User Manual

Multiview KVM Processor

Contents

1. Overview

The Multiview KVM Processor is the excellent machine for monitoring and controlling host devices. It not only displays 4 host devices in 4K60 resolution through one HDMI output, but also provides real-time control of 4 host devices by one set of keyboard and mouse.

2. Features

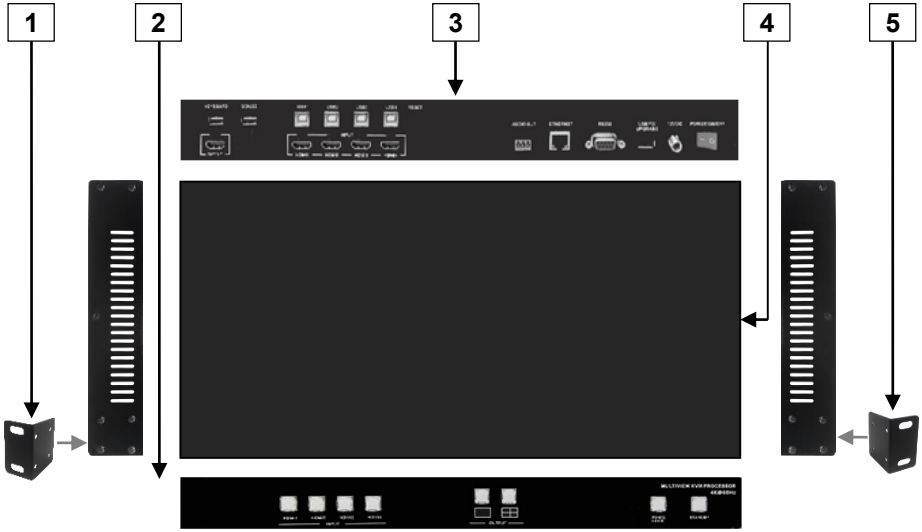
- Supports quadview and full screen modes
- Supports seamlessly move your mouse from monitor to monitor across computers in quad view mode
- Supports 4K@60Hz full screen and quadview layout configuration
- Supports input resolution up to 4K@60Hz, 4:4:4 color sampling
- Supports output resolution up to 4K@60Hz, 4:4:4 color sampling
- Supports upscaling up to 4K@60Hz, 4:4:4 color sampling
- Supports Deep Color and HDCP 1.4 / 2.2
- Supports cascading up to 5 units to create max. 16 host devices controlled by 1 set of keyboard and mouse
- Fast switching between the input channels or the screen layout modes
- Receive Dolby Digital® 5.1, DTS® 5.1 and uncompressed 7.1 linear PCM audio
- Supports stereo audio output
- Supports keyboard/ mouse, front panel button, IR remote control, RS232/TELNET and Web UI control
- Supports USB port firmware upgrade

3. Specifications

MODEL NO.	Multiview KVM Processor
INPUT	4 x HDMI 2.0 with locking
OUTPUT	1 x HDMI 2.0 with locking
KEYBOARD/MOUSE	4 x USB type B for host devices 2 x USB type A for keyboard and mouse
CONTROL	Front panel buttons IR remote control RS232/TELNET Web UI
FIRMWARE UPGRADE	1 x USB 2.0
VIDEO OUTPUT RESOLUTION	3840 x 2160@60Hz, 4:4:4 color sampling
ETHERNET PORT	1 x RJ45
LED INDICATOR	INPUT, blue backlight OUTPUT, blue backlight PANEL LOCK, blue backlight STANDBY on, red backlight STANDBY off, green backlight
POWER SUPPLY	DC 12V/2A, locking barrel connector
POWER CONSUMPTION	15W
ENVIRONMENT	Operating temperature 0 ℃ ~ 45 ℃ Operating humidity 20~90% RH Storage temperature -20 ℃ ~ 60 ℃
DIMENSION	440.4 x 230 x 45 mm (L x W x H, standard1U)
WEIGHT	2.8 KG

4. Hardware Descriptions

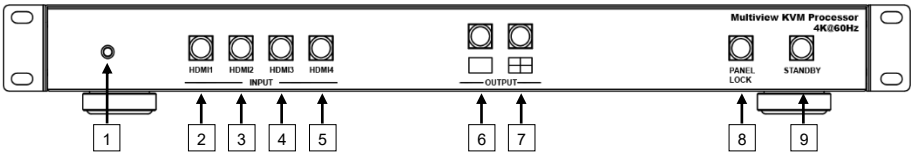
4.1 Product Appearance



No.	Feature	Description
1	Rack Mount Bracket *	Attach the bracket to the left side of the system chassis for rack mount installation
2	Front Panel	Push buttons control Multiview KVM Processor
3	Rear Panel	Connect Video and Audio signal via rear panel input connectors
4	System Chassis	Black metal housing and the size is 1 rack unit
5	Rack Mount Bracket *	Attach the bracket to the right side of the system chassis for rack mount installation

* Rack Mount Bracket: Spare screws are included in the package for rack mount installation.

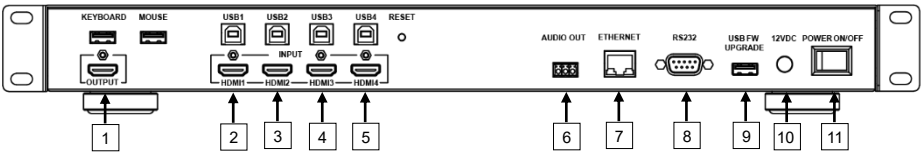
4.2 Front Panel



No.	Feature		Description
1	IR Receiver		Receives signals from the remote-control transmitter
2	INPUT*	HDMI1	Press to select HDMI 1 input in full screen Press to select HDMI 1 audio in quad-view screen
3		HDMI2	Press to select HDMI 2 input in full screen Press to select HDMI 2 audio in quad-view screen
4		HDMI3	Press to select HDMI 3 input in full screen Press to select HDMI 3 audio in quad-view screen
5		HDMI4	Press to select HDMI 4 input in full screen Press to select HDMI 4 audio in quad-view screen
6	OUTPUT*		Press to select layout A (full screen) mode
7			Press to select layout B (quadview) mode
8	PANEL LOCK		Press to lock or unlock the front panel buttons
9	STANDBY		Press to put the system into standby mode or wake up the system

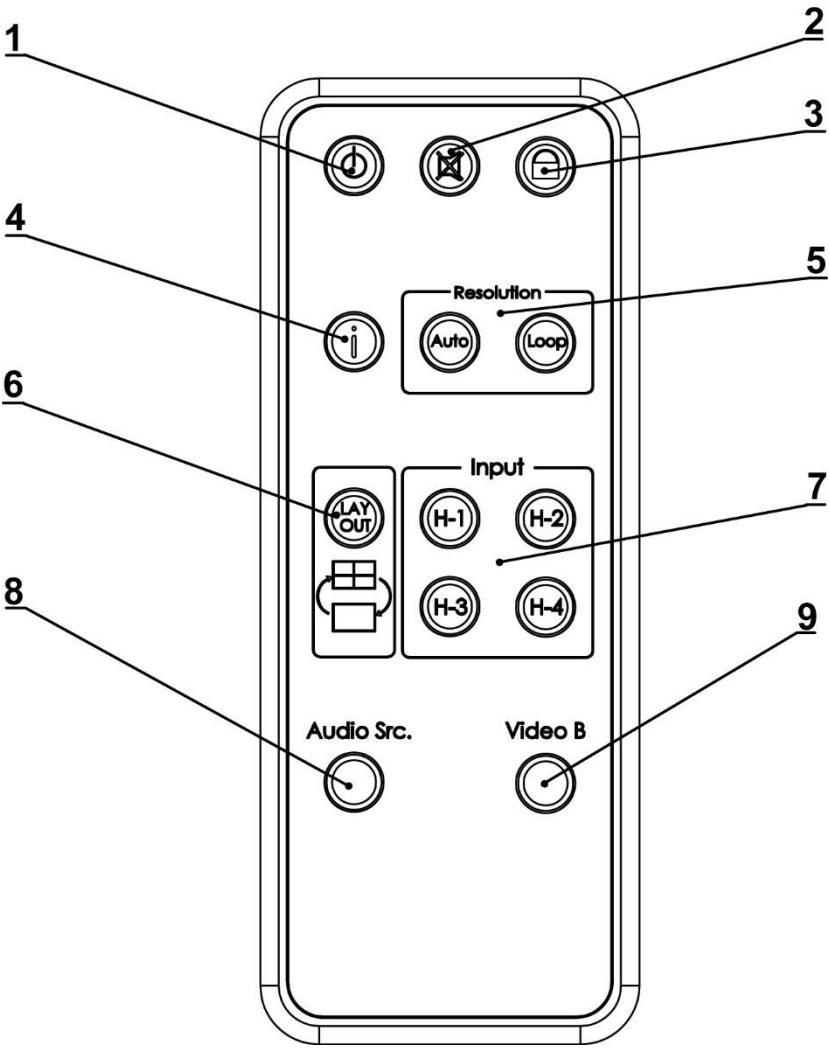
* Please find Appendix 1 on the last page

4.3 Rear Panel



No.	Feature		Description
1	OUTPUT		Connect to the HDMI display device, connector on rear panel with locking
2	INPUT	HDMI1	Connect to the HDMI source, connector on rear panel with locking
3		HDMI2	Connect to the HDMI source, connector on rear panel with locking
4		HDMI3	Connect to the HDMI source, connector on rear panel with locking
5		HDMI4	Connect to the HDMI source, connector on rear panel with locking
6	AUDIO OUT		Connect to the audio amplifier
7	ETHERNET		Connect to PC, NB or other Controllers through IP network
8	RS232/TELNET		Connect to PC, NB or other Controllers
9	USB		Attach a USB flash drive for firmware upgrade
10	12V DC		Connect to the 12V/2A power supply, connector on rear panel with locking
11	POWER ON/OFF		Power switch for turn ON or OFF the Multiview KVM Processor

4.4 IR Remote Control



No.	Feature		Description
1	Standby		Put the system into standby mode or wake up the system
2	Mute		Mute or unmute the audio output
3	Lock		Lock or unlock the front panel buttons
4	Info.		System information
5	Resolution	Auto	Set output resolution to Auto
		Loop*	Loop switching output resolution among the supported timings
6	Layout		Switch between full screen and quadview
7	Input*	H-1	Select HDMI 1 in full screen mode Select HDMI 1 audio in quadview mode
		H-2	Select HDMI 2 in full screen mode Select HDMI 2 audio in quadview mode.
		H-3	Select HDMI 3 in full screen mode Select HDMI 3 audio in quadview mode
		H-4	Select HDMI 4 in full screen mode Select HDMI 4 audio in quadview mode
8	Audio Src.		Loop selecting HDMI audio source
9	Video B		Reserved

* Please find Appendix 1 on the last page

5. Installation

5.1 Wiring Diagram

Do the following steps for device connections.

a. If the source is a computer, turn off the power and disconnect the keyboard and mouse. (optional)

b. Connect a source/computer to HDMI 1 input connector via a HDMI cable and USB1 connector via a USB A-B cable.

c. Connect a source/computer to HDMI 2 input connector via a HDMI cable and USB2 connector via a USB A-B cable.

d. Connect a source/computer to HDMI 3 input connector via a HDMI cable and USB3 connector via a USB A-B cable.

e. Connect a source/computer to HDMI 4 input connector via a HDMI cable and USB4 connector via a USB A-B cable.

f. Connect the OUTPUT connector to a HDMI display device

g. Connect the audio output connector to the audio amplifier, as required.

h. Connect the keyboard and mouse to the corresponding USB connectors above the HDMI output connectors.

i. Connect the 12V/2A adapter to 12V DC connector.

5.2 Rack Mount Installation

Take the following steps to attach the two brackets to the system chassis and install into rack.

a. Remove all cables and power supply before mount the Multiview KVM Processor in the rack

b. Place the system chassis on a sturdy surface

c. Attach bracket to the left side of the system chassis by using the screw driver and four screws

d. Attach the other bracket to the right side of the system chassis by using the screw driver and four screws

e. Use your tape to measure and ensure that the supporting shelf and the chassis are installed straight and level

f. Make sure that your path to the rack is unobstructed.

g. Slide the unit into the rack and position using the attached L brackets so that the slots in the brackets are positioned over the appropriate mounting holes in the side rails of the rack

h. Securely fasten the unit into the rack by using the four screws provided in the kit. Install two of the screws on each side of the unit and tighten them with a screw driver.

6. Configurations

6.1 Front Panel Buttons

Please see the section 4.2.

6.2 Front Panel Buttons

Please see the section 4.4

6.3 KVM function

The Multiview KVM Processor can be used with a mouse and keyboard with no configuration. A mouse with scroll wheel is recommended when using the KVM function.

Connect the keyboard and mouse and hover to enable the screen you wish to work on. The top-left window, HDMI 1, is the active window in default. In quadview mode, moving the cursor to* the border of the active window propels Multiview KVM Processor to switch the active window automatically**. Multiview KVM Processor intercepts the following mouse actions.

- Scroll wheel: scrolling actions sync the coordinates between the source/computer and Multiview KVM processor.
- Middle button/Wheel double click:

A. When the current layout is in quadview mode, the middle buttion/wheel double click can bring the active window to full screen mode.

B. When the current layout is in full screen mode, middle button/wheel double click switch the layout to quadview mode.

* Depend on the setting of mouse speed and accelerations in OS on your system, you may find the active window switched before the cursor reaches the border.

**Same as other KVMs, the mouse cursors on inactive windows will remain on the screen.

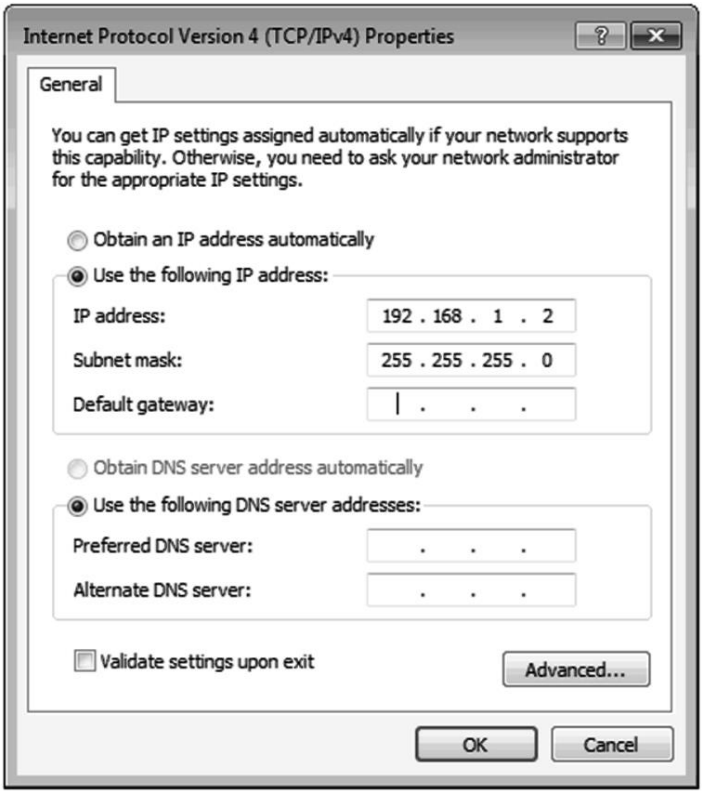
6.4 Web UI

You can connect the Ethernet directly from PC to Multiview KVM Processor.

Please follow below steps to configure your PC Ethernet setting.

6.4.1 Directly Connect to PC via Ethernet Cable

a. Click Start > Control Panel > Network and Sharing Center
b. Click “Change Adapter Settings”
c. Highlight the network adapter you want to use to connect to the device and click “Change Settings” of this connection. The “Local Area Connection Properties” window for the selected network adapter.
d. Highlight the Internet Protocol Version 4 (TCP/IPv4)
e. Click Properties. The Internet Protocol Properties window is relevant to your IT system.
f. Select “Use the following IP Address for static IP address” and fill in the details. For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.202).
g. Subnet mask fills in 255.255.255.0.
h. Click “OK”.

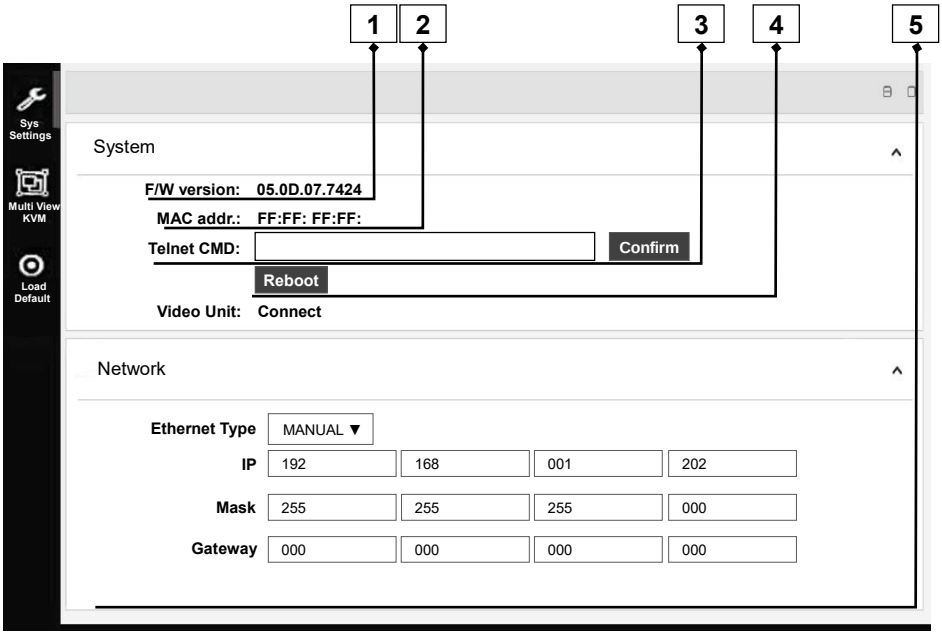


i. After successfully operating steps a. to h., you can click into Web UI by typing the 192.168.1.202 IP address in IE or Chrome.

6.4.2 Ethernet Hub or Router

At first, please follow section 6.4.1 and open web browser then follow 6.4.3 to set the Ethernet type to DHCP. You can connect the Ethernet port of the Multiview Video Process to the Ethernet port on a network hub or network router, via an Ethernet cable with RJ-45 connector.

6.4.3 System Setting Page in Web UI



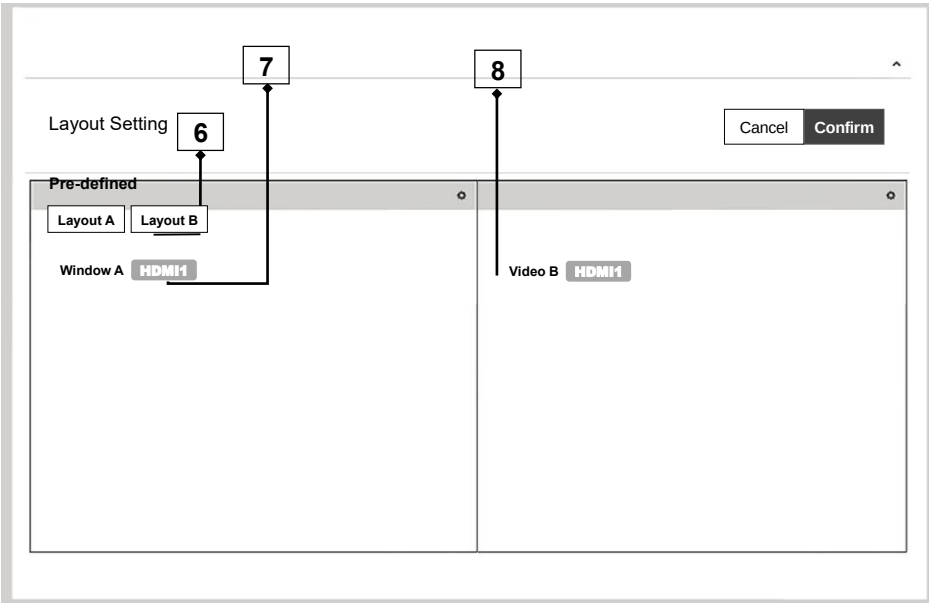
No.	Feature		Description
1	System	FW version	System firmware version
2		MAC addr.	MAC address of Multiview KVM Processor
3		Telnet CMD	Refer to sec. 6.4 for telnet commands. The response of the commands is not shown on Web UI.
4		Reboot	Reboot Multiview KVM Processor
5	Network	Ethernet Type	Change the network type to Static IP or DHCP Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.

6.4.4 Multiview Page in Web UI

No.	Feature		Description
1	Output Setting	Resolution	Select output resolution 1: Auto (default) 2: 3840x2160@60Hz 3: 3840x2160@50Hz 4: 3840x2160@30Hz 5: 1920x1080@60Hz 6: 1280x720@60Hz 7: 480p@60Hz Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.
2		Audio Source	Select audio output source 1: HDMI1 (default) 2: HDMI2 3: HDMI3 4: HDMI4 Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.

3	Full Screen Setting	Flip*	Flip video display in full screen mode 1: On 2: Off (default) Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.
4		Rotate*	Rotate video display in full screen mode 1: Off (default) 2: L90º 3: R90º Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.
5	Color Setting	Color Setting	Modify color setting 1: 50 (default) 2: 0~100 Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.

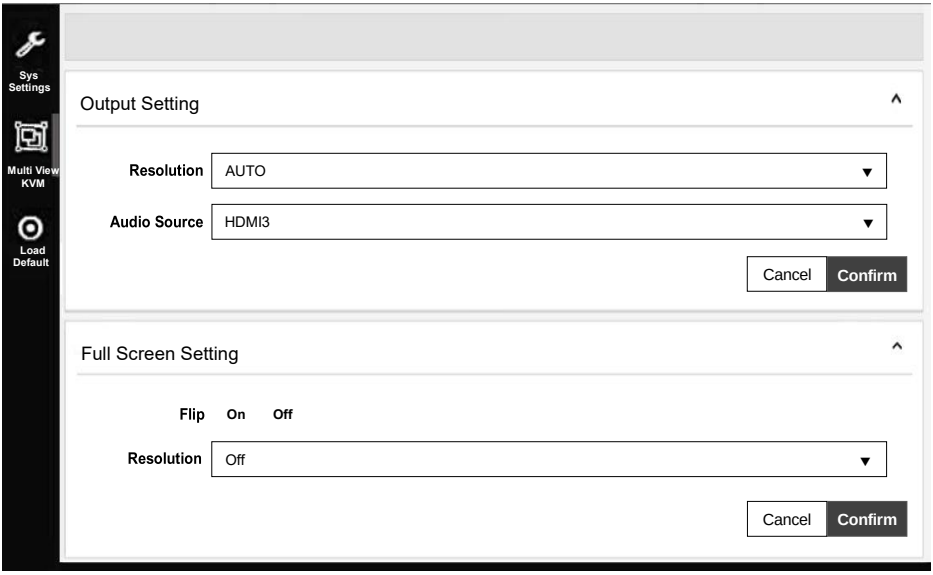
* Please find Appendix 1 on the last page



No.	Feature		Description
6	Layout Setting	Pre-defined*	Select display layout type on monitor 1: Layout A (full screen, default) 2: Layout B (quad view) Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.
7		Window Info.	Main Screen: Window A Sub Screen: Window B, Window C, Window D Window A input source: HDMI1 Window B input source: HDMI2 Window C input source: HDMI3 Window D input source: HDMI4 Press “Confirm” after setting has finished or press “Cancel” to ignore the modification.
8		Layout A Gear Icon	Select Input Source 1: HDMI1 (default) 2: HDMI2 3: HDMI3 4: HDMI4

* Please find Appendix 1 on the last page

6.4.5 Load Default in Web UI



Press to load default setting in Web UI.

6.5 RS232/TELNET

6.5.1 Serial Port Settings

Apply the following settings to set up the serial port communication.

Baud rate: 115200

Data bits: 8

Stop bits: 1

Parity: None

Flow control: None

6.5.2 Commands

Command	Description	Parameter
?/HELP	LIST ALL AVAILABLE RS-232/TELNET COMMANDS	
SPOW 0/1	SET THE UNIT POWER ON/OFF	0=OFF,1=ON
RPOW	SHOW CURRENT POWER STATE	
SRES 0~6	SET OUTPUT RESOLUTOIN	0: Auto 1: 3840x2160@60 2: 3840x2160@30 3: 1920x1080@60 4: 1280x720@60 5: 640x480@60* 6: 3840x2160@50
RRES	SHOW CURRENT OUTPUT RESOLUTION	
SIOSDD 0~2	ENABLE/DISABLE ONSCREEN INFORMATION DISPLAY	0: OFF 1: ALWAYS ON 2: Disappear after 5 sec. (DEFAULT)
SBRI N	SET BRIGHTNESS VALUE FOR OUTPUT	N=0~100, DEFAULT 50
RBRI	SHOW CURRENT BRIGHTNESS VALUE	
SCON N	SET CONTRAST VALUE FOR OUTPUT	N=0~100, DEFAULT 50
RCON	SHOW CURRENT CONTRAST VALUE	
SSAT N	SET SATURTATION VALUE FOR OUTPUT	N=0~100, DEFAULT 50
RSAT	SHOW CURRENT SATURTATION VALUE	
SHUE N	SET HUE VALUE FOR OUTPUT	N=0~100, DEFAULT 50
RHUE	SHOW CURRENT HUE VALUE	
SIMRE 0~4	RESET COLOR SETTINGS TO DEFAULT VALUES	0=ALL 1=BRIGHTNESS 2=CONTRAST 3=SATURATION 4=HUE
SIN2CH 1 M**	SET INPUT SOURCE	VIDEO N=1, 1: OUTPUT
		INPUT SOURCE M=1~4, 1:HDMI1, 2:HDMI2, 3:HDMI3, 4:HDMI4

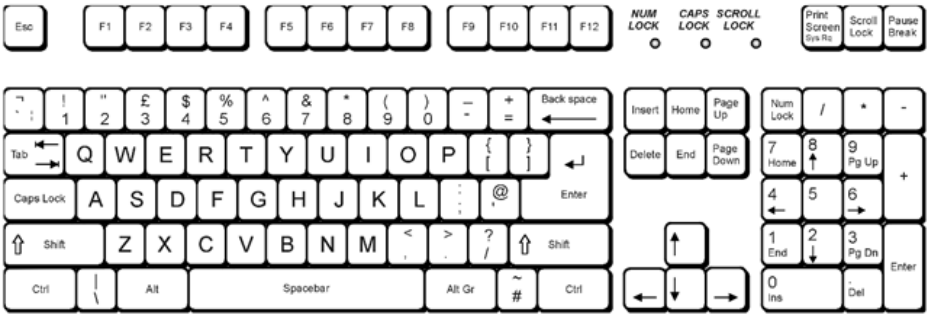
Command	Description	Parameter
SRECALL 1~2	SET LAYOUT A or B.	1 = LAYOUT A, 2 = LAYOUT B
SROTATE 0~4	SET VIDEO ROTATION SRECALL 1 MUST BE ENABLE BEFORE SROTATE	0=ROTATE OFF, 1 = L90, 2 = R90, 3 = Flip on, 4 = Flip off Default 0
RROTATE	SHOW VIDEO ROTATION CURRENT	
SIPM 0/1	SET IP MODE TO DHCP OR STATIC	0=DHCP, 1=STATIC, Default 1
RIPM	SHOW CURRENT IP MODE	
SIPADD N M X Y	SET STATIC IP ADDRESS	N=0~255, M=0~255, X=0~255, Y=0~255
RIPADD	SHOW STATIC CURRENT IP ADDRESS	
SMAADD N M X Y	SET STATIC SUBNET ADDRESS	N=0~255, M=0~255, X=0~255, Y=0~255
RMAADD	SHOW STATIC CURRENT SUBNET ADDRESS	
SGAADD N M X Y	SET STATIC GATEWAY ADDRESS	N=0~255, M=0~255, X=0~255, Y=0~255
RGAADD	SHOW STATIC CURRENT GATEWAY ADDRESS	
IPCONFIG	SHOW ETHERNET ADDRESS	
DEFAULT	RESET THE UNIT TO FACTORY DEFAULTS	
SMUTE 0/1	SET AUDIO MUTE	0=UNMUTE, 1=MUTE
RMUTE	SHOW CURRENT MUTE VALUE	
SAUDIO N	SET OUTPUT AUDIO TO SPECIFIED SOURCE	AUDIO SELECT N=1~4 1 = HDMI1, 2 = HDMI2, 3 = HDMI3, 4 = HDMI4
RAUDIO	SHOW OUTPUT AUDIO SOURCE	
RFW	SHOW FIRMWARE VERSION	
REBOOT	SYSTEM REBOOT	
READEDID	READ EDID INFO FROM SINK DEVICE	

Command	Description	Parameter
SASPECT N	SET ASPECT MODE	N=0~2 0: full (default) 1: aspect 2: 1by1
RASPECT	SHOW ASPECT MODE AFTER COMMAND	
SBF N	SET BORDER	N=0~1 0: disable (default) 1: enable
SBFC N	SET BORDER COLOR	N=0~9 0: white (default) 1: grey 2: yellow 3: blue 4: green 5: red 6: purple 7: orange 8: pink 9: black
RBF	SHOW BORDER STATUS	

* Please see Appendix 1 for the condition for this output resolution.

** This command only works on full screen (layout A).

6.6 Hotkey



6.6.1 Layout A full screen

scroll + scroll + 1 : Switch to HDMI1 and K/M to USB1

(e.g. Double click scroll lock, then click 1)

scroll + scroll + 2 : Switch to HDMI2 and K/M to USB2

to scroll + scroll + 3 : Switch to HDMI3 and K/M USB3

to scroll + scroll + 4 : Switch to HDMI4 and K/M USB4

scroll + scroll + backspac :

Switch to previous input port

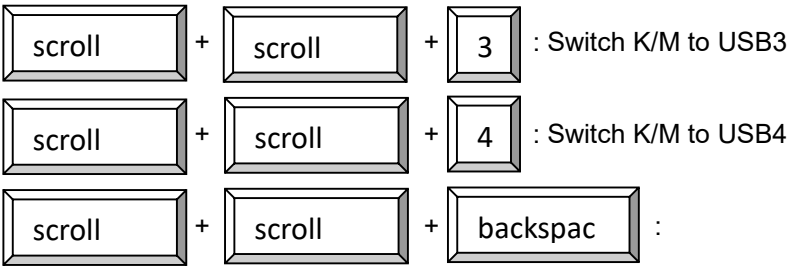
(e.g. if the last selection is HDMI4/USB4 and the current one is HDMI1/USB1, using this hotkey can switch back and forth between HDMI4/USB4 and HDMI1/USB1.)

6.6.2 Layout B quad-view

scroll + scroll + 1 : Switch K/M to USB1

(e.g. Double click scroll lock, then click 1)

scroll + scroll + 2 : Switch K/M to USB2



Switch to previous K/M port

6.6.3 Mouse hotkey

Double clip middle button to switch the layout

7. Package Contents

1) 1 x Multiview KVM Processor
2) 1 x Remote Control
3) 1 x DC 12V/2A output power adapter
4) 2 x Rack Mount Bracket
5) 4 x Rubber Pad
6) 1 x Screws bag
7) 1 x User manual

A. Appendix 1: Function NA list

Input Resolution	Layout A	Layout B	Output Resolution	Layout A	Layout B
4K60	Rotate NA	Rotate NA Flip NA	**4K60**		
4K30	Rotate NA	Rotate NA Flip NA	**4K30**		
1080p		Rotate NA Flip NA	**1080p**		
720p		Rotate NA Flip NA	**720p**		
480p		Rotate NA Flip NA	**480p**		NA

Definition of Loop Button:
Resolution will be selected in cycle based. See below

1: 3840x2160@60Hz

2: 3840x2160@50Hz

3: 3840x2160@30Hz

4: 1920x1080@60Hz

5: 1280x720@60Hz

6: 480p@60Hz(available at Layout A)

Definition of Audio Sync:
This button is to set up which source to follow for the audio output in quadview mode. Just click on the “Audio Src” to select and it’s cycle based option. When video display is in full screen mode, the audio output follow the source of full screen mode automatically but still can be selected other source to output the audio by clicking the “Audio Src” after switching to full screen mode.