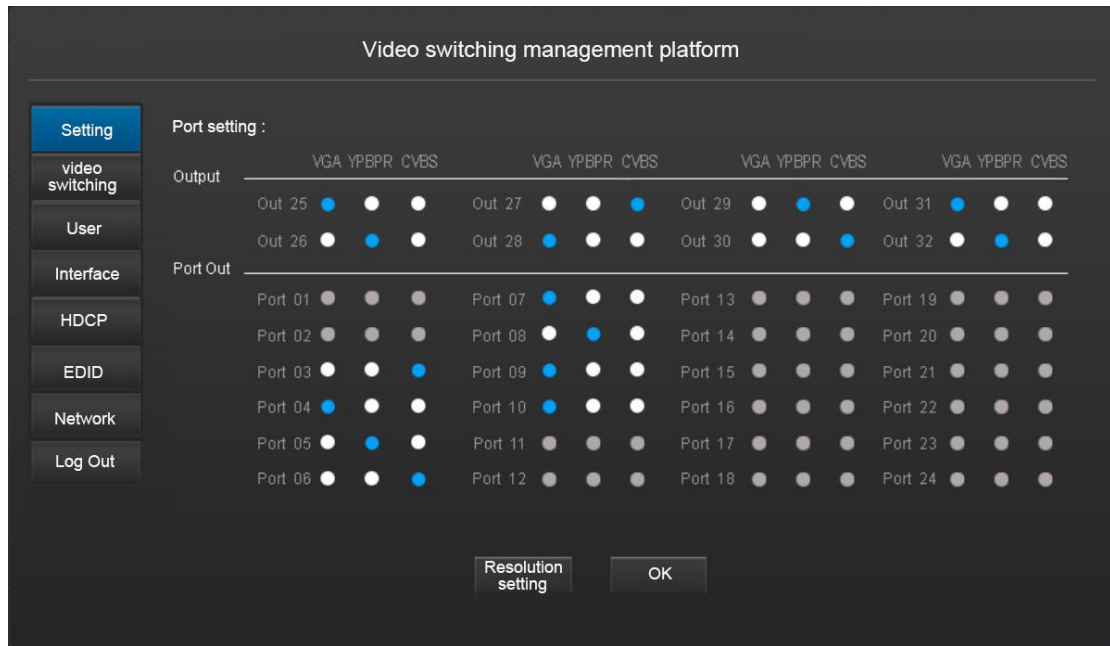
Fig 8.3.4Port setting interface

Video switching operation

In GUI main interface, click on "video switch" button, pop-up switch interface, as shown in figure 8.3.5, first select the input port, for example select input "3", and then select the output port, such as select output "1" and "5", and click "OK" button, then the input end "3" signal is switched to the output terminal "1" and "5" , if you want one input switch to all output ports, first select the input port and click on the "select" button, and click the "ALL" can be determined.

Fig 8.3.5 Switching interface

Scene save and call

Click on "video switch" option,pop-up switch interface, as shown in figure 8.3.6.Save

scene in "Scene" , for example, select the number "5", click on the save, the current

configuration state of the matrix is saved to scene "5".

When calling scene in "Scene" , select the scene to call, and then click "call" can be.
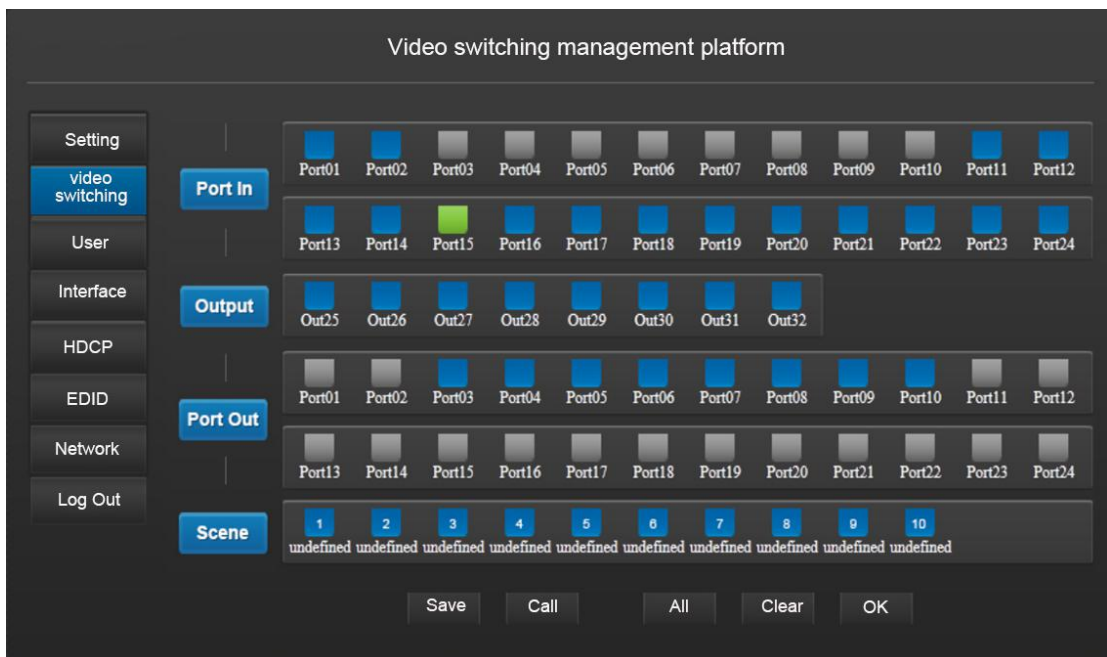

Fig 8.3.6 Scene save&call

Login password change and front panel lock function

Click "user" option, pop-up as shown in figure 8.3.7 interface, you can change the user

login password or lock or unlock the front panel, lock the front panel can not operable,

after the completion click "Save" can be ok.
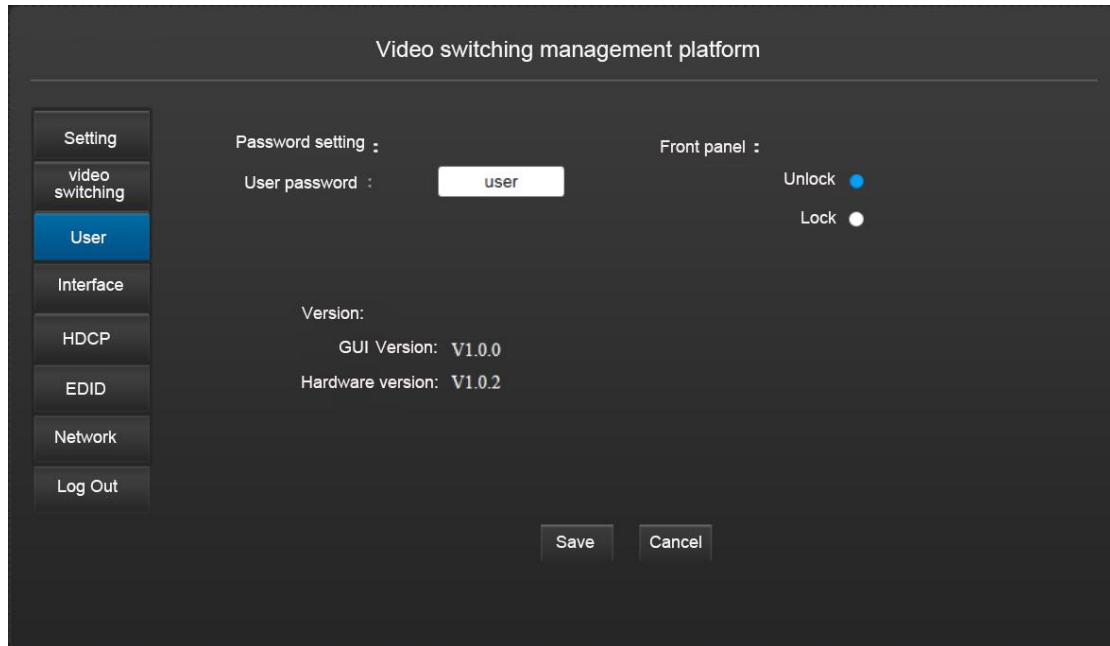
Fig8.3.7 User interface

Input / output port name change

Click the "interface" option, pop-up as shown in figure 8.3.8 interface, double-click the name you want to change of the input or output port, enter the name you want to change, and then click "save".
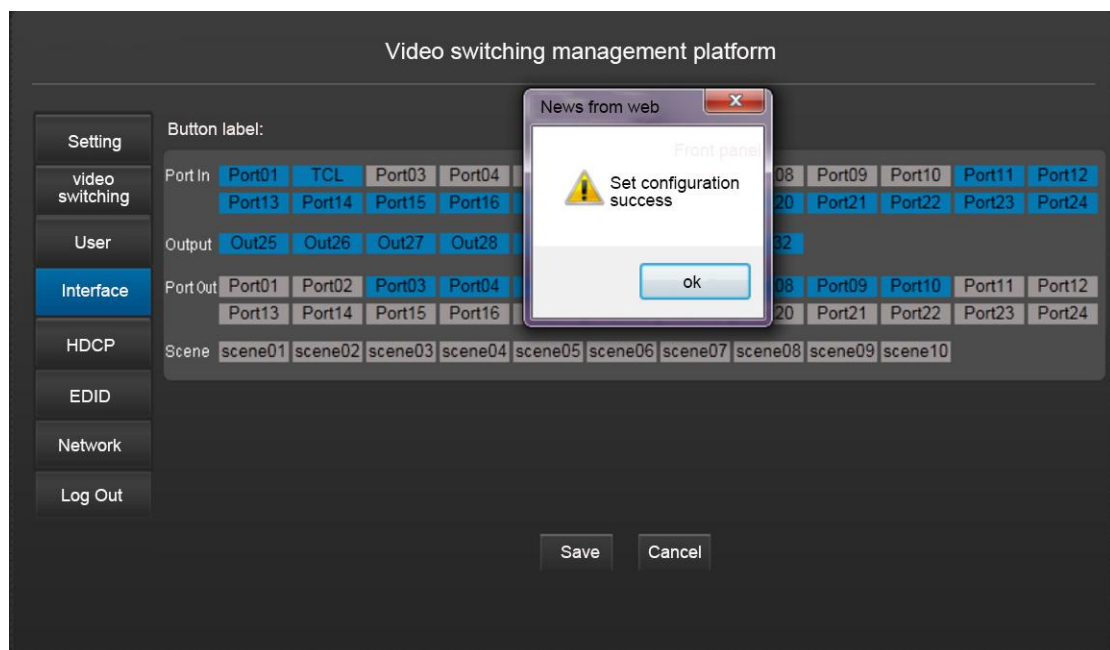

Fig 8.3.8 Change port name interface

HDCP compatible settings

Click "HDCP" option, pop up as shown in figure 8.3.9 interface, select the open or close

the output side of the HDCP compatible function.(valid to ADM-HSDA-OUT、
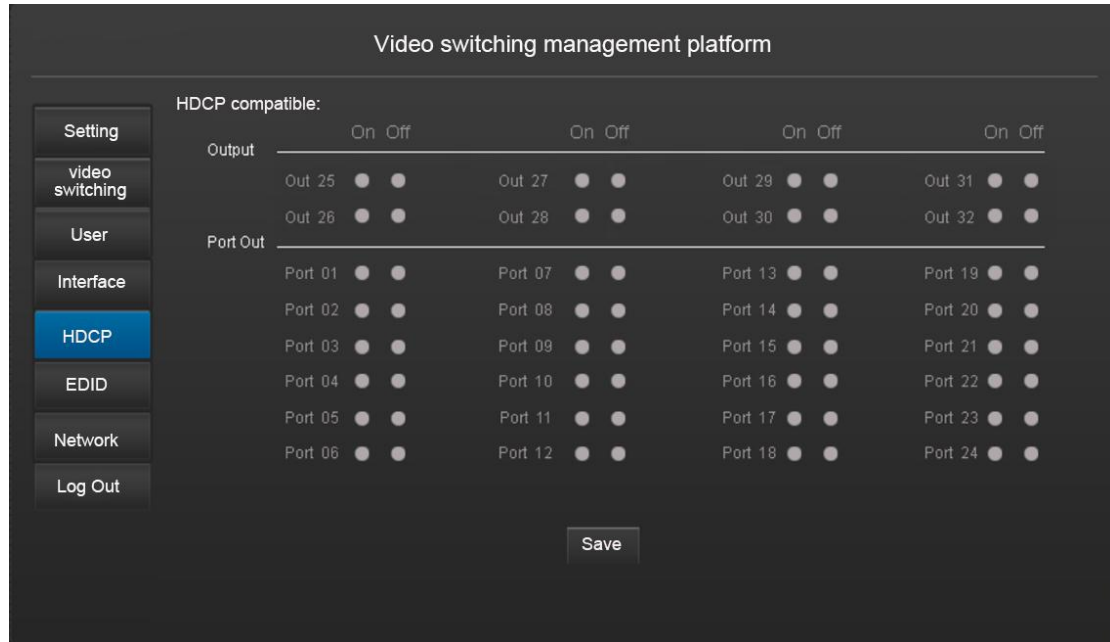
ADM-HDBT-OUT、ADM-HDMI-OUT card)

Fig 8.3.9 HDCP compatible setting interface

EDID learning function

Click "EDID" option, pop up as shown in figure 8.3.10 interface, can choose 1 to 1 EDID

learning or all input side of the single output EDID learning. For example, the choice of

input "1", output "25", and then click "GO" button, pop-up "settings configuration success"

dialog box that learning EDID success (valid to ADM-HSDA-OUT, ADM-HDMI-OUT card).
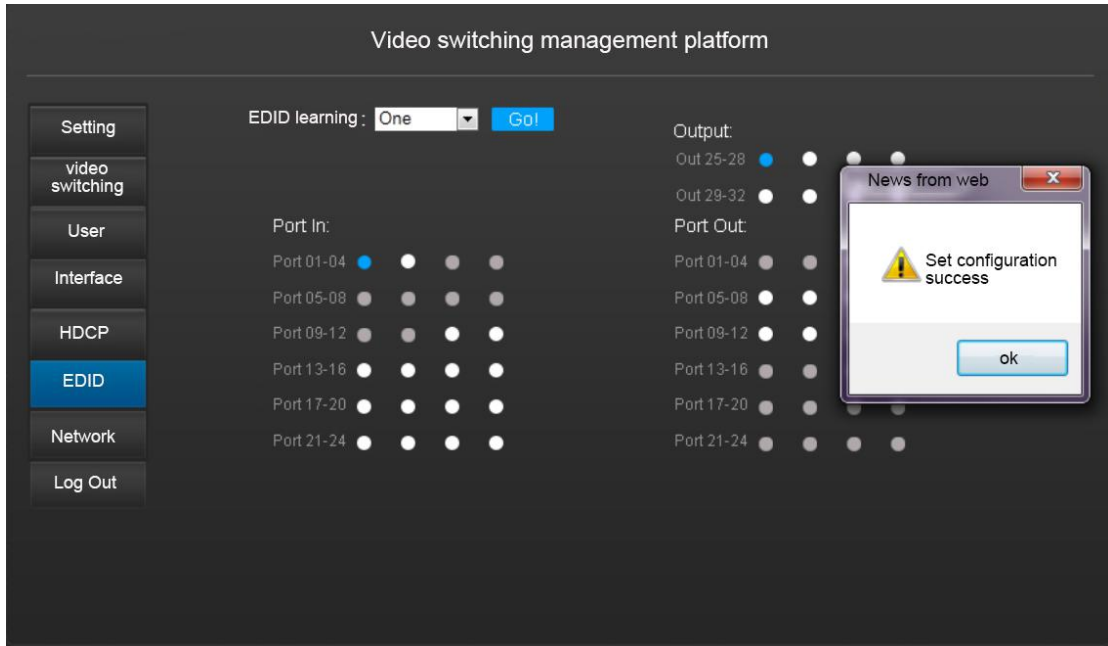
Fig 8.3.10 EDID learning interface

Change matrix IP

Click the "network" option, pop up as shown in figure 8.3.11 interface, select "DHCP" or "Static IP" option, and then enter the changed IP address, click "save". ("DHCP" is LAN control mode, the use of LAN can control a number of matrix, figure 8.3.12 is LAN control diagram)
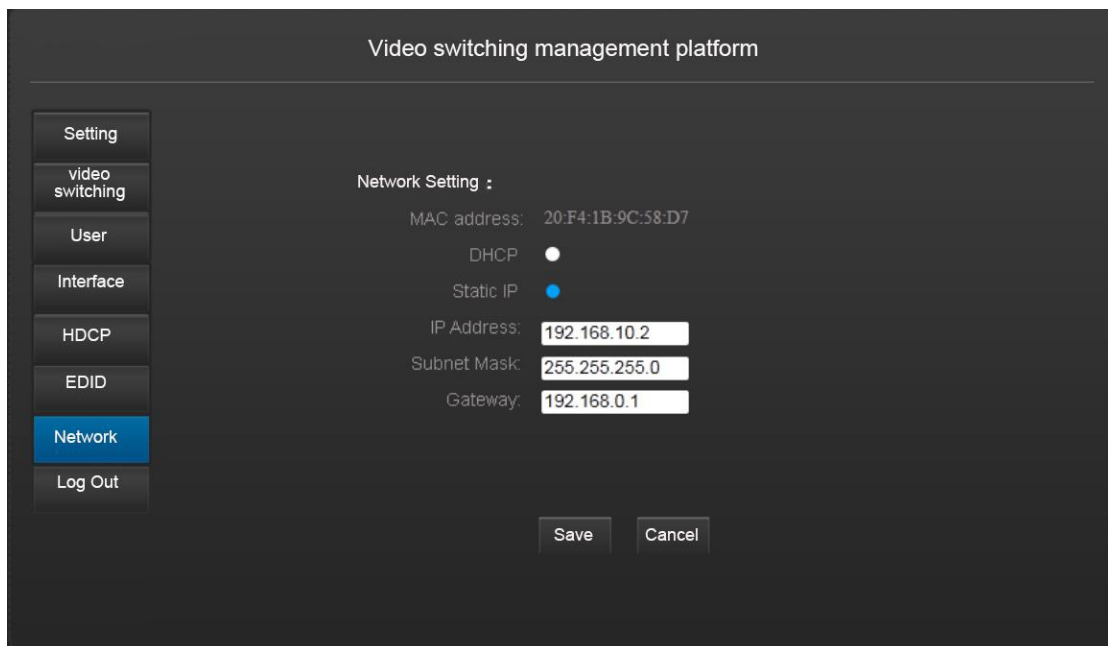

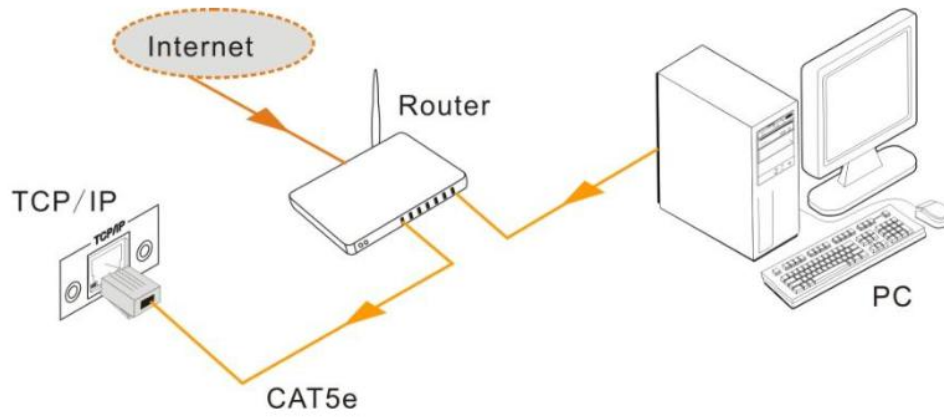Fig 8.3.11 Matrix IP address change interface

Fig 8.3.12 LAN control diagram

9.USB firmware upgrade

When firmware update, repair or function change, support for program updates, provides front panel USB port upgrade, upgrading the system program through the front panel "firmware" port, the latest upgrade program can contact our company technical and sales personnel.

The upgrade steps are as follows:

1. Download the upgrade software to your computer;

2. Connect the front panel "FIRMWARE" interface to the computer's USB interface with Micro USB Micro line;

3.Run the upgraded software, double click the software icon, as shown below:

Fig 9.1 Upgrade software

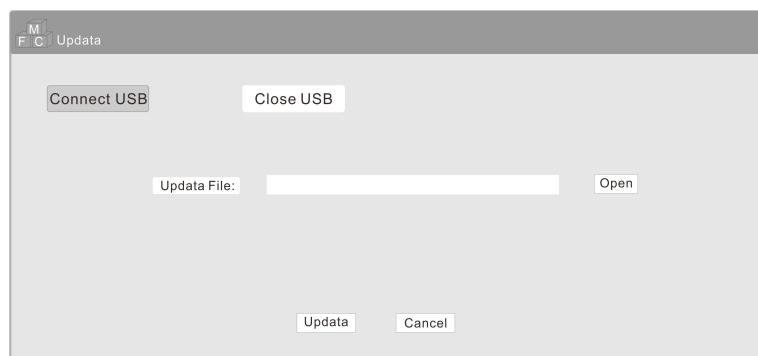4 Open the upgrade software to enter the following interface;

Fig 9.2 Upgrade software interface

➢ Click "Connect USB" connect computer to the host;

➢ Click "Open", choose to download the upgrade file;

➢ Click "Updata", the system began to upgrade.

After the completion of the upgrade, pop-up "Updata success " dialog box, the program upgrade successfully.

Note: if you upgrade to half, the progress bar stops, at this point, the instrument must be power down after the restart, and then USB upgrade.

10.Common faults and maintenance

Failure phenomena	Cause analysis	Elimination method
"POWER" is not bright	Power input not in good contact	Check whether the power input is loose
Color loss or no video signal output	The signal line is not connected at both ends	Check signal lines at both ends of the interface to ensure that the connection is correct and good
	Output connection display resolution is low	Regulate resolution of input signal source or change display with high resolution
Peripheral display device image has shadow	Input and output connection wire quality is not up to standard or damage	Replace normal standard wire
	Bad connection between input and output devices	Check connection and interface
Output image interference	Input / output not well grounded	Connect input and output in correct manner.
Plug in audio and video interface has obvious static	The machine is not well grounded.	Connect the machine to a good grounding
Unable to manually switch the input signal source channel	The system is in front panel lock state	Send the serial port command "/%Unlock;" unlock the lock state
When signal switching, no corresponding image output	Input wiring loose or damaged	Use related instruments (such as a multimeter) to eliminate
	Output connection loose or damaged	Use related instruments (such as a multimeter) to eliminate

	Signal source with HDCP, while the system is set to HDCP is not compatible	Send instruction HDCP ON to open HDCP protocol
Control terminal can not control the machine	Control terminal communication port damage	Carefully check whether the communication serial port loose or damaged
	Communication protocol is not set	Check as follows: baud rate: 9600 data bits: 8 stop bit: 1: no parity bit
Panel buttons, communication ports, remote control can not control	Internal damage to the host	Send to professional maintenance point

11.After-sales service

(1) If appears abnormal situation when using the product, in warranty period and in normal use, due to failure caused by the quality of the product itself and not being overhaul, the company will be responsible for giving free maintenance.

(2) We provide a three-year warranty service, warranty start date: product ex factory date;if the above date not proved, will according to production date in the SN Company Code .

(3) Any of the following circumstances, not implementation of the warranty service, a reasonable charge of maintenance accessories:

The damage caused by use, storage and maintenance of consumer;

Appearance and component man-made damage;

The damage caused to the configuration or modification of the product without the authorization of our company;

The damage caused by the force majeure.

(4)Any of the following circumstances, the company has the right to refuse to provide maintenance services or service charges;

No warranty certificate and valid invoice, the product has no SN code;

The fragile label damage (except the company authorized), product label content altered or obscured and illegible;

The damage caused by the installation and maintenance of the company is not authorized by the company;

No sales voucher or certificate is not accord with product model;

Not belong to our company.

(5)You can directly contact our service department by letter or call, please inform the following contents:

The type and name of the product you use;

Failure phenomenon (as detailed as possible);

The before and later process of failure.

Contact Us

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