VitBest®

MM4-8C / MM4-16C

Multi Format Matrix Switcher

User Manual

User manual

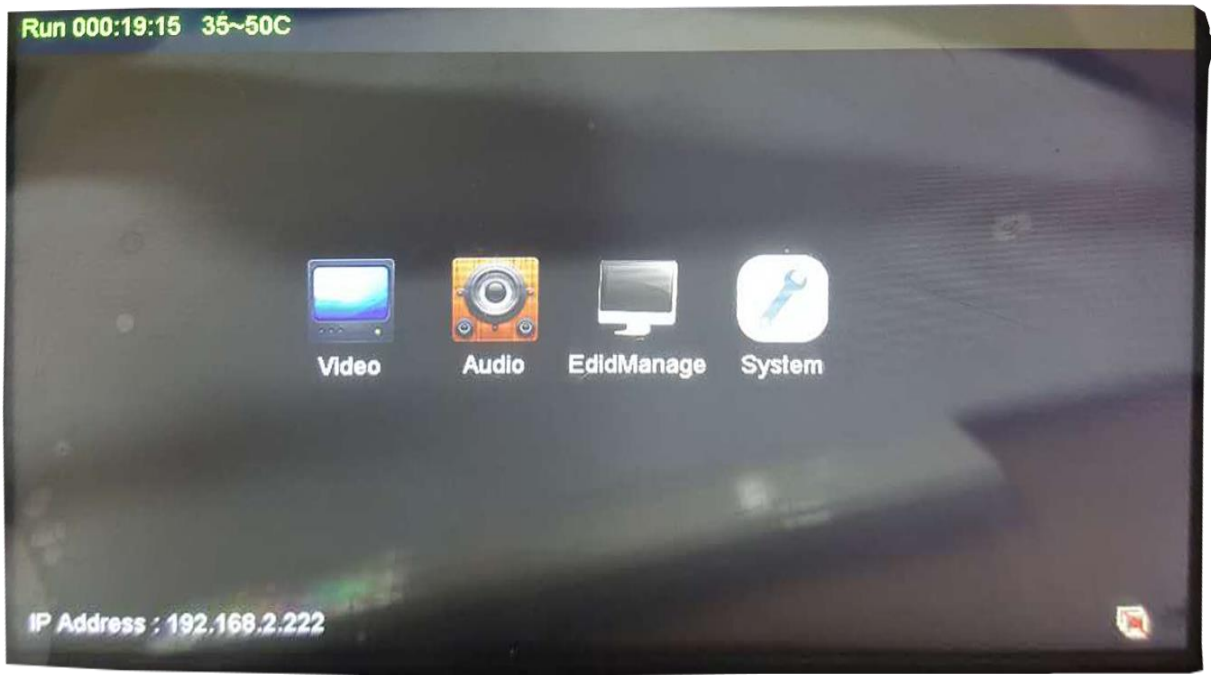
operation guide

1、power source

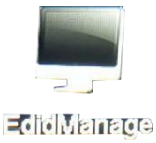
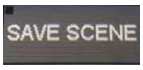
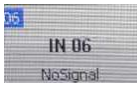
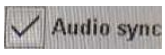
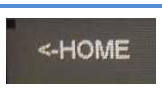
MM4-8C/MM4-16C signal management platform using 100-250v ac voltage power s upply. Power on when push the button<▌>, Power off when push the button<○>.

2、capacitive touch screen

MM4-8C/MM4-16C signal management platform uses a 5” capacitive touch screen,w hich have a resolution of 800x480,the layout of system is shown in figure.



Each particular function button as shown in form

button	function
	Video switch select
	Audio switch select
	EDIE management
	System Settings
	All switch to select
	Close the output channel selection
	Save selection key scene
	Call select key scenes
	Output channel
	Input channel
	Audio and video synchronization switching
	Main interface

3、Signal switching

MM4-8C/MM4-16C signal management platform use hot plug input/output card slots; Slots 13 ~ 16 are fixed to output, slots 1 ~ 12 are configurable for input or output.

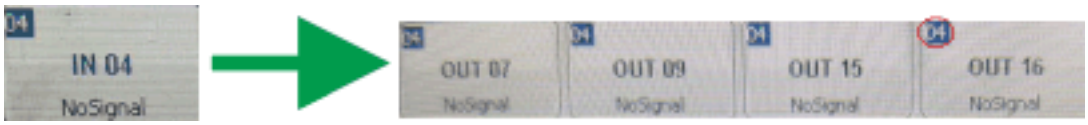
Switch a input to all output channel

Simply choose the Video input and touch the screen interface:touch <Input channel number> + <TO All>button,input channel number will be displayed in the top left corner angle of the output channel.

for example , <IN6> + <TO All> key，Switch successful, at the upper left of the output channel Angle IN4 will be shown.

Switch any one input to any or all output channels

Select a input andswitchto any output channel. For example , IN4 + OUT7 + OUT9 + OUT15 + OUT16. Switch successful, IN4 will be shownat the upper left of the output channel angle.



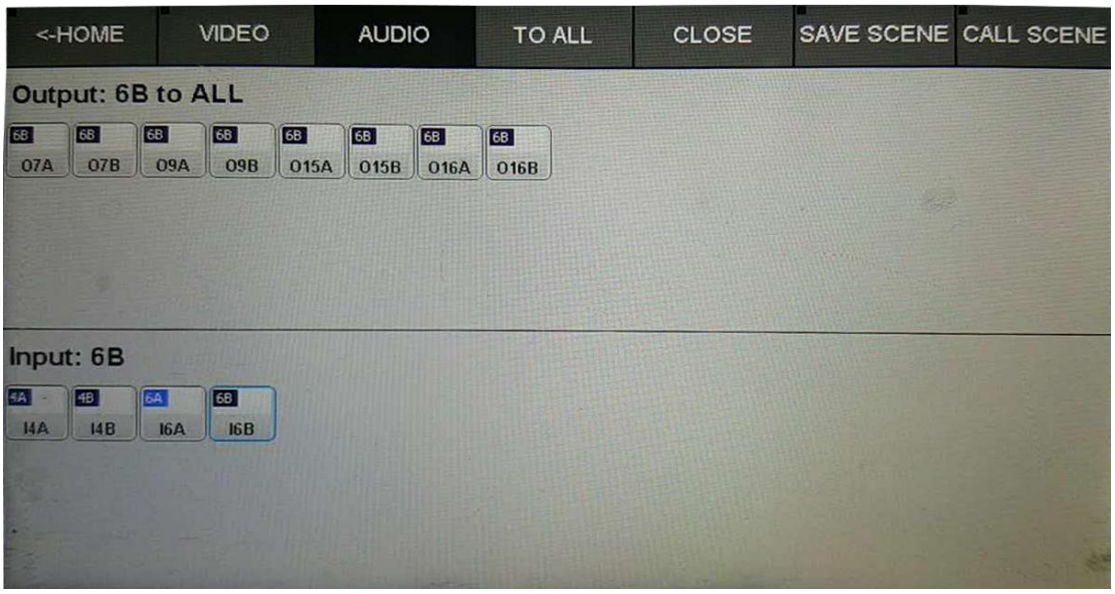
4、Close the output channel

MM4-8C/MM4-16C signal management platform providesa function of closing a channel output or multiplex channels output, output channel which was closed will have no signal output. If users need to closean output channel, just click the close buttonon touch screen, choose the corresponding channel.When close channel successfully, the output interface on touch screen will become gray, the upper left corner input channel number is 00. Such as the figure below.

5、Check the output channel state

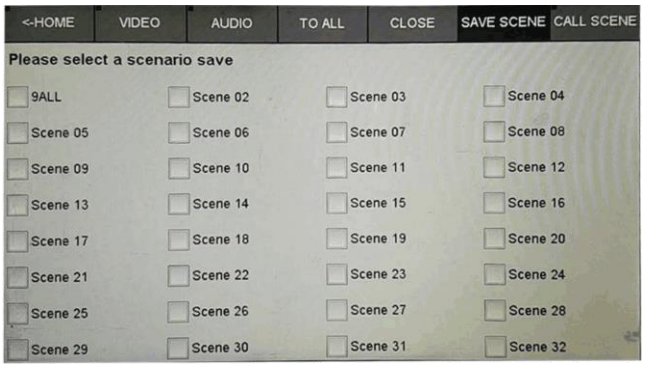
MM4-8C/MM4-16C signal management platform provides a function of checking all channelsstatus.Can be View the output channel video switchingstatus, Audio switching status, EDID input channel switchingstatus and output channel identification EDID status, display equipmentin Videointerface and so on.

For example, audio switching state.

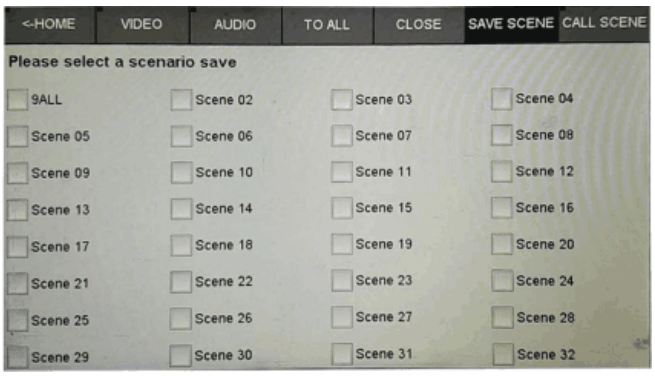


6、Scene save and call

Save the current status of input and output channels are also called save the current scene, MM4-8C/MM4-16C signal management platform supports up to 32 scenes. If the current status of corresponding video input and output is to be preserved. The capacitive touch in Video Swicher to <Save scene>+<Storage unit number> . For example, to save input and output corresponding state 02 unit, <SAVE SCENE> + <Scene 02>.



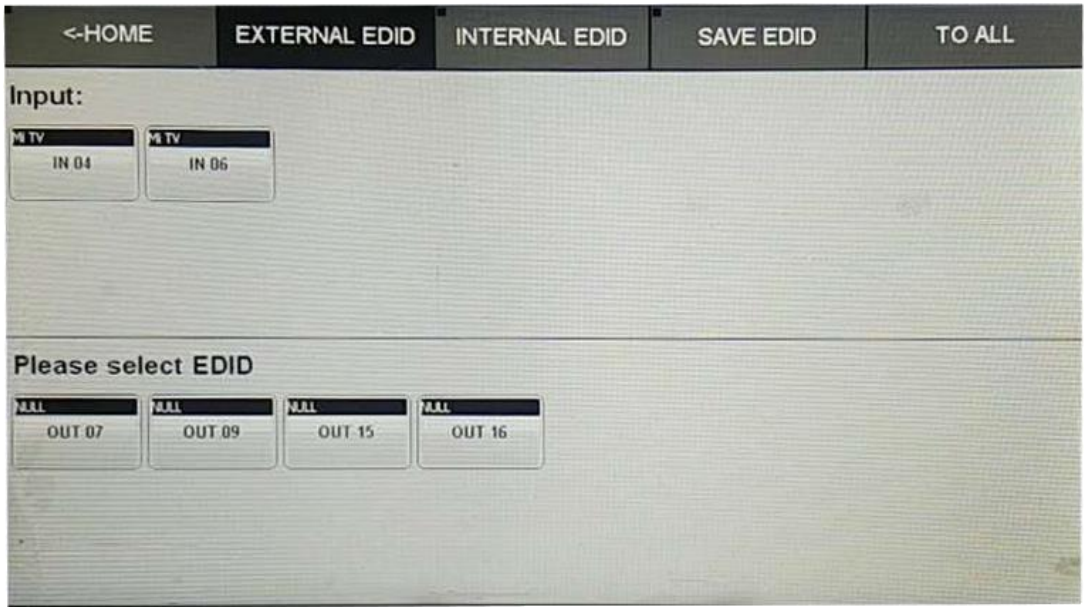
To invoke the saved scene, <CALL SCENE> + < Storage unit number>, For example, to invoke the saved in 02 storage unit



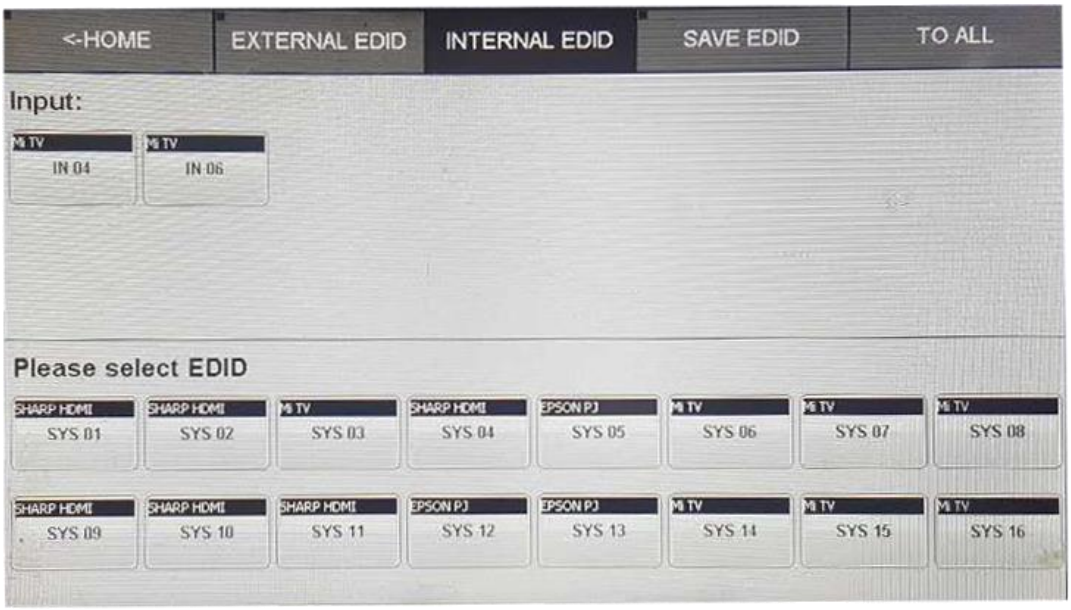
7、EDID management

MM4-8C/MM4-16C signal management platform to provide EDID read, reset, storage, and other functions, the previous generation of signal management platform in the update

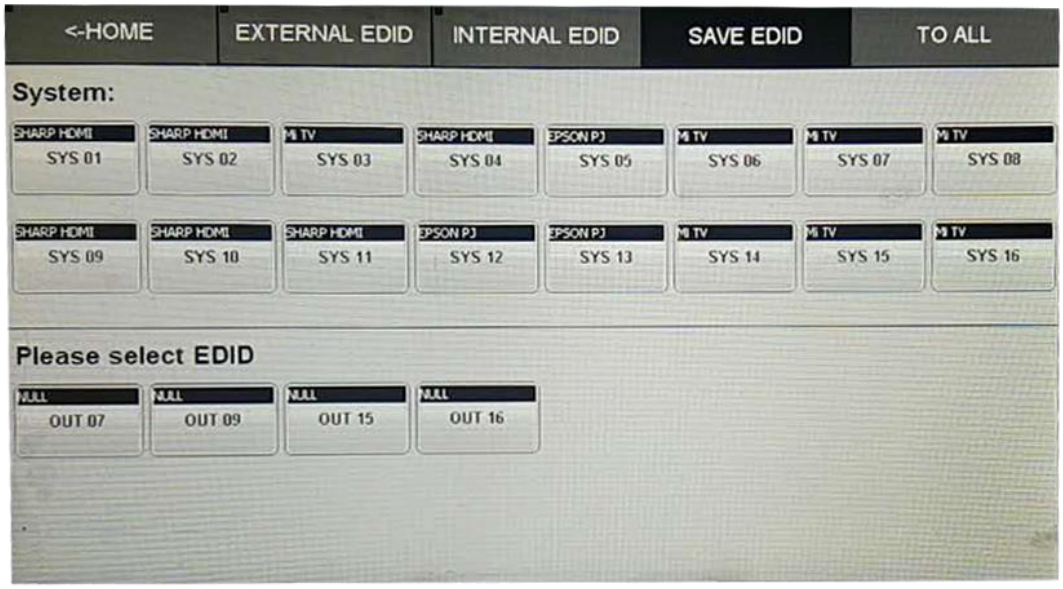
EDID would be more convenient and quick operation.
Each output channel will automatically identify the EDID of display devices, and will feedback the EDID information corresponding to the touch screen output channel. Update EDID to input port, also displays the same input EDID information, Updates to the input port from output EDID. Select EDID switcher, click on the output channel and click need update EDID input channel. Input channel EDID information same as the output channel identification EDID. For example, <OUT1> + <IN1>.Output channel 1 EDID information update to the input channel 1, 2, 3. For example, <OUT1> + <IN1> + <IN2> + <IN3>.



MM4-8C/MM4-16C signal EDID data management platform support store 16 group, may at any time Save the EDID data updates to the input channel.In an INTERNAL EDID state, select save EDID, then click on the corresponding input channel

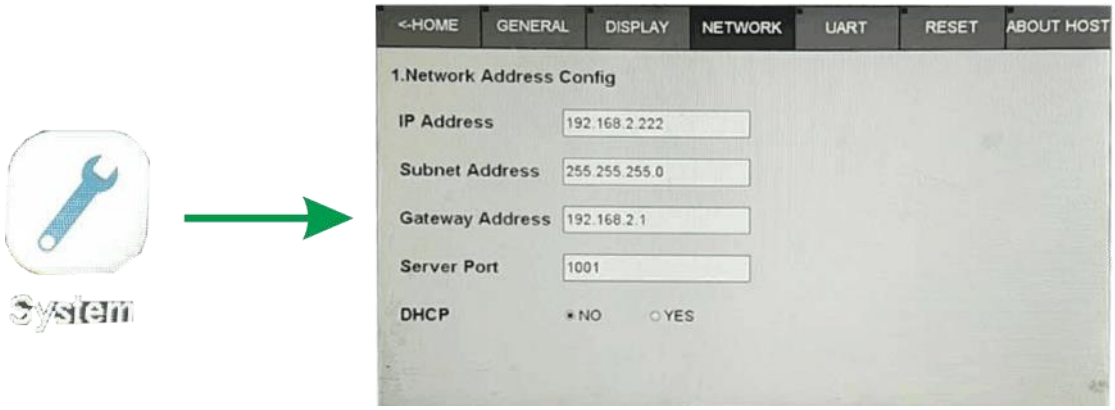


If you need to one output channel EDID information stored. In the SAVE EDID state, select output to click to save the location of the EDID.



8、Internet network communication Settings

On entering the system Settings menu, select NETWORK menu options. Into the next sub menu view or change the IP address, protocol, port, setting as shown in the figure.

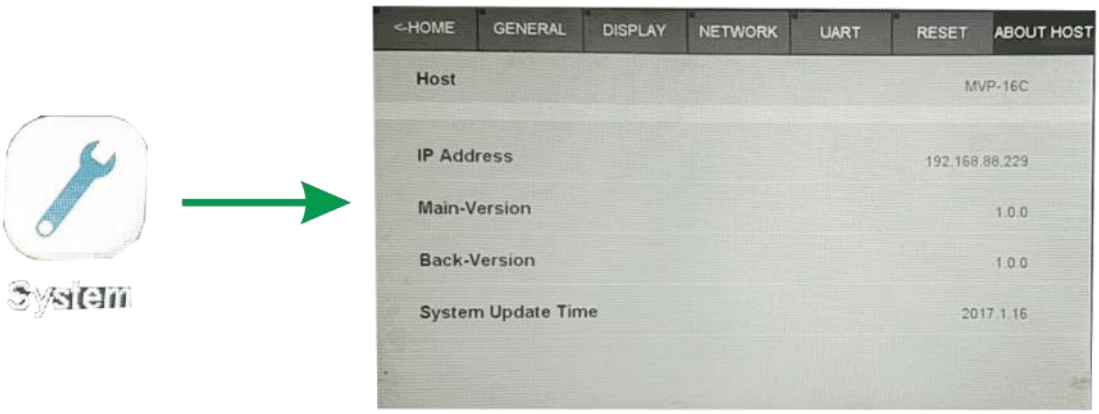


9、RS232 setting

RS232 communication parameters including Baud Rate, Data Bits, Stop bit, Parity.If you want to change these parameters can click on the System into the System Settings menu,elect UART into RS232 Set the Visual Design.

10、Version information query

In the system Settings in the options ABOUT HOST to enter submenu interface can see the Main control board (Main - Version), and the exchange the Back (Back - Version), and the Version information etc. for example,



11、 **system reset**

MM4-8C/MM4-16C signal management platform support system restore factory Settings, and setup system. Elect RESET interface, click on ENTER. for example,

12、RS232 and WAL control command

When MM4-8C/MM4-16C signal management platform and the external control devices through RS232 connection, and set can be used after the external control Settings to control the

operation. RS232 default setting of Baud 115200bps, 8 data bits, 1 stop bit, no parity.

Number	Action	Basic ASCII String	Variables	Example Settings	Example String	Example Response
1	Video switch input into multiple or single channel output	>Catob,c<CR>	a = input(1 ~ matrix max) b c = output(1 ~ matrix max or ALL)	Switch input 1 to output 2,3	>C1to2,3<CR>	<C1to2,3<CR>
2	Video switch corresponding relations between	>CRa:b,c:d<CR>	a c = output(1 ~ matrix max) b d = input(1 ~ matrix max)	Switch input 1 to output 3 Switch input 2 to output 4	>CR1:3,2:4<CR>	<CR1:3,2:4<CR>
3	Video select input(starting up Off by default)	>CSWI:a<CR>	a = input(1 ~ matrix max)	Select input 2	>CSWI:2<CR>	<CSWI:2<CR>
4	Video switch to the output	>CSWO:a<CR>	a = output(1 ~ matrix max)	Select input the switch to the output 2,3	>CSWO:2,3<CR>	<CSWO:2,3<CR>

5	Video query corresponding relations between	#CR<CR>	NULL	Query corresponding relations between	#CR<CR>	<CR1:3,2:4<CR>
6	Audio switch input into multiple or single channel output	>Tatob,c<CR>	a = input(1 ~ matrix max) + A/B b c = output(1 ~ matrix max or ALL) + A/B Note:A=Internal audio B=External audio	IN1 video internal embed audio switch OUT2 internal or external	>T1Ato2A,2B<CR>	<T1Ato2A,2B<CR>
7	Audio switch corresponding relations between	>TRa:b,c:d<CR>	a c = output(1 ~ matrix max) + A/B b d = input(1 ~ matrix max or ALL) + A/B Note:A=Internal audio B=External audio	Switch input 1A to output 2A Switch input 1B to output 2B	>TR1A:2A,1B:2B<CR>	<TR1A:2A,1B:2B<CR>
8	Audio select input(starting up Off by default)	>TSWI:a<CR>	a = input(1 ~ matrix max) + A/B Note:A=Internal audio B=External audio	Select input 2A	>TSWI:2A<CR>	<TSWI:2<CR>
9	Audio switch to the output	>TSWO:a<CR>	a = output(1 ~ matrix max) + A/B Note:A=Internal audio B=External audio	Select input the switch to the	>TSWO:3A,3B<CR>	<TSWO:2,3<CR>

				output 3A,3B		
10	Audio query corresponding relations between	#TR<CR>	NULL	Query corresponding relations between	#TR<CR>	<TR1A:3A,2A:4B<CR>
11	Save the scene	>Sa<CR>	a = Scene location （1~32max）	Save the current state to 10	>S10<CR>	<CR1:3,2:4,...<CR>
12	Call scenario switch	>Ra<CR>	a = Scene location （1~32max）	Call scenario 10	>R10<CR>	<CR1:3,2:4,...<CR>
13	Switch the audio and video synchronization	>SYNC:a<CR>	a = 0:no synchronous 1:synchronous	Switch synchronous	>SYNC:1<CR>	<SYNC:1<CR>
14	Query the audio and video synchronization	#SYNC<CR>	NULL	Query synchronous	#SYNC<CR>	<SYNC:1<CR>

15	Set the scene name	>SNAMEa:b<CR>	a = Scene location （1~32max） b = scene name(15English char)	Set the scene10 name "Meeting"	>SNAME10:Meeting<CR>	<SNAME10:Meeting<CR>
16	Query the scene name	#SNAMEa<CR>	a = Scene location （1~32max）	Query the scene10 name	#SNAME10<CR>	<SNAME10:Meeting<CR>
17	Set the scene use	>SUSEa:b<CR>	a = Scene location （1~32max） b = scene use(0=no 1=yes)	Set the scene10 use	>SUSE10:1<CR>	<SUSE10:1<CR>
18	Query the scene use	#SUSEa<CR>	a = Scene location （1~32max）	Query the scene10 use	#SUSE10<CR>	<SUSE10:1<CR>
19	Uart switch	>CUARTatob,c<CR>	a = RX(1 ~ matrix max) b c = TX(1 ~ matrix max or ALL)	Uart switch rx1 to tx1\2	>CUART1to1,2<CR>	<CUART1to1,2<CR>
20	Query the all uart switch state	#CRUART<CR>	NULL	Query the all uart switch state	#CRUART<CR>	<CRUART1:1,2:1,...<CR>
21	Set the IP address	>IP:a.b.c.d<CR>	a b c d = address(0~255)	set IP address 192.168.2.229	>IP:192.168.2.229<CR>	<IP:192.168.2.229<CR>
22	Set the Subnet	>SUBNET:a.b.c.d<CR>	a b c d = address(0~255)	set Subnet 255.255.255.0	>SUBNET:255.255.255.0<CR>	<SUBNET:255.255.255.0<CR>

23	Set the Gateway	>GATEWAY:a.b.c.d<CR>	a b c d = address(0~255)	set Gateway 255.255.255.0	>GATEWAY:192.168.2.1<CR>	<GATEWAY:192.168.2.1<CR>
24	Set the Socket Server port	>PORT:a<CR>	a = Server port	Set the Socket Server port 1001	>PORT:1001<CR>	<PORT:1001<CR>
25	Set Network DHCP	>DHCP:a<CR>	1= 0:no 1:yes	Set Network DHCP	>DHCP:1<CR>	<DHCP:1<CR>
26	Query the network information	#NETWORK<CR>	NULL	Query the network information	#NETWORK<CR>	<IP:192.168.2.229<CR> <SUBNET:255.255.255.0<CR> <GATEWAY:192.168.2.1<CR> <PORT:1001<CR>
27	Set the serial port	>UART:a,b,c,d<CR>	a = Baud Rate(115200 38400 19200 9600) b = Data bits(8 9) c = Stop bits(1 1.5 2) d = Parity bits(None Odd Even)	Set the serial 9600,8,1,None	>UART:9600,8,1,None<CR>	<UART:9600,8,1,None<CR>
28	Query the serial port	#UART<CR>	NULL	Query the serial port	#UART<CR>	<UART:9600,8,1,None<CR>

29	Command can make	>CMDEN:a<CR>	a = 0:no make 1:make	Set command can make	>CMDEN:1<CR>	<CMDEN:1<CR>
30	Query Command can make	#CMDEN<CR>	NULL	Query command can make	#CMDEN<CR>	<CMDEN:1<CR>
31	Command notice sound	>CSOUND:a<CR>	a = 0:no sound 1:sound	Set command notice sound	>CSOUND:1<CR>	<CSOUND:1<CR>
32	Query command notice sound	#CSOUND<CR>	NULL	Query command notice sound	#CSOUND<CR>	<CSOUND:1<CR>
33	switch EDID output to input	>EDIDatob<CR>	a = output(1 ~ matrix max) b = input(1 ~ matrix max or ALL)	Switch output 1 to input 2	>EDID1to2<CR>	<EDID1to2<CR>
34	switch EDID system to input	>SYSEatob<CR>	a = system(1 ~ 16) b = input(1 ~ matrix max or ALL)	Switch system 1 to input 2	>SYSE1to2<CR>	<SYSE1to2<CR>
35	switch EDID output to system	>SEDIDatob<CR>	a = output(1 ~ matrix max) b = system(1 ~ 16)	Switch output 1 to system 2	>SEDID1to2<CR>	<SEDID1to2<CR>
36	Set the HDMI output format	>HDMODE:a,b<CR>	a = output(1 ~ matrix max) b = 0:DVI 1:HDMI	Output:2 set HDMI format	>HDMODE:2,1<CR>	<HDMODE:2,1<CR>

37	Set card the hdcp switch	>HDCP:a,b<CR>	a = port(1 ~ matrix max) b = 0:OFF 1:ON	Set port:2 the hdcp off	>HDCP:2,0<CR>	<HDCP:2,0<CR>
38	Daughter card power management	>CPOWER:a,b<CR>	a = port(1 ~ matrix max) b = 0:OFF 1:ON	Close port 2 power supply	>CPOWER:2,0<CR>	<CPOWER:2,0<CR>
39	The query card power state	#CPOWER:a<CR>	a = port(1 ~ matrix max)	Query port 2 power state	#CPOWER:2<CR>	<CPOWER:2,0<CR>
40	Set management user name and password	>MUNP:a,b<CR>	a = name(15 the English characters) b = password(15 the English characters)	ser user:Main password:123456	>MUNP:Main,123456<CR>	<MUNP:Main,123456<CR>
41	Query management user name and password	#MUNP<CR>	NULL	Query management user name and password	#MUNP<CR>	<MUNP:Main,123456<CR>
42	Send commands to control card	>COMa<CR>	a = control card command	send "-TEST" string	>COM-TEST<CR>	NULL(you don't online returns the ERROR)
43	Query whether central online	#COM<CR>	NULL	Query whether central online	#COM<CR>	<COM:1<CR>

44	To TCP Socket server send data	>SEND-SS:a:b,c<CR>	a = IP b = Server port c = data	To 192.168.88.100：1001 send “TEST”	>SEND-SS:192.168.88.100:1001,TEST<CR>	>SEND-SS:4<CR>

45	Query status information Returned in JSON format	#JSON:a,b<CR>	a = ("video","scene","system","weburl","cont")
			b = mark(Status update version，0 = Request all data)
				Query the state of the video	>JSON:video,0<CR>	{
						"system":
						{
						"run":
						"Run 000:01:15",
						"temp":
						"20~35",
						"ip":
						"192.168.88.151:8020",
						"wcolor":
						"#66ff00",
						"mark": 55,
						"ahpd": 1,
						"uhpd": 1,
						"lang": 1,
						"update":
						true
						},
						.....
						}

46	Set the system language	>LANG:a<CR>	a = 0：English 1：Chinese	Set the system language is Chinese	>LANG:1<CR>	<LANG:1<CR>
47	Query system language	#LANG<CR>	NULL	Query system language	#LANG<CR>	<LANG:1<CR>
48	Restart the system	>SOF-RESTART<CR>	NULL	Restart the system	>SOF-RESTART<CR>	<SOF-RESTART<CR>
49	Restore the factory Settings	>SYS-RESET<CR>	NULL	Restore the factory Settings	>SYS-RESET<CR>	<SYS-RESET<CR>
50	Query all the daughter card types	#RCID<CR>	NULL(return data reference link)	Query all the daughter card types	#RCID<CR>	<RCID:1:I1,2:N/A...<CR>
51	Query main software version	#SVER<CR>	NULL	Query main software version	#SVER<CR>	<SVER:1.0.0<CR>
52	Query hardware version	#HVER<CR>	NULL	Query hardware version	#HVER<CR>	<HVER:1.0.0<CR>

53	Query back software version	#BVER<CR>	NULL	Query back software version	#BVER<CR>	<BVER:1.0.0<CR>
54	Query matrix type	#MO<CR>	NULL	Query matrix type	#MO<CR>	<MVP-16C<CR>
55	Query instruction set head	#CMD<CR>	NULL	Query instruction set head	#CMD<CR>	...

Update time:2017-1-17

> - Command, # - Query, < - Response

<CR> = 0x0D Hex / 13 Decimal

Note: The default communication settings are 115200 8N1 None. IP address:192.168.88.229 Socket Server port:1001

13、Web management

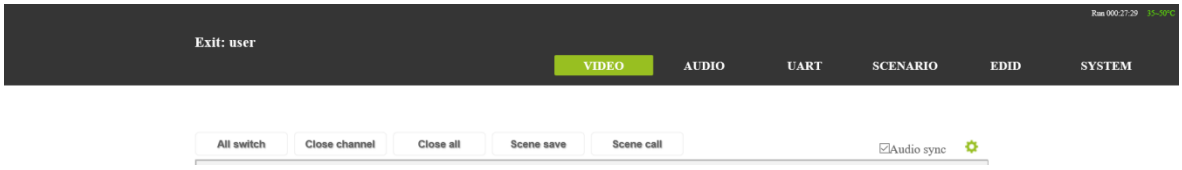
MM4-8C/MM4-16C signal management platform support Ethernet web management, in the browser enter the IP address of the MM4-8C/MM4-16C signal management platform, user name and password login to enter the web management interface. For example,

NOTE:

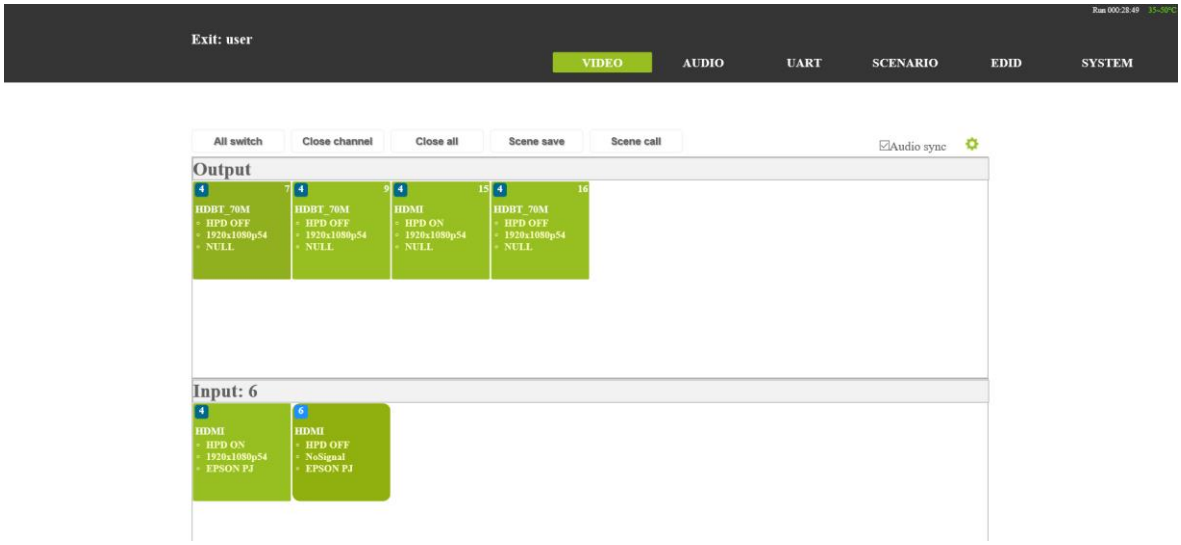
When LAN ports connection if the direct connect. Need to set equipment of IP network segment and MM4-8C/MM4-16C in the same network segment.
The default user and password for user and 123456.
The factory default Settings segment for 192.168.88.229

WEB management option

Enter into WEB management option can choose video management, audio management, EDID management, scene calls, system Settings.



(1)、Video switch：switch input channel video signal to output channel, click on the input channel selection switch output channel or click All switch. For example, input 1 to all the output channel. Click input 1 to all switch, upper left corner of the output boards display NI4 channel, said it had four input signal switching to all outlets.



(2)、The input video signal switching to one or more Output , first clicking one input , then clicking one or more output . The upper right corner of the display corresponds to the input channel switch said success（3）、Elect Audio sync，when switching the interface audio and video synchronization switching.

(4)、Clicking , Set interface will pop up the card.

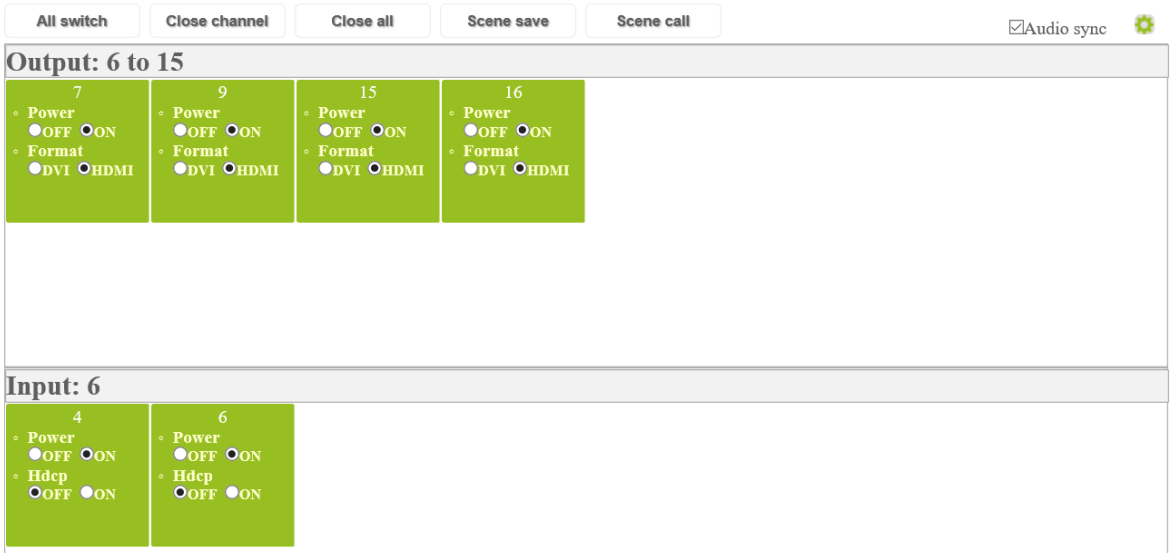
A、Can be set up the board power supply switch.

B、Elect output HDMI\DVI format.

C、HDCP on-off

(5)、Scene save and cal. Elect scene save, then click save channel, scene can be OK.

Elect Scene call, then click on the corresponding storage channel before it can be scene calls out.



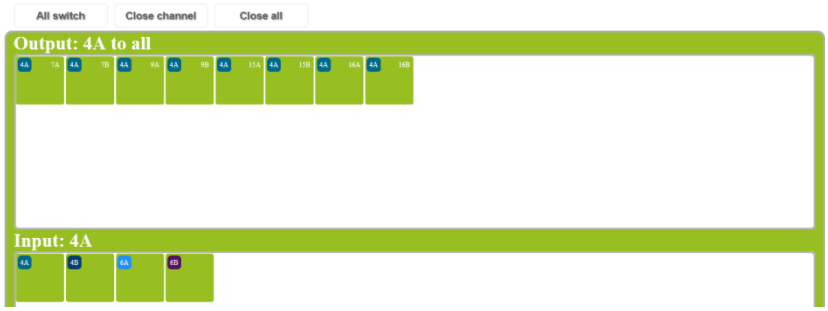
(6)、Audio switch: A for internal audio, B for external audio.

□click A, then clicking All switch, for Internal audio switch to both external and internal

□click B, then clicking All switch, for external audio switch to both external and internal

□click A, then clicking A or B, for internal audio switch to A or B.

④ click B, then clicking A or B, for internal audio switch to A or B.



EDID options

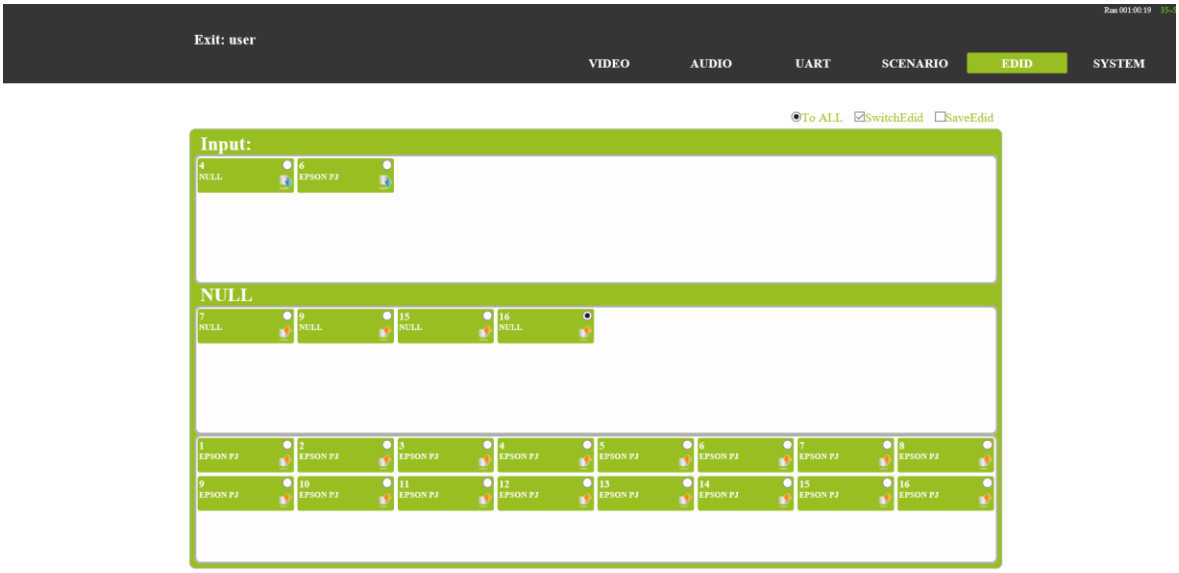
(1)、Input EDID for input port save of EDID;

(2)、Please select EDID, for output port read interface display device EDID;

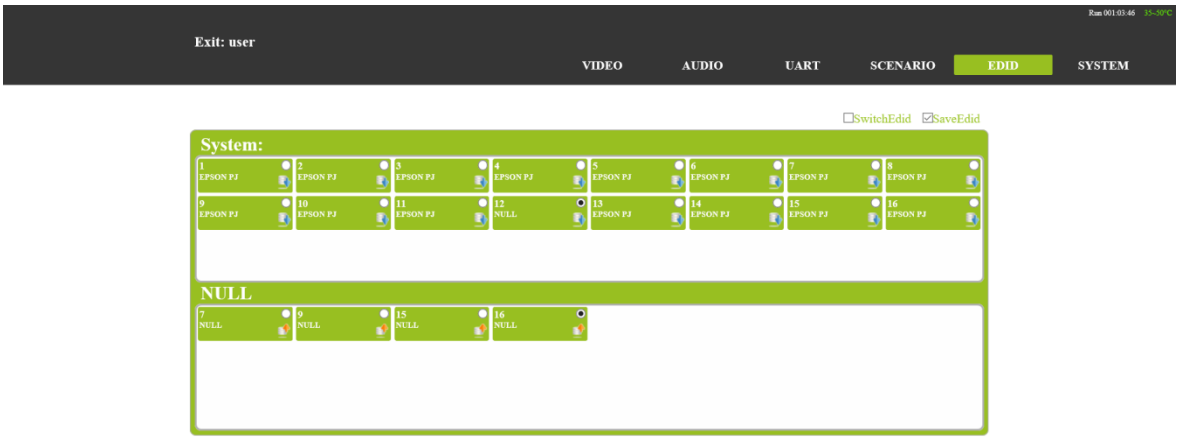
(3)、Internal EDID, for the system built-in save EDID. Most save 16 group EDID.As shown in figure,

(4)、EDID update and save

EDID update: Elect output channel or system EDID option, click input channel will can EDID switch to input boards. TO ALL will the EDID update to all input board. As shown in figure,



EDID save：Enter on Save EDID interface, elect output channel EDID, then Select system save EDID channel. Corresponding storage channel EDID display and output channel consistent said saved successfully. As shown in figure,



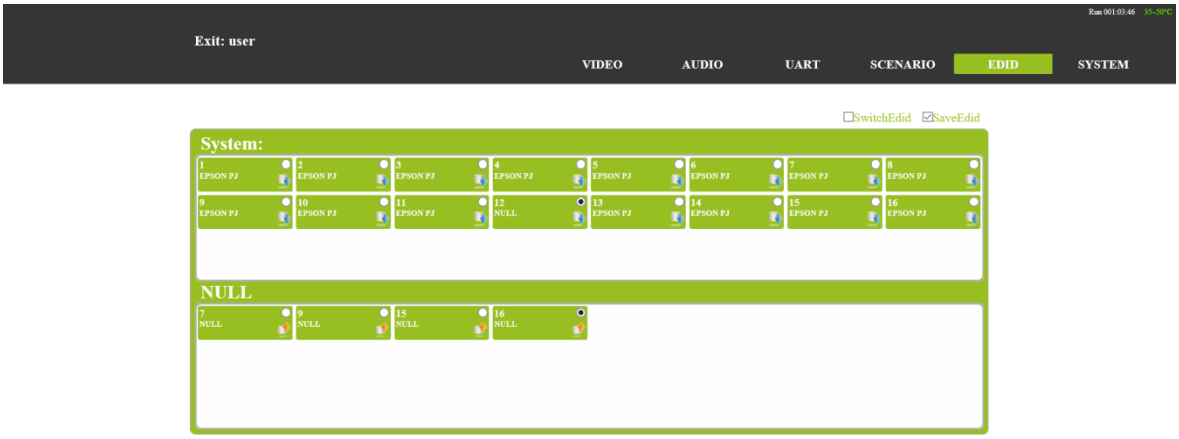
UART option

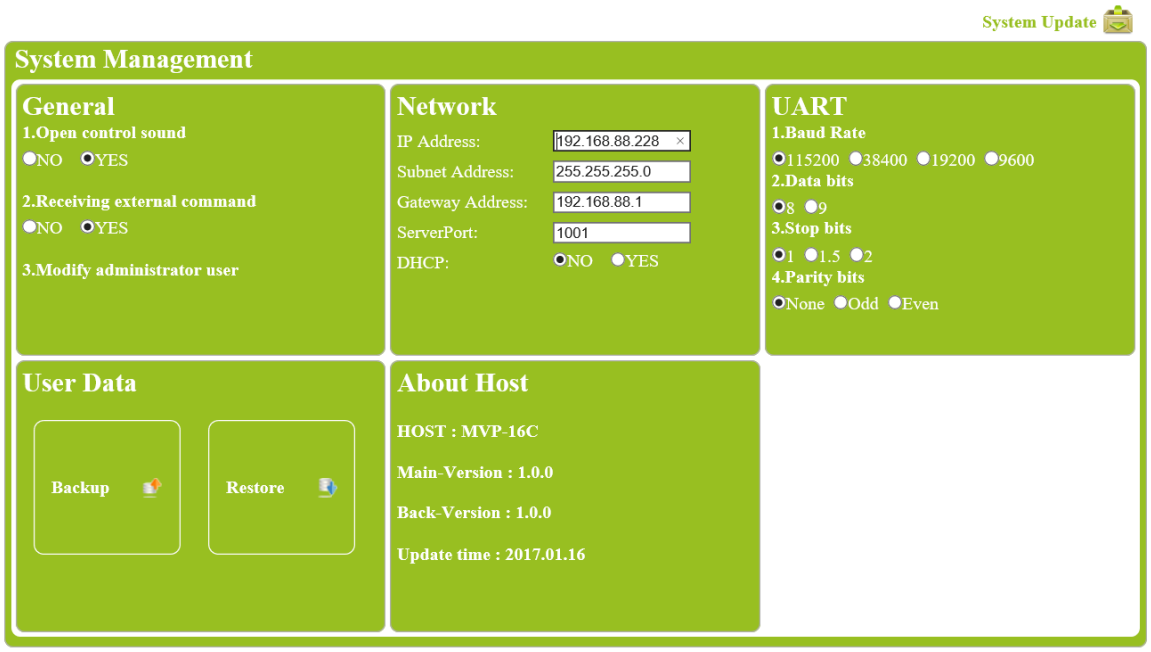
In this option through HDBT input board and HDBT output board of Serial port communication；It can realize RS232 passthrough control function；first choose RX, then choose tx contact.

(1)TX：output boards option

(2)RX：input boards option.

As shown in figure,





System option

Protect system settings: General settings, Network settings, UART settings, User data, About host, System Update.

（1）、General：Buzzer, external command, account password to modify Settings.

（2）、Network：IP address, gateway, subnet mask, port, DHCP Settings.

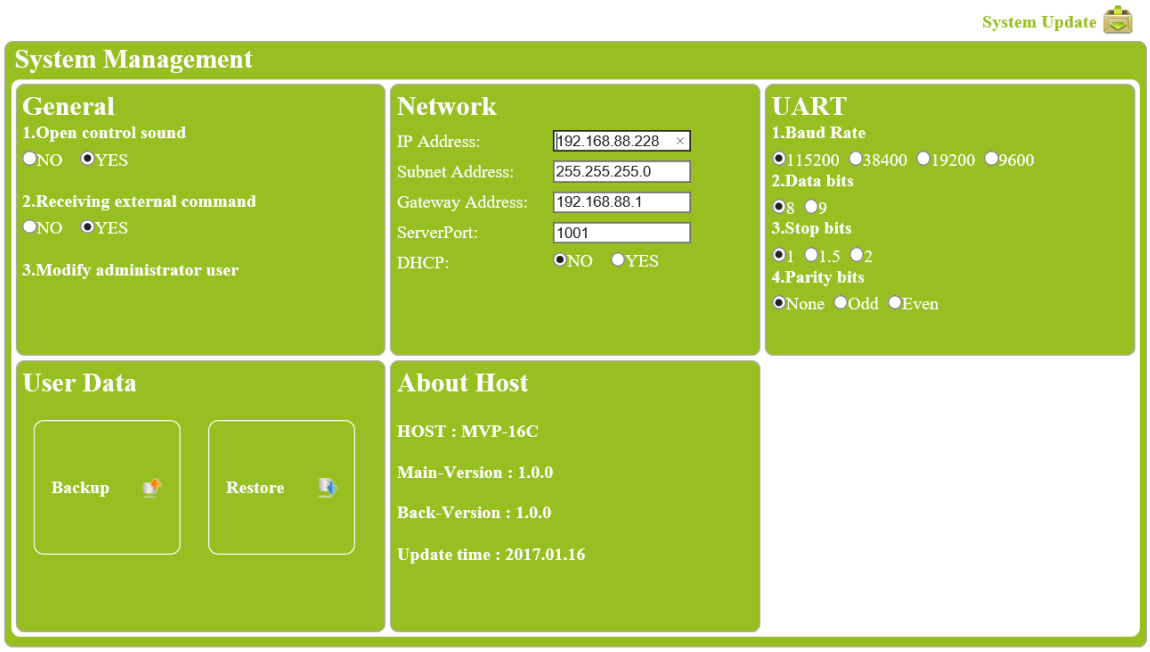
（3）、UART：Baud rate, data bits, stop bits, parity bits.

（4）、USER DATA：Data backup, data recovery.

（5）、About host：A host name, main control board version number, exchange back version number, the system updated time to see.

（6）、System Update：The main control board, exchange version, burn card program

As shown in figure,



board card guide

MM4-8C/MM4-16C signal management platform for the modular design, the user can choose different main body, according to the site environment and flexible with different input and output interface card of a MM4-8C/MM4-16C signal management platform.MM4-8C/MM4-16C signal management platform support asymmetric configuration, input and output interface card at the same time, all the input and output sockets support hot plug function, when the card is abnormal when need to be replaced, can directly replace, do not affect the normal board.

1、HDBaseT board card

The HDBaseT board card can 16C signal management platform Switch and compatibility between transmitter and receiver to realize long distance transmission of audio signals and control signals.Use single CAT 6 cable shielding will transfer to video, audio, control signal and power supply support furthest 90 m. HDBaseT board card can the separation of embedded digital audio into analog stereo, support audio embedded solution, can the independent switch. HDBaseT board card support EDID management functions and accord with standard of HDCP, and support 1080p/60Hz、1920×1200 and 4K the transmission of signals. Board support bi-directional RS232 passthrough and KVM functions, can be realized through control channel signal management platform to remote device control of the equipment.

Technical parameters

The board type	HDBT1 input	HDBT2 input	HDBT1 output	HDBT2 output

number/Signal types	A HDBaseT audio and video signals and control signals			
The connector type	RJ-45 8P line terminal			
Recommend the cable type	STP CAT6/CAT6A and above			
1080P Maximum transmission distance	≤ 60m	≤ 90m		
4KMaximum transmission distance	≤ 30m(CAT6A)	≤ 60m（CAT6A）		
Support video standard	HDTV 1080p @60Hz；VESA 1920×1200；4K 30Hz			
Support color space	RGB；YCbCr(4:2:2) YCbCr(4:4:4)			
Seamless switching	No support			
EDID management	DDC channels, EDID manager			
HDCP management	Settings HDCPauthorization or not			
Board type	HDBT1 input	HDBT2 input	HDBT1 output	HDBT2 output
Audio embedded	support			
Port hotplug	support			
Power supply	Single channel transceiver power supply DC +28V or standard PSE			
Storage temperature/humidity	-20□ ～ 85□ / 5%～40% RH			
Work temperature/humidity	0□ ～ 50□ / 10%～70% RH			
Note	Support RS232 passthrough, terminal blocks, more flow			

Appearance of the structure

HDBT1 input/HDBT2input as shown in the figure

HDBT1 output/HDBT2 output as shown in the figure

Light is state

light	describe	function
STA	Signal light	Often destroyed — The corresponding channel no signal input Normally on - the corresponding channel signal input
PWR	Power light	Often destroyed - power corresponding interface card does not work Normally on - board electricity work accordingly

2、HDMI board card

The HDMI boards interface embedded digital audio separated into analog stereo, support for audio embedded solution, can independent switch. The HDMI boards support HDCP standard, support 4K、HDTV 1080p/60、VESA 1920×1200 and below the resolution of the standard signal input and out.Input board support EDID information update operations at the same time, can be convenient and fast to solve the problem for EDID information incompatible problem.

Technical parameters

The board type	HDMI input	HDMI output	
number/Signal types	A HDMI signal	A HDMI signal	
The connector type	HDMI Type A terminal	HDMI Type A terminal	
Recommend the cable type	The standard 26AWG HDMI 1.4		
Maximum transmission distance	≤ 10m		

Support video standard	HDTV 1080p @60Hz；VESA 1920x1200；4K
Support color space	RGB；YCbCr(4:2:2) YCbCr(4:4:4)
Seamless switching	No support
EDID management	DDC channels, EDID manager
HDCP management	Settings HDCP authorization or not
Support video standard	support
Support color space	support
Seamless switching	Single channel transceiver power supply DC +28V or standard PSE
EDID management	-20℃ ～ 85℃ / 5%～40% RH
HDCP management	0℃ ～ 50℃ / 10%～70% RH

Appearance of the structure

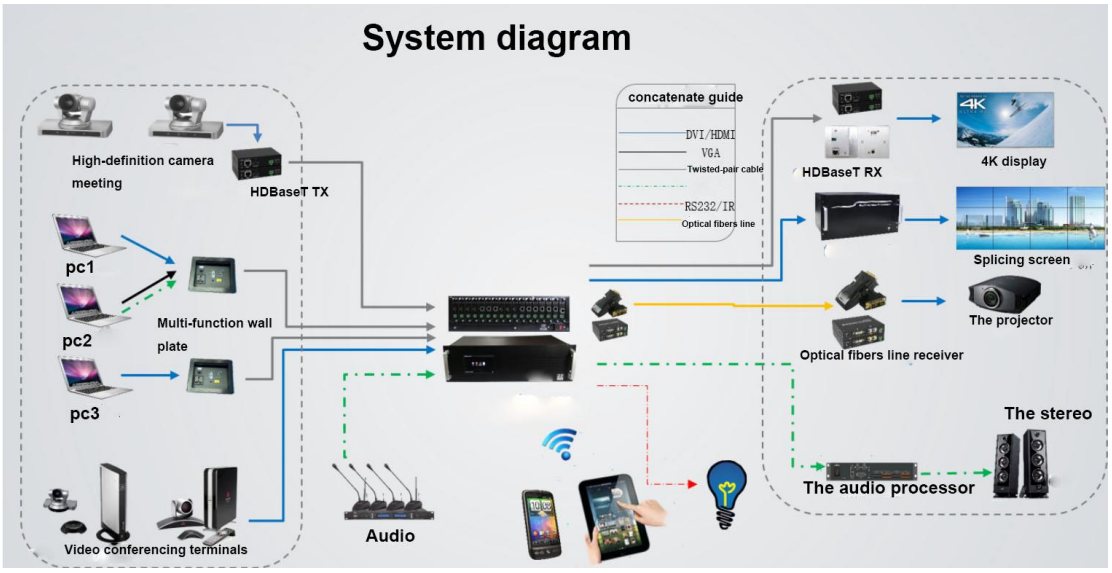
HDMI inputas shown in the figure

HDMI output as shown in the figure

Technical parameters

light	describe	function
STA	Signal light	Often destroyed — The corresponding channel no signal input Normally on - the corresponding channel signal input
PWR	Power light	Often destroyed - power corresponding interface card does not work Normally on - board electricity work accordingly

System diagram



Safety Information

To reduce the risk of electric shock, do not expose this product to rain or moisture.

Do not modify the wall plug. Doing so will void the warranty and safety features.

If the wall plug does not fit into your local power socket, hire and electrician to replace your obsolete socket.

This equipment should be install near the socket outlet and the device should be easily accessible in the case it required disconnection

Warranty

Warranty time is one year and from the date of original shipment. This warranty shall be void if a serial number has been removed from the product.
Upon determination of a legitimate defect covered by this warranty, user should bear the transport cost during the warranty.
If product is out of warranty then repair charge is required. Minimum repair charge: 10% of the retail price plus the cost of failed components. We will repair the failed product after repair cost has been approved by Customers and proper financial arrangements are made. Customer must cover round trip shipment expenses.

Return and RMA Policies

Shipments will not be receiver and processed for warranty repair/replacement without an RMA (Return Materials Authorization).