MVP-8C(N)/MVP-16C/ MVP-32C

User manual

Contents

1. Description

The Cuanbo Multimatrix is a modular multi-format matrix for 4K Ultra-HD video signal and audio management. The device supports flexible video I/O configurations:

• Multimatrix 8C: Slot 1 to 6 for in- or output cards, Slot 7+8 for output cards

• Multimatrix 16C: Slot 1 to 12 for in- or output cards, Slot 13 to 16 for output cards

• Multimatrix 32C: Slot 1 to 24 for in- or output cards, Slot 25 to 32 for output cards

Multimatrix can be configured with optional I/O modules for the following signal types: HDMI (DVI), HDBT and VGA video format. Optional HDMI scaler output cards allow seamless switching. The current input/output status is displayed on a front LCD touch display.

2. Safety instructions

• Please read the instructions carefully and store them

• The switch must be operated at safety low voltage

• Make sure that there is sufficient ventilation for all devices

• The unit may only be stored and used in a dry place

• Please note the safety instructions of the connected equipment

3. Contents

• 1 x The Cuanbo Multimatrix

• 1 x Power cord

4. Functions

• Compact 19“ base Basic for rack mount or standalone (available with 8, 16 or 32 card slots)

• Modular design with hot-pluggable plug-in modules

• Input cards: HDM (DVI), HDMI 2.0, HDBT, VGA, YPBPR, CVBS, SDI, DP, OPTIC; with audio embedding

• Output cards: HDMI(DVI), HDMI 2.0, HDMI-Scaler, HDBT, DVI-scaler, VGA-scaler, YPBPR-scaler, SDI-scaler, DP-scaler, OPTIC-scaler; with audio de-embedding

• Audio breakaway feature

• Scaler output card with support for seamless switching

• Supports 1080P@60Hz and 4K@30Hz and WUXGA up to 4K@60Hz (4:4:4) for HDMI 2.0 cards

• Switching between a selectable input signal into the desired output signal format

• HDCP 2.2 compliant, 3D compatible

• 20 Gbps back-plane signal bandwidth

• Supports HDBT up to 90 m

• Supports remote powering of external HDBT modules (transmitter or receiver) via PoC (28V) (for a list of compatible devices, see chapter 12)

• Advanced EDID management

• Supports field FW upgrade

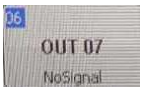
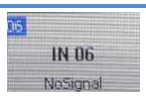
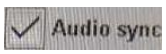
• Control options: Front touch screen, RS232 and LAN (Web GUI and TCP/IP)

• Embedded web server for easy configuration, monitoring and management

• Power consumption max. 96 W (8C) or max. 202.5 W (16C) or max. 308W (32C) or max. with HDBT PoC (28V) power supply via Cat cable (Power-over-Cable)

• Stores up to 32 switching-Presets

5. Panel description

button	function
	Video settings
	Audio settings
	EDID management
	System settings
	Switches the selected input to all outputs
	Close the selected outputs
	Save the actual switching state
	Restore a switching state
	Symbol for output with slot number
	Symbol for input with slot number
	Audio and video synchronization when switching
	Opens main interface

6. Product Technical Parameter

6.1. Matrix technical parameter

Type	MVP-8C (N)	MVP-16C	MVP-32C	
Size	2Urack mounted	3Urack mounted	5.5Urackmounted	
Port number	8	16	32	
Maximum AV in/out channel	The 7~8 are fixation output channel; the 1~6 are input or output channel	The 13~16 are fixation output channel; the 1~12 are input or output channel	The 25~32 are fixation output channel; The 1~24 are input or output channel	
Center control number	Not support	1		
Power input	AC 100 - 240V 50Hz/60Hz			
Power output	24V 4 A	27V 7.5A	28V 11A	
Power dissipation	≤ 96 W	≤ 202.5 W	≤ 308 W	
Fuse standard	220 V 1.5A			
Redundant power	●			
Storage temperature/humidity	-20℃ ～ 85℃ / 20%～60%			
Operating temperature/humidity	0℃ ～ 60℃ / 10%～80%			
Altitude limit	0 ～ 2000m			
Air pressure limit	≤ 79.5 kPa			
Signal type	TMDS			
Lever	+0.6 V ～ +1.2 V			
Maximum TMDS bandwidth	6 G bit/s			
Maximum connector bandwidth	6 G bit/s			

Maximum audio sampling	48kHz
Maximum color	1080P 36 bit/px; 4K 24 bit/px
Port impedance	50Ω / 100Ω
Clock recovery	Auto
DDC protocol	DDC DDC2B
DDC lever	5 Volts p-p(TTL)
Switching time	seamless ≤ 1s; common≤ 5s
Serial port	1-bidirectional RS-232, 3PIN Phoenix (female)
Port define	PIN 1:TX PIN 2:GND PIN 3:RX
Baud rate	9600～115200 (default) , 8 data bits, 1 stop bit, none,
Control protocol	ASCII code
LAN port	RJ-45
LAN data rate	10/100BaseT, half/full duplex
Ethernet support protocol	ICMP, ARP, IP, TCP, UDP, DHCP, HTTP
Update port	RJ45
Update way	browser
Cooling system	Cool wind

6.2. Cards technical parameter

Card version	Type	Video signal type	Resolution			Seamless switching	EDID/ HDCP	Control signal/ POE	Audio embedded	Status
			HDTV	VESA	4K					
MVPS-I-HDMI	I	HDMI	●	●	●	×	●	×	●	Sale
MVPS-O-HDMI	O	HDMI	●	●	●	×	●	×	●	Sale
MVPS-I-HDMI2.0	I	HDMI	●	●	●	×	●	×	●	Sale
MVPS-O-HDMI2.0	O	HDMI	●	●	●	×	●	×	●	Sale
MVPS-I-HDBT1	I	HDBT	●	●	●	×	●	●	●	Sale
MVPS-O-HDBT1	O	HDBT	●	●	●	×	●	●	●	Sale
MVPS-I-HDBT2	I	HDBT	●	●	●	×	●	●	●	Sale
MVPS-O-HDBT2	O	HDBT	●	●	●	×	●	●	●	Sale

MVPS-I-VGA-	I	VGA	●	●	×	×	×	×	●	Sale
MVPS-I-YPBPR	I	YPbPr	●	×	×	×	×	×	●	Sale
MVPS-I-CVBS	I	CVBS	●	×	×	×	×	×	●	Sale
MVPS-I-DVI	I	DVI	●	●	×	×	●	×	●	Sale
MVPS-I-SDI	I	3G SDI	●	×	×	×	●	×	●	Sale
MVPS-I-DP	I	DP	●	●	●	×	○	×	●	
MVPS-I-OPTIC	I	Optic	●	●	●	×	●	○	●	Sale
MVPS-O-HDMI-S	O	HDMI-S	●	●	●	●	●	×	●	Sale
MVPS-O-DVI-S	O	DVI-S	●	●	●	●	●	×	●	Sale
MVPS-O-DP-S	O	DP-S	●	●	●	●	●	×	●	
MVPS-O-SDI-S	O	3G SDI-S	●	×	×	●	×	×	●	Sale
MVPS-O-HDBT-S	O	HDBaseT-S	●	●	●	●	●	●	●	Sale
MVPS-O-OPTIC-S	O	Optic-S	●	●	●	●	●	○	●	Sale
MVPS-O-VGA-S	O	VGAS	●	×	×	●	×	×	●	Sale
MVPS-O-YPBPR-S	O	YPBPR-S	●	×	×	●	×	×	●	Sale

note:

- "I" means input card, "O" means output card
- ● : support all character
- ○ : support portion character
- × : not support
- HDTV resolution: 480i、576i、720p、1080i、1080p
- VESA resolution: 800×600 ～ 1920×1200
- 4k resolution: 3840×2160

6.3. Card options

Note: Please insert the cards only, when power cable is NOT connected to main power supply. Carefully align and position the cards before tightening the modules with 2 screws. Please insert or extract cables carefully with power switched off. The last Slot is reserved for the LAN / RS232 Communication module 'CTRL'. Quality cables are highly recommended. Cat cables are

recommend as Cat 6, AWG 23 or better, S/FTP cable.

6.3.1. Main control card

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

Technical parameters

		Specification
Type	RS232	1 channel RS232 port ➢ Can be control the matrix by the commands ➢ Support bidirectional
	LAN	1 channel LAN port ➢ Can be programmable, support TCP/IP ➢ Support WEB server management ➢ Output control voltage 5V, Upper limit voltage 24V

6.3.2. HDBaseT card

Please note, that you must first plug the jumpers at correct position for external power supply of connected

HDBT units, before installation in the matrix.

1 Port HDBT input card with analog audio embedding, supports RS232 pass trough.

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

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	≤ 70m		≤ 100m	
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 HDCP authorization or not			
Board type	HDBT1 input	HDBT2 input	HDBT1 output	HDBT2 output
Audio embedded	embedded		De-embedded	

Port hot plug	support
Power supply	Single channel transceiver power supply DC +28V
Storage temperature/humidity	-20℃ ～ 85℃ / 5%～40% RH
Work temperature/humidity	0℃ ～ 50℃ / 10%～70% RH
Note	Support RS232 pass through, terminal blocks, more flow

The matrix's HDBT modules (PoC) can supply power to connected HDBT modules. Plug in the jumpers J4 / J5: PoE (right, prepared but not yet available) or PoC (left, see illustration). Remove the jumpers when connected HDBT modules have their own power supply.

6.3.3. HDMI card

1 Port HDMI input card with analog audio embedding.

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

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 2.0		
Maximum transmission distance	≤ 10m		
Support video standard	HDTV 1080p @60Hz; VESA 1920×1200; 4K@60Hz		
Support color space	RGB; YCbCr(4:2:2) YCbCr(4:4:4)		
Seamless switching	Not support	Support	
EDID management	DDC channels, EDID manager		
HDCP management	Settings HDCP authorization or not		
Audio embedded	embedded	De-embedded	
Port hot plug	support		
Power supply	DC +5V 0.25A(1.25W)		
Storage temperature/humidity	-20℃ ～ 85℃ / 5%～40% RH		
operating temperature/humidity	0℃ ～ 50℃ / 10%～70% RH		

6.3.4. DVI card

1 Port DVI input card with analog audio embedding.

1 Port DVI output card with analog audio de-embedding.

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

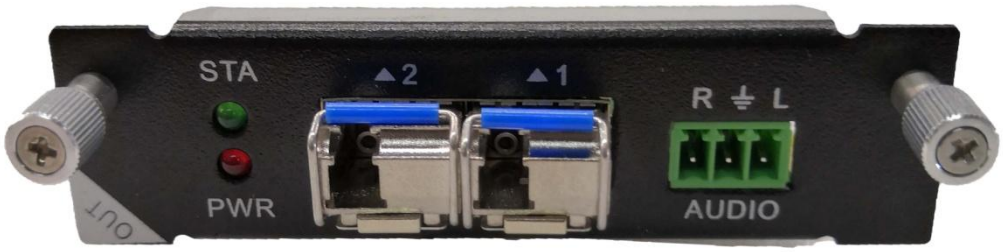
Technical parameter

The board type	MVPS-I1-DVI	MVPS-O1-DVI-S
number/Signal types	1 channel DVI-D signal	
The connector type	DVI-I 24+5	
Recommend the cable type	Standard 26AWG	
Maximum transmission distance	⩽ 10m	⩽ 10m

Support video standard	HDTV 1080p @60Hz; VESA 1920×1200	1080p/720p60Hz
Support color space	RGB; YCbCr(4:2:2) YCbCr(4:4:4)	
Seamless switching	Not support	Support
EDID management	DDC channels, EDID manager	Not support
HDCP management	Settings HDCP authorization or not	Not support
Audio embedded	embedded	De-embedded
Port hot plug	Support	
Power supply	DC +5V 0.25A(1.25W)	
Storage temperature/humidity	-10℃ ～ 70℃ / 5%～40% RH	
operating temperature/humidity	0℃ ～ 50℃ / 10%～70% RH	

6.3.5. Optic card

1 Port OPTIC input card with analog audio embedding.



1 Port OPTIC output card with analog audio de-embedding.

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

Technical parameter

The board type	MVPS-I1-Optic	MVPS-O1-Optic
number/Signal types	1-core Multi Mode Fiber Video Extender	
The connector type	LC fiber optic port	
Recommend the cable type	2-core one mode G652.D or Multi Mode OM3	
Maximum transmission distance	single mode≤1500m or multi mode≤300m	
Support video standard	HDTV 1080p @60Hz; VESA 1920×1200	
Support color space	RGB; YCbCr(4:2:2) YCbCr(4:4:4)	
Seamless switching	Not support	Support
EDID management	Not support	
HDCP management	Not support	
Audio embedded	embedded	De-embedded

Port hot plug	Support
Power supply	Not support
Storage temperature/humidity	0℃ ～ 60℃ / 5%～40% RH
operating temperature/humidity	0℃ ～ 45℃ / 10%～70% RH

6.3.6. SDI card

1 Port SDI input card with analog audio embedding.

1 Port SDI-S output card with analog audio de-embedding.

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

Technical parameter

The board type	MVPS-I1-3GSDI	MVPS-O1-3GSDI-S
number/Signal types	1channel SD/HD/3G - SDI siganl	
The connector type	BNC	
Recommend the cable type	75-5 RG6/RG59	
Maximum transmission distance	RG6 ≤ 120m; RG59 ≤ 80m	
Support video standard	SMPTE-259M/ 274M/292M/296M/ 372M/424M/425M	
Support color space	RGB; YCbCr(4:2:2) YCbCr(4:4:4)	
Seamless switching	Not support	Support
EDID management	Not support	
HDCP management	Not support	
Audio embedded	embedded	De-embedded
Port hot plug	support	
Power supply	Not support	
Storage temperature/humidity	0℃ ～ 60℃ / 5%～40% RH	
operating temperature/humidity	0℃ ～ 50℃ / 10%～70% RH	

6.3.7. CVBS card

1 Port CVBS input card with analog audio embedding.

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

Technical parameter

The board type	MVPS-I1-CVBS	
number/Signal types	1 channel CVBS signal	
The connector type	BNC	
Recommend the cable type	Standard 26AWG	
Maximum transmission distance	⩽ 10m	
Support video standard	NTSC/PAL	
Support color space	RGB	
Seamless switching	Not support	
EDID management	Not support	
HDCP	Not support	

management	
Audio embedded	embedded
Port hot plug	Support
Power supply	Not support
Storage temperature/humidity	0℃ ～ 60℃ / 5%～40% RH
operating temperature/humidity	0℃ ～ 50℃ / 10%～70% RH

6.3.8. YPBPR card

1 Port YPBPR input card with analog audio embedding.

1 Port YPBPR output card with analog audio de-embedding.

LED's:

STA (Status) : Green if signal is active

PWR (Power) : Red if board electricity works accordingly

Technical parameter

The board type	MVPS-I1-YPBPR	MVPS-01-YPBPR-S
number/Signal types	1 channel YPBPR signal	
The connector type	DB15	
Recommend the cable type	Standard 26AWG	
Maximum transmission distance	⩽ 10m	
Support video standard	SJT 11333-2006	
Support color space	RGB	
Seamless switching	Not support	Support
EDID management	Not support	
HDCP management	Not support	
Audio embedded	embedded	De-embedded
Port hot plug	Not support	
Power supply	Support	
Storage temperature/humidity	0℃ ～ 60℃ / 5%～40% RH	
operating temperature/humidity	0℃ ～ 50℃ / 10%～70% RH	

6.3.9. VGA card

1 Port VGA input card with analog audio embedding.

1 Port VGA-S output card with analog audio de-embedding.

LED's:

STA (Status) : Green if signal is active

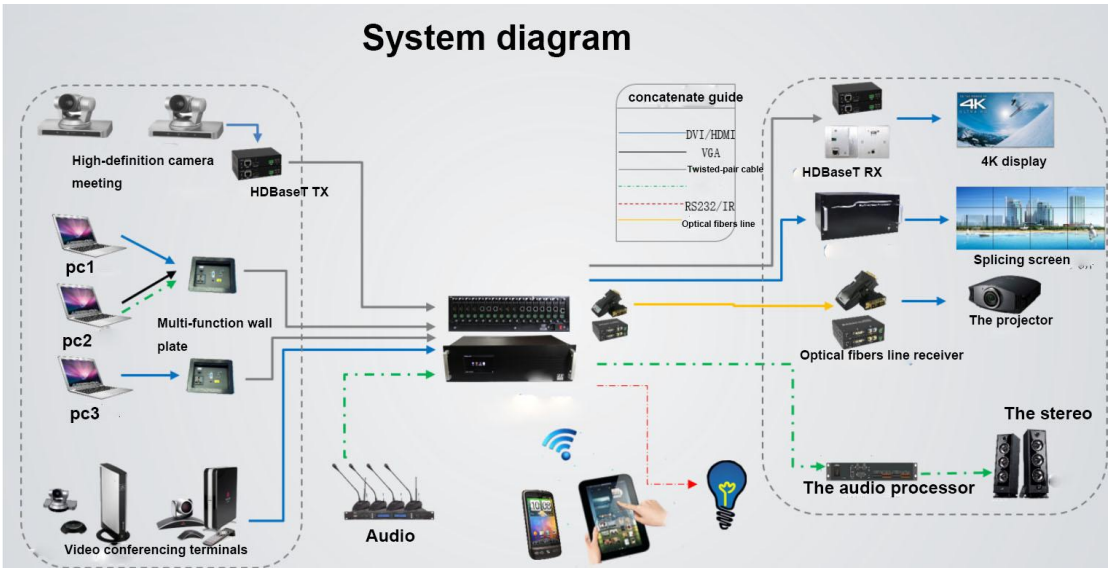
PWR (Power) : Red if board electricity works accordingly

Technical parameter

The board type	MVPI-1-VGA	MVPI-1-VGA-S
number/Signal types	1 channel VGA signal	
The connector type	DB15	
Recommend the cable type	Standard 26AWG	
Maximum transmission	⩽ 10m	

distance		
Support video standard	VESA/ HDTV	
Support color space	RGB	
Seamless switching	Not support	Support
EDID management	Not support	
HDCP management	Not support	
Audio embedded	embedded	De-embedded
Port hot plug	Support	
Power supply	Not support	
Storage temperature/humidity	0℃ ～ 60℃ / 5%～40% RH	
operating temperature/humidity	0℃ ～ 50℃ / 10%～70% RH	

7.System connection diagram



8. Basic operation

There are four sub-menus in the main menu, which can be selected: Video, Audio, EDID Management and system settings.

8.1. Video control

The keypad can be used for uninterrupted switching between image input and external outputs.

8.1.1. Switch signal from one input to one or more output ports

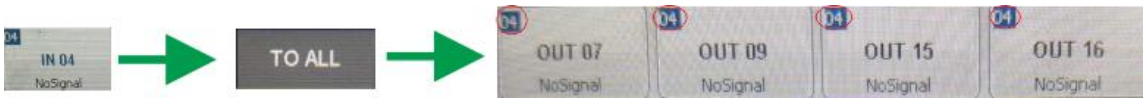
In the video menu select the input by touch. Now press the output/outputs you want switch to this source to.

At the icon for the output the number of the switched input will appear. This switching is shown in the display.

8.1.2. Switch signal from one input to all outputs

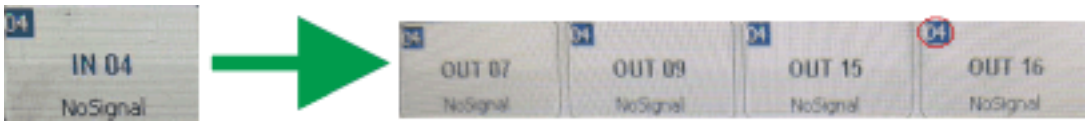
In the video menu select the input by touch. Now press the button 'TO ALL'.

This switching is shown in the display.



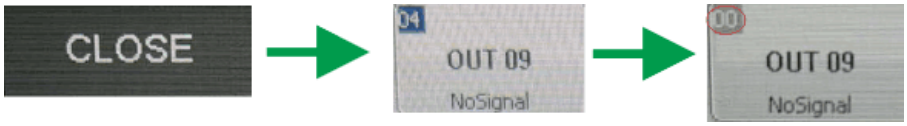
In the video menu select the input by touch. Now press the output.

This switching is shown in the display.



8.1.3. Blank output

In the video menu press the button ‘Blank Output’ and the output / outputs you want to blank. This switching is shown in the display.



8.2. Audio control

Audio can be switched like Video for single or all Outputs to a selected input. They can be deactivated with ‘Mute Output‘.

8.3. EDID management

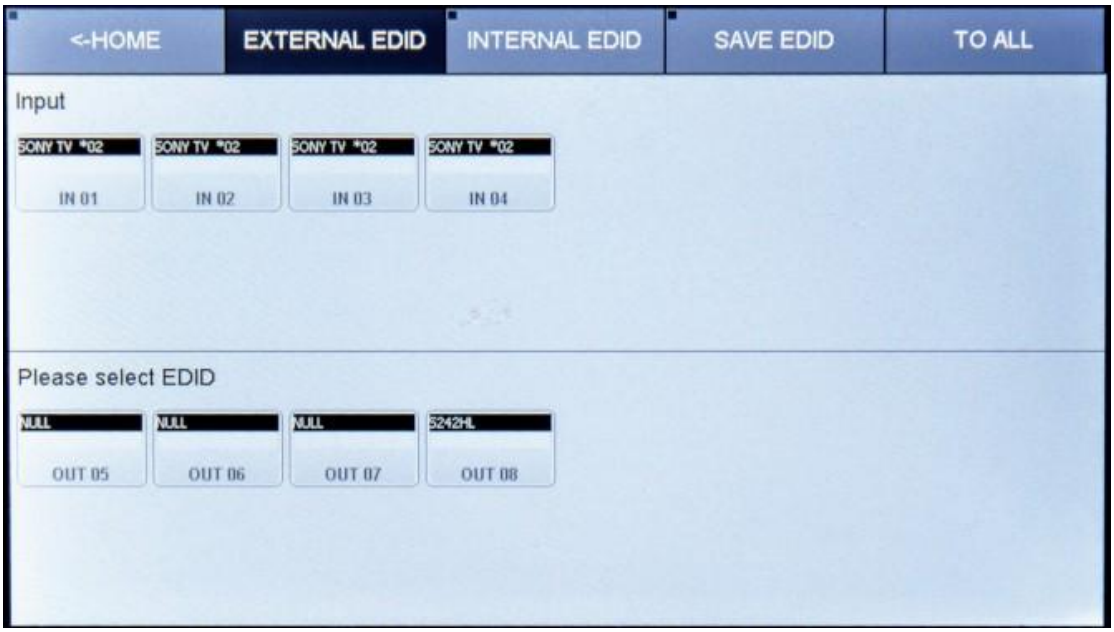
Problems with the EDID communication between the signal source and the monitor / projector often show up when no picture is shown on the display, the picture shows interference, is out of focus or does not fill the screen.

Usually these most common on-site issues can be solved with a correct EDID management.

With the EDID information, the resolution of the graphics card of the signal generator (e. g. laptop) is automatically adapted to the resolution of the playback device (e. g. projector).

The EDID information can be read from a terminal connected to the active output (display or projector).

This EDID can be copied via the touch panel or via the GUI of the Web browser to the required input. So the individual EDID data is available at the input and request exactly the same settings from the graphic cards of the signal sources.

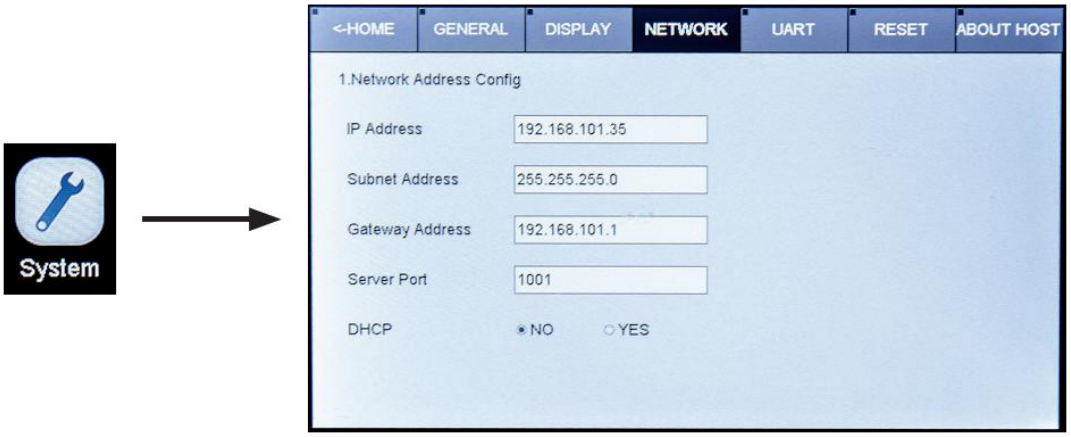


At the main menu, select the EDID Management icon. Choose the Output you want to copy the EDID from and select the input you want to write this EDID to. Now this input will present that EDID to connected source. On the Screen this Information is shown at the Input symbol. The EDID tables are storable in the unit via touch screen and Web-Browser.

8.4. System configuration

8.4.1. IP configuration

In the main menu select System settings, ‘NETWORK’ to configure the LAN Settings.

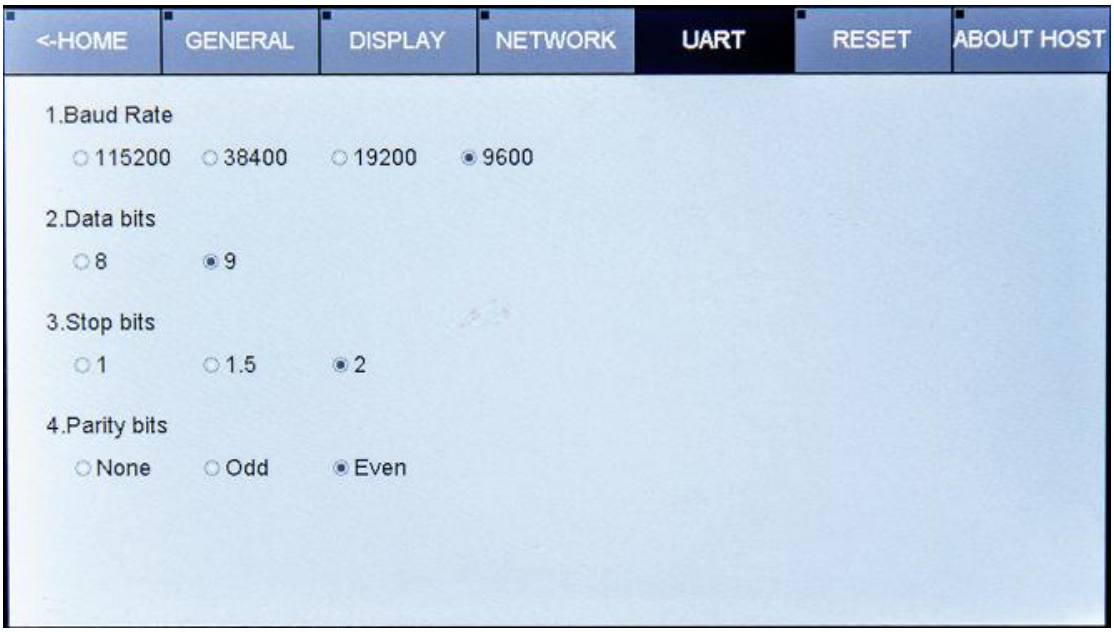


At Server Port you can define the Port for the TCP Connection. Please find the commands at RS232 protocol.

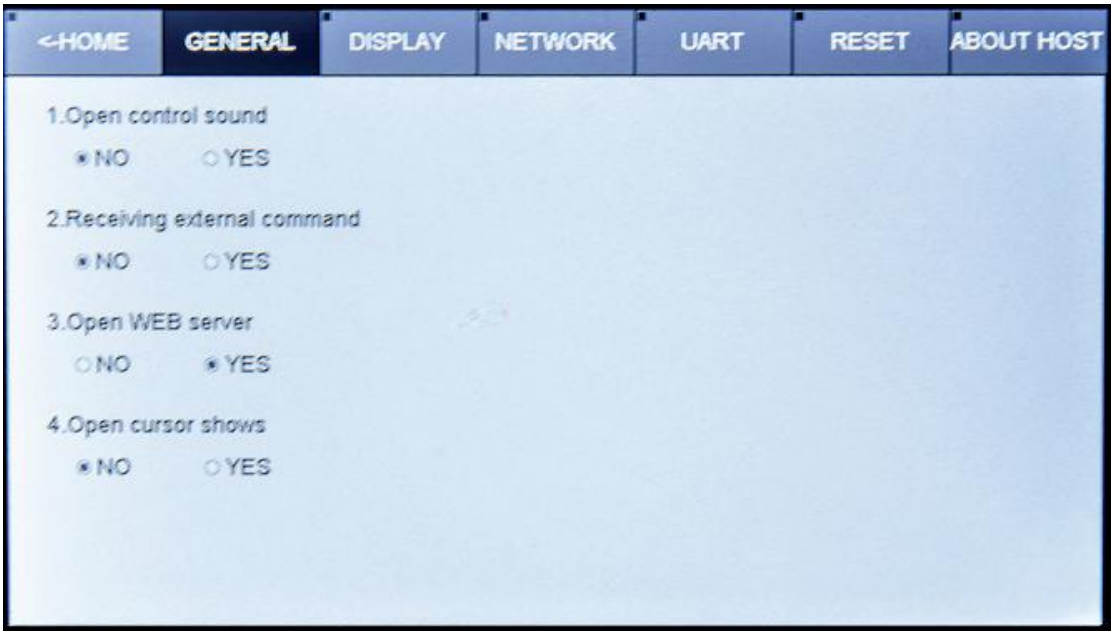
With activated DHCP the IP Address will be requested from an existing DHCP Server automatically.

8.4.2. RS232 settings

In the main menu select System settings, ‘UART‘ to configure the RS232 settings.



8.4.3. General settings



8.4.4. Show unit information

Firmware version, Hardware version, MAC adress

9. Web server

The factory default IP: 192.168.88.229, Port 80

User: ‚user‘; password: ‚123456‘

To access the product web server, connect the PC LAN port directly to the Cuanbo Multimatrix LAN port with a straight RJ45 cable. After making the connection, go to network connection of the PC and revise the IP property to static IP as below. Once done, open a web browser and enter the 192.168.2.245 to access the web server.

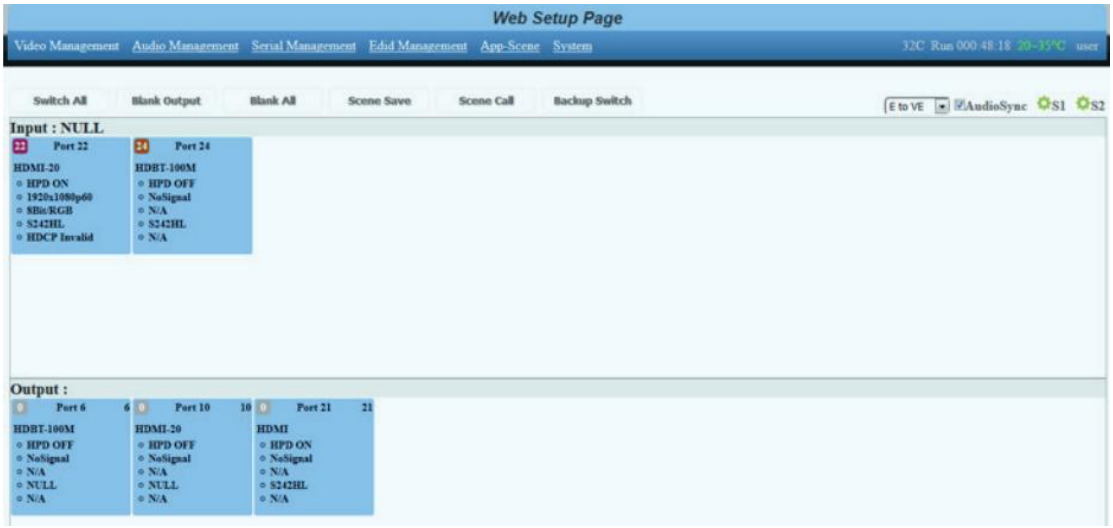
To connect the Cuanbo Multimatrix to the local area network, please update the Cuanbo Multimatrix product IP to match the LAN network setting from the web server.

For example if the LAN IP is set as 192.168.88.xxx, then please revise the product to 192.168.88.1xx. Once the IP is set, you access to the device from any PC in the same network.

Default: User: ‚user‘; password: ‚123456‘

9.1. Video management

The control of the Multimatrix can be done via a WEB-Browser. The Menu on Top offers: Video Management, Audio Management, Serial Management, EDID Management, App-Scene and System (configuration).



9.1.1. Video Port management

The Video Management page offers direct, trouble-free switching from any input (source) to one or more outputs (sinks): for switching, user can select the input (once selected, it will

stay highlighted) and then click on the output tab (or tabs) to switch. Once switched, the output tab will indicate the input port info once switched.

9.1.2. Changing name of port

For switching, you can choose which audio source is used in the top right corner of the pull down menu. The following options are available:

VE to VE: Source audio to sink +embedded audio to de-embedded

VE to EV: Source audio to de-embedded, embedded audio to sink

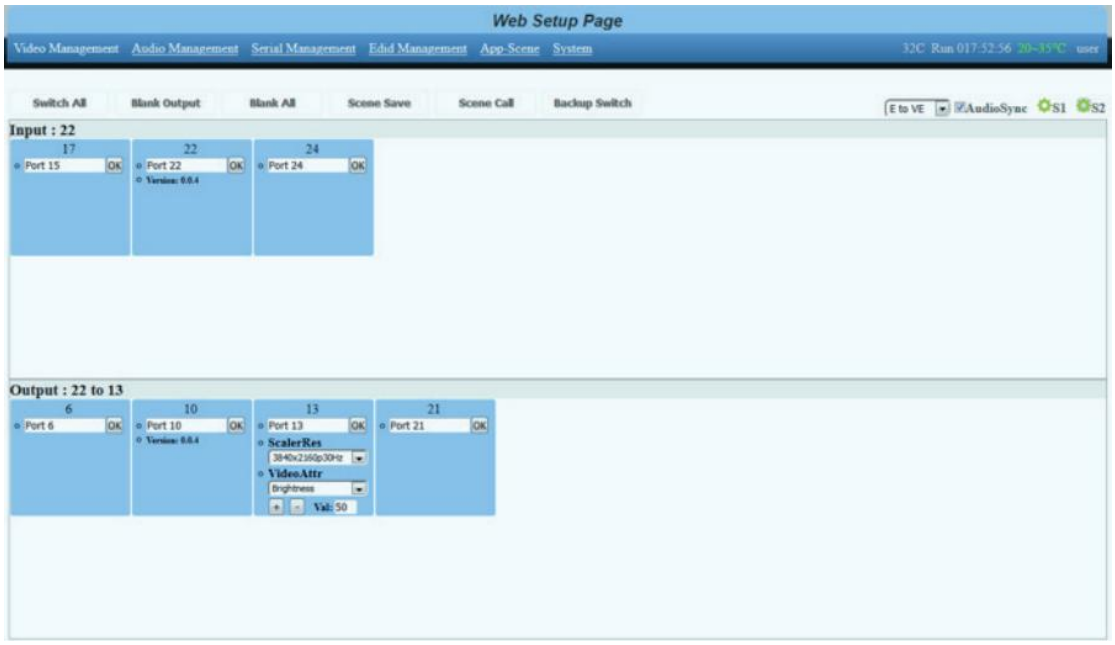
E to VE: Embedded audio to sink and de-embedded

E to E: Embedded audio to de-embedded

V to V: Source audio to sink

V to E: Source audio to de-embedded

The name of a slot can only be changed in the Web GUI. In the menu item Video Management on the right, switch to the view 'S2'. There you can edit the names of the slots and save them with OK.

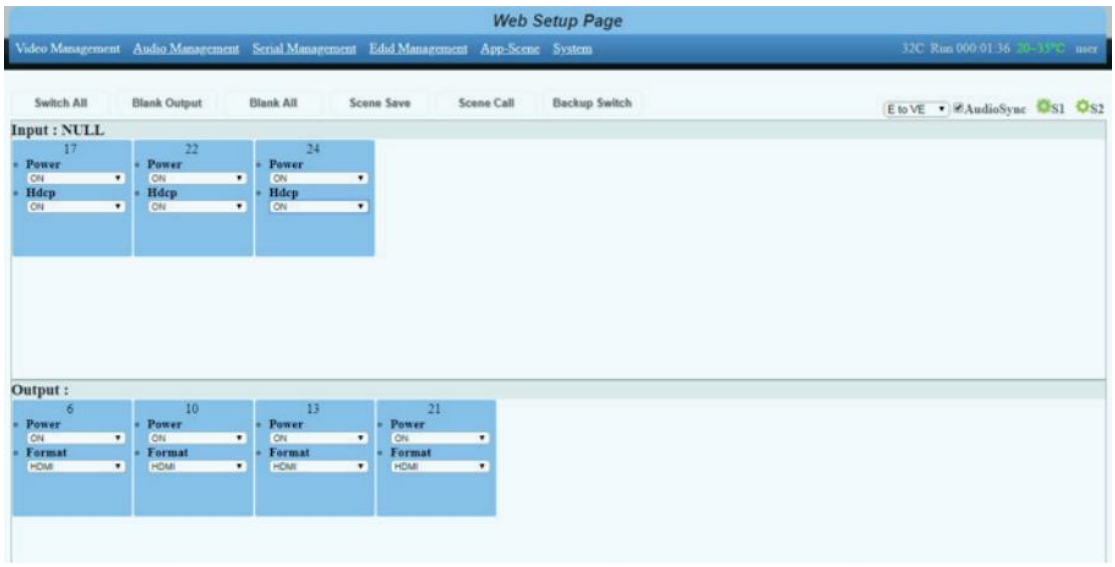


9.1.3. Changing Resolution of Scaler output card

The output resolution of a scaler card can only be changed in the Web GUI. In the menu item Video Management on the right, switch to the view 'S2'. There you can set the available resolutions. Likewise, the brightness, color saturation, contrast and sharpness can be finely adjusted by +/- 50.

9.1.4. activate/ cards

The power supply of each input/output card can be switched on/off individually for each card via Web GUI. In the menu item Video Management right-click on the view, S1 '. There you can switch the supply voltage of the card on and off via pull-down (default: ON).



9.1.5. HDCP management

The HDCP capability of each input card can be switched individually for each card in the Web GUI. In the menu item Video Management right-click on the view, S1 '. There you can switch the HDCP function of the card on and off via pull down (default: ON).

9.1.6. Switching HDMI/DVI operating mode

Each HDMI/HDBT output card can be switched from HDMI (default) to DVI. To do this, in the menu item Video Management, switch right to the view 'S1'. There you can set the format of each output card to DVI/HDMI by pull down.

9.1.7. Audio Port management

Choose the Audio Management in the menu bar. Now the available inputs and outputs will be shown. At first select the source and then the output/outputs.

Note: V means in Video signal embedded, E means external connector. With 'mute output' the selected output can be muted.

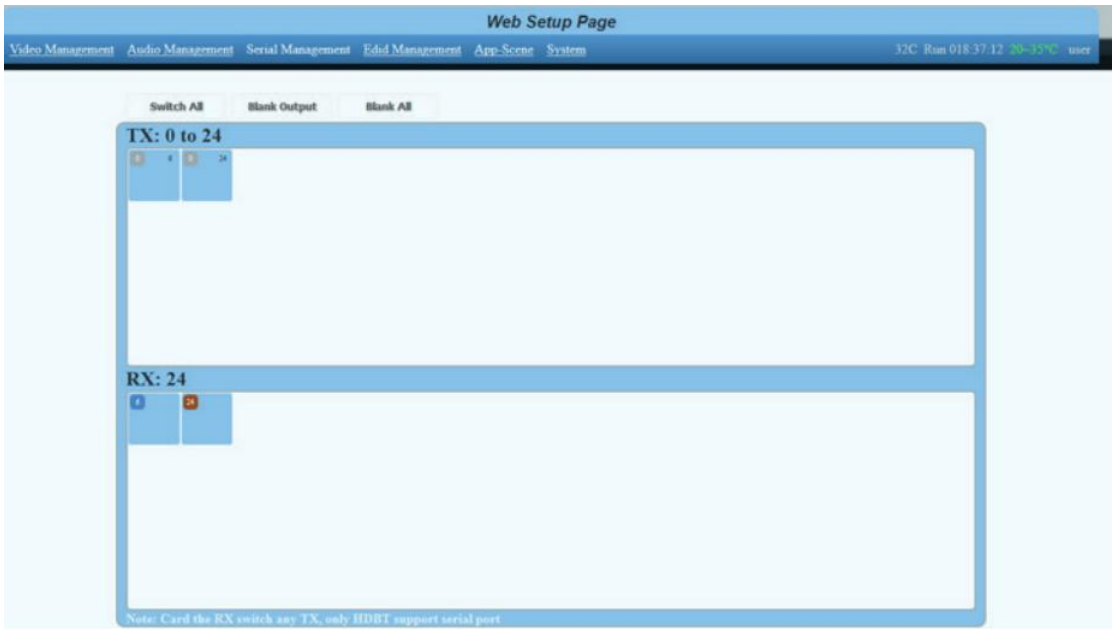
9.2. serial management

Select serial Management in the menu bar. Now the available RS232 interfaces are displayed separately according to input and output card. First select the desired source and then the sink/sink. Now the two RS232 connections are internally routed.

(1)Please switch the Input's TX to the output's RX.

(2)Then switch the input's RX to the output's TX.

Note: Bidirectional transmission is only possible with a point-to-point connection.



9.3. EDID management

The EDID management via WEB GUI is equivalent to the EDID configuration via touch screen.

Details can be found in chapter 8.3

9.4. Scene management

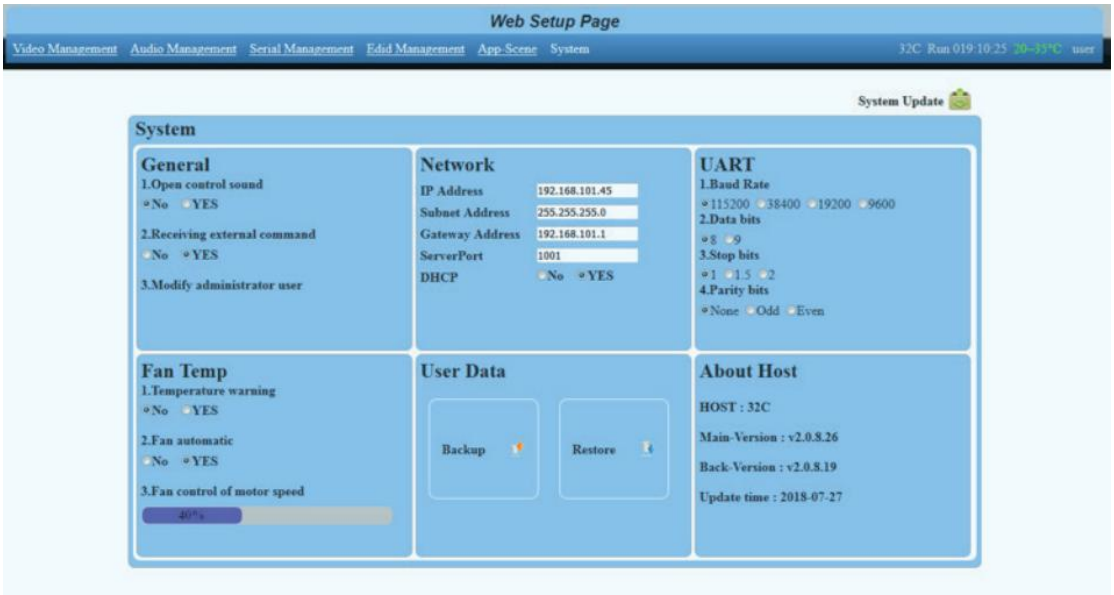
The Multimatrix allows saving and restoring up to 32 scenarios. These can be saved in the video or audio menu.

The administration of those scenes takes place under the tab 'App-Scene' in the WEB GUI.

9.5. Scene setup and overwiew

This page combines all important parameters of the Multimatrix:

- Network and RS232 settings
- Installed firmware versions
- Fan settings
- User administration
- Save and restore the system configuration
- Key tones on/off
- TCP port on/off



Firmware update can be done with the button ‘System update’ in the right upper corner.

10. IP and RS232 protocol

Supports communication via TCP/IP and RS232.

Default: TCP Port 1001; RS232 Baudrate = 115200 bd, 8 1

Number	Action	Basic ASCII String	Variables	Example Settings	Example String	Example Response
1	Switch the single channel input of the video to the single channel or B12 multiple output	>Catob, c<CR>	a = input (1 ~ matrix max) b c = output (1 ~ matrix max or ALL)	Switch the video input 1 to the video output 2 and 3	>C1to2, 3<CR>	<C1to2, 3<CR>
2	Switch the video input channel to the video output channel, they’ re correspondence	>CRa:b, c:d<CR>	a c = output (1 ~ matrix max) b d = input (1 ~ matrix max)	Switch the video input 1 to the video output 3, and switch the	>CR1:3, 2:4<CR>	<CR1:3, 2:4<CR>

				video input 2 to the video output 4		
3	Select the video input channel, it need to combination with the >CSWO command use	>CSWI:a<CR>	a = input(1 ~ matrix max)	Select the video input 2	>CSWI:2<CR>	<CSWI:2<CR>
4	Select the video input from The >CSWI, then switch to the video out	>CSWO:a<CR>	a = output(1 ~ matrix max)	Select the video input from The >CSWI, then switch to the video output 2 and 3	>CSWO:2,3<CR>	<CSWO:2,3<CR>
5	Query the status of the video output	#CR<CR>	NULL	Query corresponding relations between	#CR<CR>	<CR1:3,2:4<CR>
6	Switch the single channel input of the audio to the single channel or multiple channel audio out	>Tatob,c<CR>	a = input(1 ~ matrix max) + V/E b c = output(1 ~ matrix max or ALL) + V/E Note:V=Internal audio E=External audio	the input1's internal audio switch to the output2's internal and external audio	>T1Vto2V,2E<CR>	<T1Vto2V,2E<CR>
7	Switch the audio input channel to the audio output channel , they're correspondence	>TRa:b,c:d<CR>	a c = output(1 ~ matrix max) + V/E b d = input(1 ~ matrix max or ALL) + V/E Note:V=Internal audio E=External audio	Switch the audio input 1V to the audio output 2V, and switch the audio input 1E to the audio output 2E	>TR1V:2V,1E:2E<CR>	<TR1V:2V,1E:2E<CR>
8	Select the audio input channel, it need to combination with the >TSWO command use	>TSWI:a<CR>	a = input(1 ~ matrix max) + V/E Note: V=Internal audio E=External	Select the audio input 2A	>TSWI:2V<CR>	<TSWI:2<CR>

			audio			
9	Select the audio input from the >TSWI, then switch to the audio out	>TSWO:a<CR>	a = output(1 ~ matrix max) + V/E Note:V=Internal audio E=External audio	Select the audio input from the >TSWI, then switch to the audio output 3V and 3E	>TSWO:3V,3E<CR>	<TSWO:2,3<CR>
10	Query the status of audio output	#TR<CR>	NULL	Query corresponding relations between	#TR<CR>	<TR1V:3V,2V:4B<CR>
11	Save the scene	>Sa<CR>	a = Scene location (1~32max)	Save the current state to the 10 scene	>S10<CR>	<CR1:3,2:4,...<CR>
12	Call the scene	>Ra<CR>	a = Scene location (1~32max)	Call the scene 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 status of the audio and video synchronization	#SYNC<CR>	NULL	Query synchronous	#SYNC<CR>	<SYNC:1<CR>
15	Set the audio and video synchronization mode	>SYNC_MODE:a<CR>	a = (mode) 0 : VE -> VE 1 : VE -> EV 2 : V -> VE (default) 3 : E -> VE 4 : V -> V 5 : E -> E 6 : V -> E 7 : E -> V Note: V=Internal audio E=External audio	Set the audio and video synchronization mode	>SYNC_MODE:1<CR>	<SYNC_MODE:1<CR>
16	Query the audio and video synchronization mode	#SYNC_MODE<CR>	NULL	Query the audio and video synchronization mode	>SYNC_MODE:1<CR>	<SYNC_MODE:1<CR>

17	Set the scene name	>SNAMEa:b<CR>	a = Scene number (1~32max) b = scene name(15 English char)	Set the scene10 name to "Meeting"	>SNAME10:Meeting<CR>	<SNAME10:Meeting<CR>
18	Query the scene name	#SNAMEa<CR>	a = Scene location (1~32max)	Query the scene10 name	#SNAME10<CR>	<SNAME10:Meeting<CR>
19	Whether the scene is displayed on the WEB	>SUSEa:b<CR>	a = Scene number (1~32max) b = scene use (0=no display 1=display)	Set the scene10 for display on the WEB	>SUSE10:1<CR>	<SUSE10:1<CR>
20	Query the status of the scene	#SUSEa<CR>	a = Scene location (1~32max)	Query the scene10 use	#SUSE10<CR>	<SUSE10:1<CR>
21	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>
22	Query the status of all uart	#CRUART<CR>	NULL	Query the status of all uart	#CRUART<CR>	<CRUART1:1,2:1,...<CR>
23	Set the IP address	>IP:a.b.c.d<CR>	a b c d = address(0~255)	set IP address to the 192.168.2.229	>IP:192.168.2.229<CR>	<IP:192.168.2.229<CR>
24	Set the Subnet	>SUBNET:a.b.c.d<CR>	a b c d = address(0~255)	set Subnet to the 255.255.255.0	>SUBNET:255.255.255.0<CR>	<SUBNET:255.255.255.0<CR>
25	Set the Gateway	>GATEWAY:a.b.c.d<CR>	a b c d = address(0~255)	set Gateway to the 255.255.255.0	>GATEWAY:192.168.2.1<CR>	<GATEWAY:192.168.2.1<CR>
26	Set the Socket Server port	>PORT:a<CR>	a = Server port	Set the Socket Server port to the 1001	>PORT:1001<CR>	<PORT:1001<CR>
27	Set Network DHCP	>DHCP:a<CR>	1= 0:no open 1:open	Set Network DHCP for open status	>DHCP:1<CR>	<DHCP:1<CR>
28	Query the network information	#NETWORK<CR>	NULL	Query the network information	#NETWORK<CR>	<IP:192.168.2.229<CR> <SUBNET:255.25

						5.255.0<CR> <GATEWAY:192.168.2.1<CR> <PORT:1001<CR>
29	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 to the 9600,8,1,None	>UART:9600,8,1,None<CR>	<UART:9600,8,1,None<CR>
30	Query the serial port	#UART<CR>	NULL	Query the serial port	#UART<CR>	<UART:9600,8,1,None<CR>
31	Set command enable, the commands received by socket and serial port will not be processed after closing (but the >CMDEN:a<CR> command will not be affected).	>CMDEN:a<CR>	a = 0:no make 1:make	Set command enable	>CMDEN:1<CR>	<CMDEN:1<CR>
32	Query the status of the command enable	#CMDEN<CR>	NULL	Query the status of the command enable	#CMDEN<CR>	<CMDEN:1<CR>
33	Set the sound when send the command is sent	>CSOUND:a<CR>	a = 0:no sound 1:sound	Set the sound when send the command is sent	>CSOUND:1<CR>	<CSOUND:1<CR>
34	Query the status of the sound when command is sent	#CSOUND<CR>	NULL	Query the status of the sound when command is sent	#CSOUND<CR>	<CSOUND:1<CR>
35	switch EDID of the output to the input port	>EDIDatob<CR>	a = output(1 ~ matrix max) b = input(1 ~ matrix max or ALL)	Switch EDID of the output 1 to the input 2 port	>EDID1to2<CR>	<EDID1to2<CR>
36	switch EDID of the system to the input port	>SYSEatob<CR>	a = system(1 ~ 16) b = input(1 ~	Switch system's EDID 1 to the input 2 port	>SYSE1to2<CR>	<SYSE1to2<CR>

			matrix max or ALL)			
37	Save EDID of the output to the system	>SEDIDatob<CR>	a = output(1 ~ matrix max) b = system(1 ~ 16)	Save EDID of the output 1 to system 2	>SEDID1to2<CR>	<SEDID1to2<CR>
38	Select the output port to output HDMI or DVI formats	>HDMODE:a,b<CR>	a = output(1 ~ matrix max) b = 0:DVI 1:HDMI	Set the output 2 for HDMI format	>HDMODE:2,1<CR>	<HDMODE:2,1<CR>
39	Open or close the HDCP of the port (IN/OUT card)	>HDCP:a,b<CR>	a = port(1 ~ matrix max) b = 0:OFF 1:ON	Set the port 2 the hdcp for off	>HDCP:2,0<CR>	<HDCP:2,0<CR>
40	Turn on or off the power of the card	>CPOWER:a,b<CR>	a = port(1 ~ matrix max) b = 0:OFF 1:ON	Close the port 2 power supply	>CPOWER:2,0<CR>	<CPOWER:2,0<CR>
41	Query the power status of card	#CPOWER:a<CR>	a = port(1 ~ matrix max)	Query the power status of card 2	#CPOWER:2<CR>	<CPOWER:2,0<CR>
42	Set user login WEB interface's user name and password (Arabic numerals and English word only)	>MUNP:a,b<CR>	a = name(15 the English characters or Arabic numerals) b = password(15 the English characters or Arabic numerals)	set user name:Main password:123456	>MUNP:Main,123456<CR>	<MUNP:Main,123456<CR>
43	Query management user name and password	#MUNP<CR>	NULL	Query management user name and password	#MUNP<CR>	<MUNP:Main,123456<CR>
44	Send commands to control board	>COMa<CR>	a = control card command	send "-TEST" string	>COM-TEST<CR>	NULL(you don't online returns the ERROR)
45	Checking whether the central control board is online or not	#COM<CR>	NULL	can check out the central control board is online by sending	#COM<CR>	<COM:1<CR>

				"#COM<CR>"to get a response of "<COM:1<CR>"		
46	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>
47	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 }, ... }
48	Set the system language	>LANG:a<CR>	a = 0：English 1：Chinese	Set the system language is Chinese	>LANG:1<CR>	<LANG:1<CR>
49	Query system language	#LANG<CR>	NULL	Query system language	#LANG<CR>	<LANG:1<CR>
50	Restart the system	>SOF-RESTART<CR>	NULL	Restart the system	>SOF-RESTART<CR>	<SOF-RESTART<CR>
51	Restore the factory Settings	>SYS-RESET<CR>	NULL	Restore the factory Settings	>SYS-RESET<CR>	<SYS-RESET<CR>
52	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>
53	Query main software version	#SVER<CR>	NULL	Query main software	#SVER<CR>	<SVER:1.0.0<CR>

				version		
54	Query hardware version	#HVER<CR>	NULL	Query hardware version	#HVER<CR>	<HVER:1.0.0<CR>
55	Query the firmware version of the back board	#BVER<CR>	NULL	Query back software version	#BVER<CR>	<BVER:1.0.0<CR>
56	Query the matrix type	#MO<CR>	NULL	Query matrix type	#MO<CR>	<MVP-16C<CR>
57	send commands to HDBT cards	>SEND-CU:a:xb:c<CR>	a = baud Rate(115200 38400 19200 9600) x =I or O b = card port c = data	For example, send "TEST" to output port1	>SEND-CU:115200:01:TEST<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

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 require disconnection

Warranty

Warranty time is two 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).