

SEADA

Showing the World

SD-MV-CM61

4K@60 6X1 Multiviewer with Audio Switching

User Manual

All Rights Reserved

Version: 02

Catalogue

1.	Introduction	2
2.	Feature	2
3.	Specifications	3
4.	Operation Controls and Functions	4
4.1	Front Panel	4
4.2	Rear Panel	5
5.	Setup	6
5.1	Wiring Diagram	6
6.	Operating	7
6.1	Standby Mode and Work Mode	7
6.2	Screen layout Configuration	8
6.2.1	Single Window	10
6.2.2	Double Windows	11
6.2.3	Triple Windows	13
6.2.4	Quadruple Windows	14
6.3	Output Resolution	16
6.4	Audio Setting	17
6.4.1	Audio Input Select	17
6.4.2	Audio Outputs	18
6.5	Advanced Settings	19
6.5.1	RS232 Setting	19
6.5.2	IP Obtain	19
6.5.3	WEB Control	20
6.6	Firmware Update	36
6.7	Auto Layout	37
7.	Command List	39

1. Introduction

SD-MV-CM61 is a standard alone Multiview controller, which could accept up to 6 inputs and combine any 4 onto a multiple-window layout display at the same time. It supports HDCP, up to 4K@60 input and 4K@60 output.

It also has built-in audio switching with de-embedding in 6X1 mode, 1 SPDIF output and 1 analog output for audio processing.



2. Feature

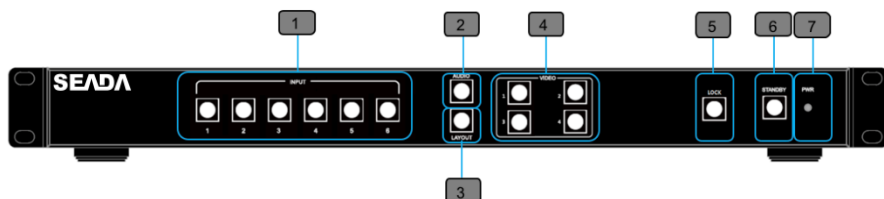
- Multiple inputs: 4 x HDMI, 2 x DisplayPort.
- Up to 4 sources on a single screen with up to 4K 60Hz input and output.
- Support various resolutions, up to 3840 x 2160 @60Hz.
- Support up to 32 layouts including 16 pre-defined layouts and 16 customizable layouts.
- HDCP 2.2 & 1.4 compliant.
- Fast input switching
- Built-in audio switching with de-embedding in 6X1 mode.
- User-friendly Web GUI.
- Support various control methods: Front panel, LAN (Web GUI, TCP) and RS232
- Support in application programming (IAP) through Web GUI (LAN) & USB port.
- 1 U Height, 19" width standard enclosure, rack mountable design.

3. Specifications

Video	
Input Interface	4 × HDMI IN, 2 x DP IN
Input Specification	HDMI: HDMI 2.0a DisplayPort: DP1.2a HDCP: HDMI 2.0, DP 1.4
Input Resolution	Up to 3840 x 2160@60Hz
Input Electrical Level	0.5-1.0 V peak to peak value
Output Interface	1 x HDMI OUT
Output Specification	HDMI 2.0
Output Resolution	Up to 3840 x 2160@60Hz
Output Impedance	100 Ω
DDC Signal	1.2 V peak to peak value
Audio	
Input Interface	6 x 3.5mm stereo jack
Output Interface	1 x 3.5mm stereo jack 1 x optical fiber terminal
General	
Power Supply	110~240V AC
Power Dissipation	15W
Control Mode	RS232, LAN
Work Temperature	0°C to 35°C (32°F to 95°F) 10% to 90%, no condensation
Storing Temperature	-20°C to 70°C (-4°F to 140°F) 10% to 90%, no condensation
Product size (L x W x H)	440mm x 272mm x 43.5mm
Product Weight	3.16kg

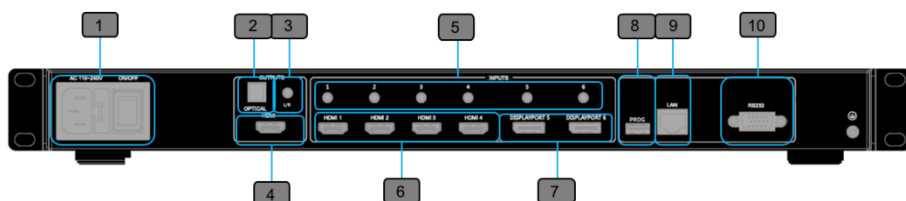
4. Operation Controls and Functions

4.1 Front Panel



ID	Name	Description
1	Input Buttons and Indicators	Press the buttons 1~6 to select the corresponding video or audio input. The indicators mean the corresponding status of the video or audio input.
2	Audio Selection Button and Indicator	Press this button, then the indicator lights up, meaning switching between audio outputs.
3	Layout Button and Indicator	Press this button and the input button 1~6 to select the first 1-6 default layout
4	Video Window Mode Button and Indicator	Video window mode selection: single window, double windows, triple windows, and quadruple windows. The indicators show which mode is on.
5	Lock	Press this button and indicator lighting up meaning all the buttons at front panel are locked until pressing this button again to unlock it.
6	Standby button and indicator	<ul style="list-style-type: none"> Switches between standby and working mode. When this device is switched to the standby mode, the indicator lights up. When this device is switched to working mode, the indicator will be off.
7	Power Indicator	Indicates when the units have power.

4.2 Rear Panel

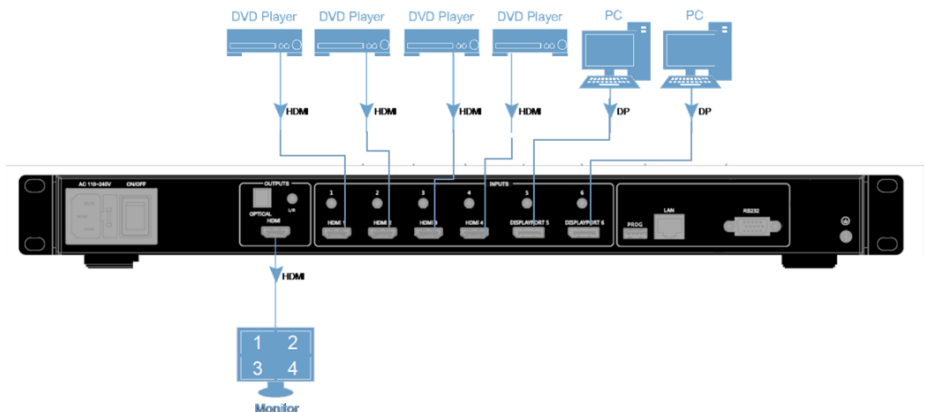


ID	Name	Description
1	Power Socket	Turn the power ON or OFF using this switch. Connect to an 110/220 AC Power electrical outlet.
2	Optical output	Connect the optical output port to the digital audio input port of your amplifier
3	Stereo audio output	2 channel analog audio output. Connect to multimedia system using cable with a 3.5mm jack
4	HDMI output	Connect to a display with HDMI cable
5	Analog audio input 1~6	2 channel stereo analog audio input, Connect a 3.5mm mini-stereo cable from the Line Out jack on the audio source to this jack.
6	HDMI input 1~4	Connect video sources to these inputs using HDMI cables.
7	DisplayPort input 1~2	Connect video sources to these inputs using DisplayPort cables.
8	USB Port	Upgrading service port
9	IP Cont.	Connect to a PC/laptop/3rd controller via a network cable for TCP/IP controlling
10	RS-232	Connect to a PC/laptop/3rd controller via a serial cable for serial commands controlling

5. Setup

1. Connect HDMI sources to the input ports (**HDMI 1 - HDMI 4**), Connect DisplayPort sources to the input ports (**DISPLAYPORT 5 - DISPLAYPORT 6**) on the SD-MV-CM61
2. Connect any analog audio inputs to 3.5mm jack sockets on SD-MV-CM61 if needed.
3. Connect a screen or any video receiver to the **HDMI Output** port on SD-MV-CM61. Make sure the HDMI output resolution is right for the receiver.
4. Connect the audio outputs of SD-MV-CM61 to any speakers or amplifiers if needed.
5. Connect an RS-232 cable from the **RS-232** port on SD-MV-CM61 to the RS-232 connector on the serial controller for controlling if needed.
6. Connect an Ethernet cable from the **LAN** port on the SD-MV-CM61 to a Local Area Network (LAN) for controlling if needed.
7. Connect the AC **power cord** to the SD-MV-CM61 and connect the plug to an available electrical outlet.

5.1 Wiring Diagram



6. Operating

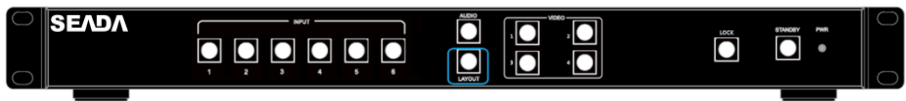
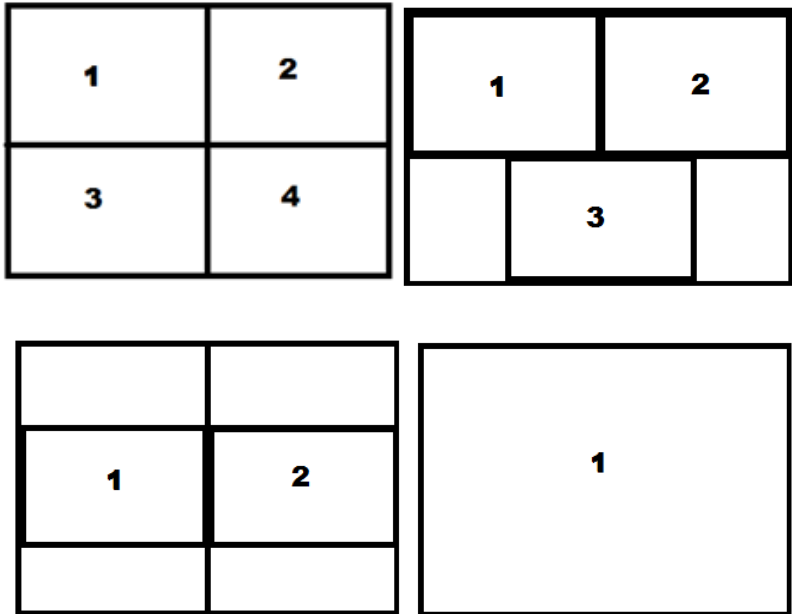
6.1 Standby Mode and Work Mode

The “**PWR**” LED next to the Standby button, on the front panel, indicates the power state of the SD-MV-CM61. This indicator will be red and remain illuminated if the power is being supplied to the SD-MV-CM61. If this indicator does not illuminate, check the connection between the power receptacle on the SD-MV-CM61 and the AC outlet.

The **Standby button** could be pressed to enter into Standby mode at any time. When Standby mode is activated, all front panel back-lit LED indicators are off, except the Standby indicator and the PWR indicators, until pressing the standby button again to wake up the unit. There are three ways to wake up the device: pressing Standby button or using Web GUI or RS232 commands.

6.2 Screen layout Configuration

SD-MV-CM61 offers four layout modes: Quadruple Windows, Triple Windows, Double Windows, and Single Window. The screen configuration is shown as follows.

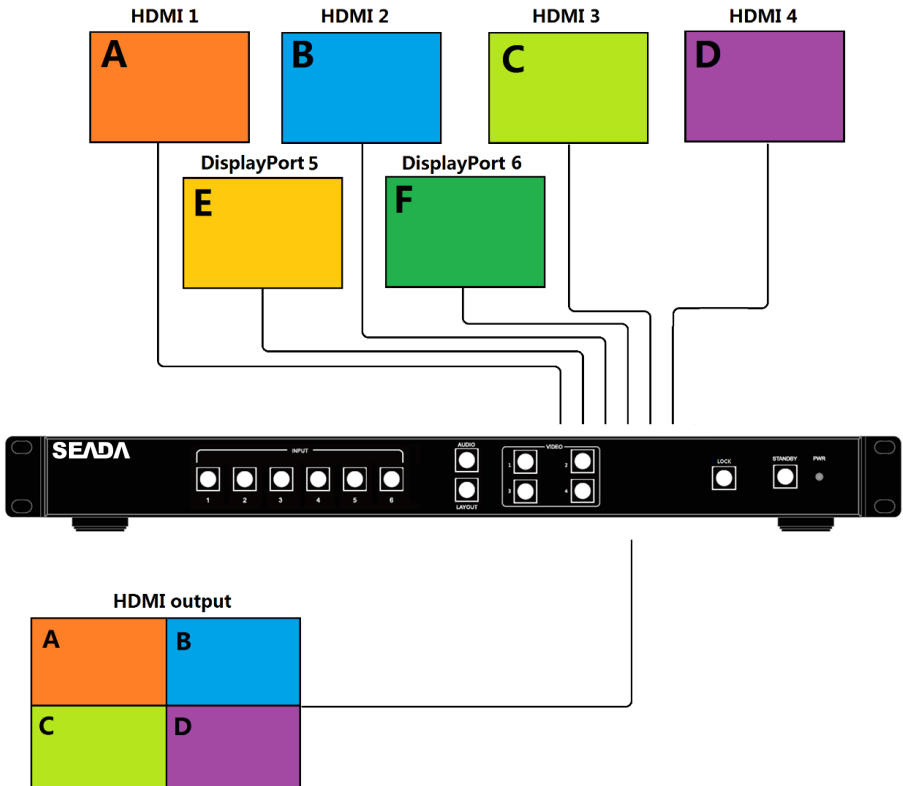


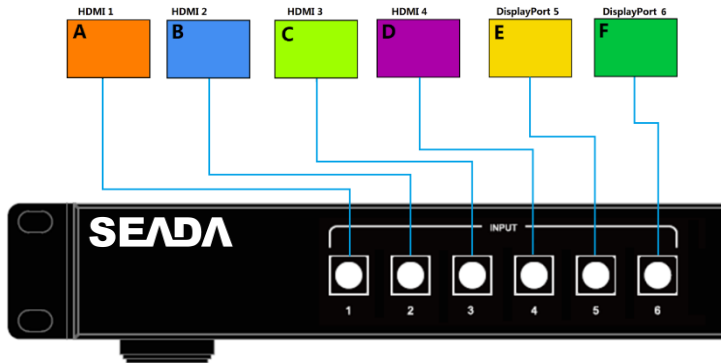
Press the combination key (LAYOUT + Input 1~6) in the Key Button of the SD-MV-CM61, corresponding to the four modes above. For example, if you want to use the mode of quadruple windows, press the button to which LAYOUT + Input 4 is displayed or the button in the remote, the button indicator on the panel lights up, the picture output to the display device through HDMI shows quadruple windows, meanwhile, video 1~4 indicators will light up.



SD-MV-CM61 4K@60 6X1 Multiviewer

SD-MV-CM61 can display up to four sources. When multiple sources are displayed on the screen, each source is regarded as a single window, and each window is defined as an input. However, we want to define the operation in the single window to introduce the basic operation before introduction to the operation in multiple windows. In the following example, six video sources (each of them is displayed as a single picture) are connected to SD-MV-CM61. When SD-MV-CM61 is delivered from the factory, the default settings are loaded automatically. (See below)





6.2.1 Single Window

- 1) Use the LAYOUT + input 1 button on the front panel to set to the single window mode, Video 1 button indicator lights up, input 1 indicator lights up.



- 2) HDMI output configures the HDMI1 input, the window is shown as follows.



- 3) If you want to switch to the signal of DisplayPort5.

Method 1: directly press the INPUTS 5 button on the front panel.

Method 2: first press Video 1 button on the front panel,

the 1 button indicator on the panel turns solid on, 2~6 button indicators are blinking (If an indicator is solid on, it means the source currently selected; If an indicator is

blinking, it means the source which can be selected), press the INPUTS 5 button on the front panel.

- 4) The input 5 button indicator lights up, the panel status is shown as follows.



- 5) HDMI output picture is changed to the signal of DisplayPort5.

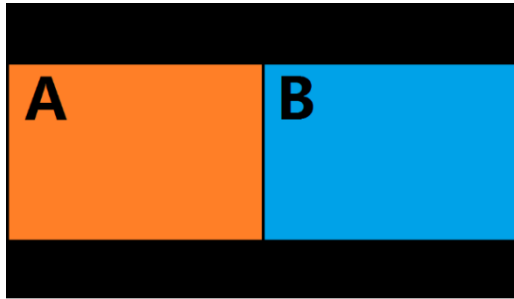


6.2.2 Double Windows

- 1) Use the LAYOUT + input 2 button on the front panel to set to the mode of double windows, Video 1 and 2 button indicators on the front panel light on.



- 2) HDMI output port outputs the mode of double windows. Window 1 is configured to HDMI1 input (HDMI1 is the factory default. It will show the last configure being used); Window 2 is configured to HDMI2 input (HDMI2 is the factory default. It will show the last configure being used). The windows are shown as follows.



- 3) For example, if you want to switch INPUT 5 to Window 1.

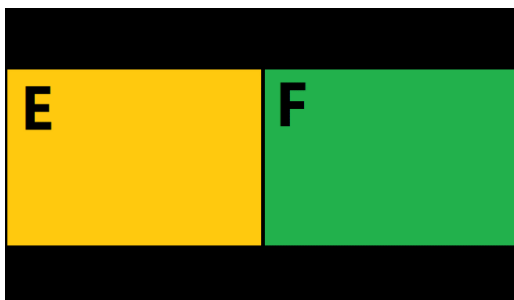
Method 1: directly press the INPUTS 5 button on the front panel, the Video 1 and 2 button indicators blink (indicates that the two buttons can be selected), press the Video 1 button on the front panel to select Window 1.

Method 2: first press the Video 1 button on the front panel, the 1 button indicator on the panel turns solid on, 2~6 button indicators are blinking (If an indicator is solid on, it means the source currently selected; If an indicator is blinking, it means this source can be selected), press the INPUTS 5 button on the front panel.

- 4) Windows 2 can select DisplayPort6 using the same method.
 5) When the INPUTS indicators are off, the panel status is shown as follows.

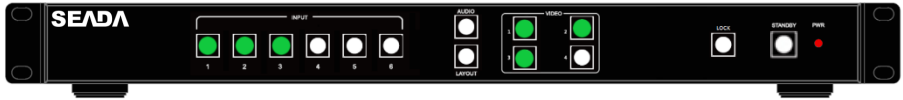


- 6) HDMI output picture is changed to the status below.

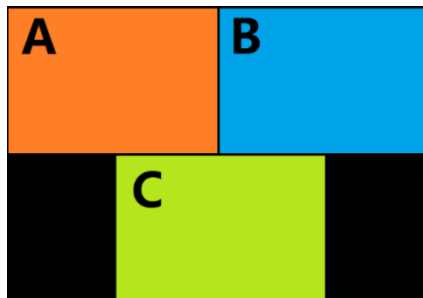


6.2.3 Triple Windows

- 1) Use the LAYOUT + input 3 button on the front panel to set to the mode of triple windows, Video 1, 2 and 3 button indicators on the front panel light up.



- 2) HDMI output port outputs the mode of triple windows. Window 1 is configured to HDMI1 input (HDMI1 is the factory default. If any changes are made, use the last configuration); Window 2 is configured to HDMI2 input (HDMI2 is the factory default. It will show the last configure being used); Window 3 is configured to HDMI3 input (HDMI3 is the factory default. It will show the last configure being used). The windows are shown as follows.



- 3) For example, if you want to switch to Window 1, and if you want to switch the signal of DisplayPort5.

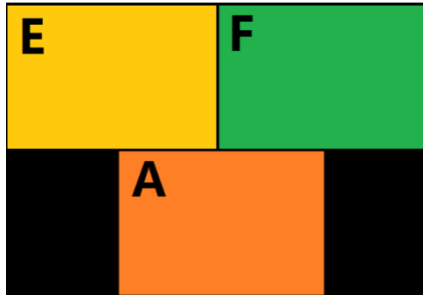
Method 1: directly press the INPUTS 5 button on the front panel, the Video 1 and 2 button indicators blink (indicates the two buttons can be selected), press the Video 1 button on the front panel to select Window 1.

Method 2: first press the Video 1 button on the front panel, the 1 button indicator on the panel turns solid on, 2~6 button indicators are blinking (If an indicator is solid on, it means the source currently selected; If an indicator is blinking, it means this source can be selected), press the INPUTS 1 button on the front panel.

- 4) In the same methods, Window 2 can select DisplayPort5, and Window 3 can select HDMI1.
- 5) When the INPUTS indicators are off, the panel status is shown as follows.

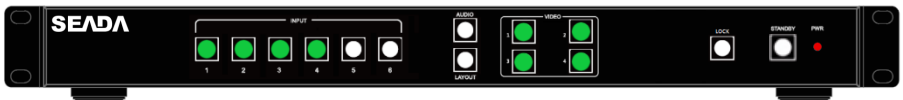


- 6) HDMI output picture is changed to the following status.

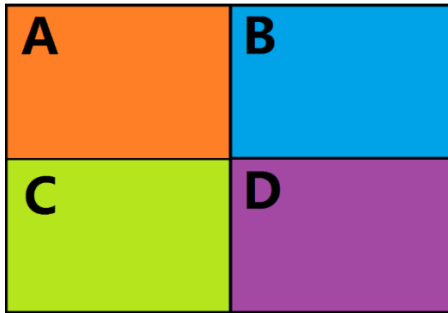


6.2.4 Quadruple Windows

- 1) Use the LAYOUT + input 4 button on the front panel to set to the mode of quadruple windows, Video 1, 2, 3 and 4 button indicators on the front panel light up.



- 2) HDMI output port outputs the mode of quadruple windows. Window 1 is configured to HDMI1 input (HDMI1 is the factory default. It will show the last configure being used); Window 2 is configured to HDMI2 input (HDMI2 is the factory default. It will show the last configure being used); Window 3 is configured to HDMI3 input (HDMI3 is the factory default. It will show the last configure being used); Window 4 is configured to HDMI4 input (HDMI4 is the factory default. It will show the last configure being used). The windows are shown as follows.



3) For example, if you want to switch to Window 1, and if you want to switch the signal of DisplayPort5.

Method 1: directly press the INPUTS 5 button on the front panel, the Video 1 and 2 button indicators blink (indicates the two buttons can be selected), press the Video 1 button on the front panel to select Window 1.

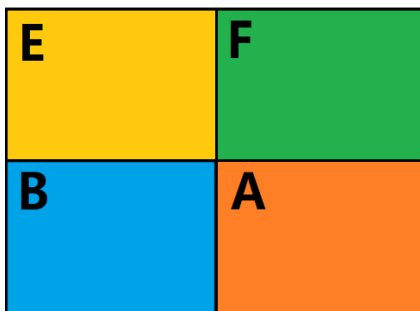
Method 2: first press the Video 1 button on the front panel, the 1 button indicator on the panel turns solid on, 2~6 button indicators are blinking (If an indicator is solid on, it means the source currently selected; If an indicator is blinking, it means this source can be selected), press the INPUTS 1 button on the front panel.

4) In the same methods, Window 2 can select DisplayPort6, Window 3 can select HDMI2, and Window 4 can select HDMI1.

5) When the INPUTS indicators are off, the panel status is shown as follows.



6) HDMI output picture is changed to the following status.



6.3 Output Resolution

HDMI output resolutions support multiple modes with the indicator indication.

- 1) Auto
- 2) 3840 x 2160 @60Hz
- 3) 3840 x 2160 @30Hz
- 4) 3840 x 2160 @24Hz
- 5) 1920 x 1200 @60Hz
- 6) 1920 x 1080 @ 60Hz
- 7) 1920 x 1080 @ 50Hz
- 8) 1600 x 1200 @ 60Hz
- 9) 1680 x 1050 @ 60HZ
- 10) 1600 x 900 @ 60Hz_R
- 11) 1400 x 1050 @60Hz
- 12) 1440 x 900 @60Hz
- 13) 1360 x 768 @60Hz
- 14) 1280 x 1024 @60Hz
- 15) 1280 x 720 @60Hz
- 16) 1280 x 800 @60Hz_R
- 17) 1280 x 768 @60Hz
- 18) 1280 x 720 @50Hz
- 19) 1024 x 768 @60Hz
- 20) 800 x 600 @60Hz

Auto means that it outputs the HDMI resolutions based on the EDID information read from the display device.

Operation method: press the Resolution buttons on the panel to switch between different HDMI output resolutions. When a resolution is selected, the corresponding indicator lights up. When selecting a resolution, HDMI output is switched to this resolution.

6.4 Audio Setting

6.4.1 Audio Input Select

When selecting the video input, the audio also has six inputs. When the video input is selected as HDMI or DisplayPort, the audio input will be from either HDMI digital audio or analog stereo audio via the 3.5mm earphone jack of the audio input, according to the priority rule as below

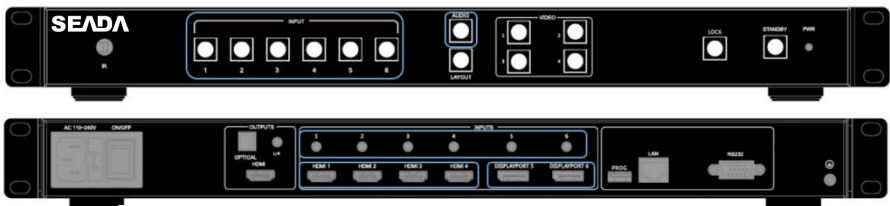
- Auto: HDMI embedded audio > External stereo audio
- External: External stereo audio input
- Internal: HDMI embedded audio

When "Auto" is selected

1. When both HDMI or DisplayPort input and analog stereo audio input have active audio, the audio input select is from HDMI or DisplayPort digital audio
2. When only HDMI or DisplayPort input have active audio, the audio input select is from HDMI or DisplayPort digital audio
3. When only analog stereo audio input has active audio, the audio input select is from the 3.5mm earphone jack of the audio input

When "External" is selected, the audio input select is from the 3.5mm earphone jack of the audio input.

When "Internal" is selected, the audio input select is from the HDMI or DisplayPort digital audio.



Operations for audio switching:

Method 1:

- (1). Press "Audio Button" (in front buttons), the corresponding button backlit indicator lights up, which means the audio output is selected. The Inputs indicator of the corresponding audio source turns solid on, the other indicators blink.
- (2). Press "Inputs Button" (in front buttons), the audio is switched to this channel. At the same time, other inputs indicator all off.
- (3). In the status mentioned in Step (2), if no further operation is performed within 5 seconds, it exists from this status.

Method 2:

- (1). Press "Inputs Button" (in front buttons), the corresponding indicator lights up, which means the audio input is selected. The "Audio Selection Button" blinks to be ready for selecting.
- (2). Press "Audio Button" (in front buttons), the input selected audio in step#1 is switched to program audio output channel. At the same time, Inputs indicator and audio indicator are off.
- (3). In the status mentioned in Step (2), if no further operation is performed within 5 seconds, it exists from this status.

Note:

- (1). Press audio button (the Inputs indicator of the corresponding audio source turns solid on, the other indicators blink) to confirm the current audio selected channel
- (2). HDMI and DisplayPort have a 3.5mm earphone jack of stereo audio, if HDMI or DisplayPort input signal with audio format, voice output is the digital audio signal, if the signal without audio format, then automatically switch to 3.5 earphone input analog stereo.

6.4.2 Audio Outputs

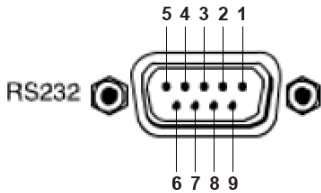
There are three methods of audio output:

- (1). HDMI output
- (2). Optical output

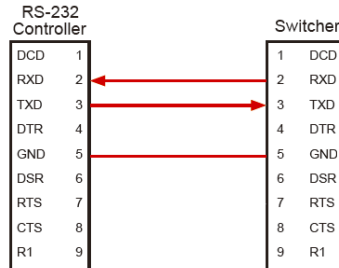
(3). Analog output, 2 channels for audio output

6.5 Advanced Settings

6.5.1 RS232 Setting



Connect to RXD, TXD, GND only



RS-232 Settings:

Description	Setting
Baud rate	115200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None

For more information about serial command lines, see the chapter of commands.

6.5.2 IP Obtain

SD-MV-CM61 supports IP control, WEB GUI、TCP and so on. The default IP address is 192.168.1.200, port:23.

If users have modified the IP address and lost it. users can obtain the IP address and port number via the information from the on-screen display (OSD). Either single window or multiple window display, users could press any input button to see the IP address and port number on main screen.

6.5.3 WEB Control

SD-MV-CM61 can be controlled via Web browser, which contains home screen, general settings, layout, EDID, Network, Advance, Update. After the LAN cables are connected, the IP address is obtained, and the SD-MV-CM61 can be controlled via browser this IP address.

Please make sure the PC/Laptop is at the static IP address which is in the same segment as SD-MV-CM61

For more information about how to obtain the IP address, see the chapter IP Setting above.



Login

For example, the obtained IP address is 192.168.1.200.

Input **http://192.168.1.200** in the address bar of the web browser.

Enter the admin account and password to enter,

Admin Account: **admin**

Admin Password: **admin**

The Admin Account Username cannot be changed by default setting. The password can be changed.

General

SEADA
SOLUTIONS FOR THE WORLD

SD-MV-CM61
4K Multiviewer

General
Layouts
EDID
Network
Advanced
Update

Video

Input Name

Input 1 Input 2 Input 3

Input 4 Input 5 Input 6

Video Input

Window 1 Window 2

Window 3 Window 4

Aspect Ratio

Window 1 Window 2 Window 3 Window 4

Output Timing

Crop Input

Crop Setting

Input Source	Enable	X	Y	Width	Height	Save Button	Status
HDMI 1	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1920"/>	<input type="text" value="1080"/>	<input type="button" value="Set"/>	Success
HDMI 2	<input checked="" type="checkbox"/>	<input type="text" value="10"/>	<input type="text" value="0"/>	<input type="text" value="3840"/>	<input type="text" value="2160"/>	<input type="button" value="Set"/>	Fail (out of range)
HDMI 3	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
HDMI 4	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
DP 5	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
DP 6	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables

Audio

Audio Input

Audio Volume

Audio Input Configuration

HDMI 1

HDMI 2

HDMI 3

HDMI 4

DP 5

DP 6

Website: www.seada.co.uk | Phone: +44 (0)1527 684364 | Fax: +44 (0)1527 682896 | Email: sales@seada.co.uk

Contain the following options.

1. Video Input Name
2. Video Input Selection
3. Aspect Ratio
4. Output Timing
5. Crop Input Setting
6. Audio Input
7. Audio Volume
8. Audio Input Config

1. Video Input Name

Input Name

Input 1	<input type="text" value="HDMI 1"/>	Input 2	<input type="text" value="HDMI 2"/>	Input 3	<input type="text" value="HDMI 3"/>
Input 4	<input type="text" value="HDMI 4"/>	Input 5	<input type="text" value="DP 5"/>	Input 6	<input type="text" value="DP 6"/>

Input signal name can be changed in this section. The default name of the inputs is HDMI1, HDMI2, HDMI3, HDMI4, DP5, DP6. After entering the new label name, click "Save" to save the setting and put it into effective.

Note:

1. Maximum 12 character.
2. When needs "Space" in the label name, please use "?" market instead, which will be translated into the "Space" after click "Save".

2. Video Input Selection

Video Input

Window 1	<input type="text" value="HDMI 1"/>	Window 2	<input type="text" value="HDMI 2"/>
Window 3	<input type="text" value="HDMI 2"/>	Window 4	<input type="text" value="HDMI 4"/>
Aspect R	<input type="text" value="HDMI 1"/>	Window 1	<input type="text" value="Normal"/>
	<input type="text" value="HDMI 2"/>	Window 2	<input type="text" value="Normal"/>
	<input type="text" value="HDMI 3"/>	Window 3	<input type="text" value="Normal"/>
	<input type="text" value="HDMI 4"/>		
	<input type="text" value="DP 5"/>		
	<input type="text" value="DP 6"/>		

Video inputs W1~W4 correspond to the video inputs of the four windows. Video

selection ranges from 1 to 6, corresponding to the six video inputs. Select the related parameters and click **Save** to save the changes.

3. Aspect Ratio

Aspect Ratio

Window 1 Window 2 Window 3 Window 4

Output Timing

Normal
 Full
 16:9
 4:3

- Normal: Set the picture in the window as the original aspect ratio
- Full: Set the picture in the window to fill the entire window
- 16:9: Set the picture in Window 1 as the 16:9 aspect ratio
- 4:3: Set the picture in Window 1 as the 4:3 aspect ratio

Select the related parameters and click **Save** to save the changes.

4. Output Timing

Output Timing

Crop

C

- Auto
- 3840x2160@60Hz
- 3840x2160@30Hz
- 3840x2160@24Hz
- 1920x1200@60Hz
- 1920x1080@60Hz
- 1920x1080@50Hz
- 1600x1200@60Hz
- 1680x1050@60Hz
- 1600x900@60Hz_R
- 1400x1050@60Hz
- 1400x900@60Hz
- 1360x768@60Hz
- 1280x1024@60Hz
- 1280x720@60Hz
- 1280x800@60Hz_R
- 1280x768@60Hz
- 1280x720@50Hz
- 1024x768@60Hz
- 800x600@60Hz

enable	X	Y
<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

HDMI output resolution selection: AUTO (auto adjustment of the output resolution based on the EDID of the display device)

3840x2160@60Hz , 3840x2160@30Hz , 3840x2160@24Hz , 1920x1200@60Hz , 1920x1080@60Hz , 1920x1080@50Hz , 1600x1200@60Hz , 1680x1050@60Hz , 1600x900@60Hz_R , 1400x1050@60Hz , 1400x900@60Hz , 1360x768@60Hz , 1280x1024@60Hz , 1280x720@60Hz , 1280x800@60Hz_R , 1280x768@60Hz , 1280x720@50Hz , 1024x768@60Hz , 800x600@60Hz, Select the related parameters, and click **Save** to save the changes.

5. Crop Input Setting

Crop Setting							
Input Source	Enable	X	Y	Width	Height	Save Button	Status
HDMI 1	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
HDMI 2	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
HDMI 3	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
HDMI 4	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
DP 5	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables
DP 6	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables

Enable: Enable/Disable the crop feature

X: the starting X position of the cropping window

Y: the starting Y position of the cropping window

Width: the width X of the cropping window

Height: the height X of the cropping window

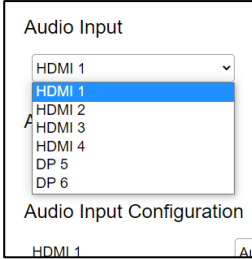
Status: enable/disable

Click the checkbox of "Enable" to start entering the Starting X, Starting Y, Width X and Height Y. After it, click "Set" to save all the setting. The status will update accordingly, including three statuses, Disable、Success、Failed.

If status shows fail, please re-check the parameter validity.

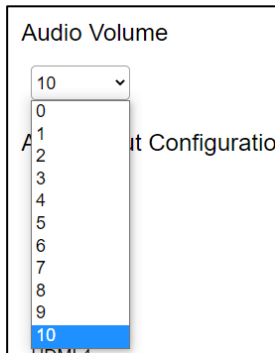
Input Source	Enable	X	Y	Width	Height	Save Button	Status
HDMI 1	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1920"/>	<input type="text" value="1080"/>	<input type="button" value="Set"/>	Success
HDMI 2	<input checked="" type="checkbox"/>	<input type="text" value="10"/>	<input type="text" value="0"/>	<input type="text" value="3840"/>	<input type="text" value="2160"/>	<input type="button" value="Set"/>	Fail (out of range)
HDMI 3	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="384"/>	<input type="text" value="216"/>	<input type="button" value="Set"/>	Disables

6. Audio Input



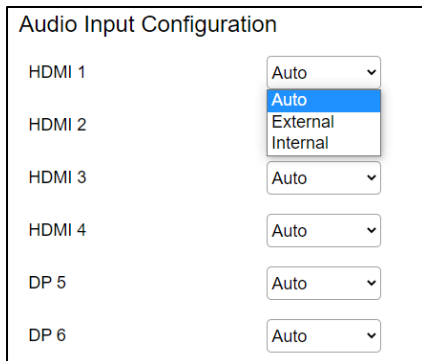
Audio input selection ranges from 1 to 6, corresponding to the different audio inputs. Select the related parameters and click **Save** to make the changes take effect.

7. Audio Volume



Output volume ranges from 0 to 10. 0 is mute, and 10 is the maximum volume. Select the related parameters and click **Save** to enable the changes.

8. Audio Input Config



Select Auto or External for each HDMI input.

- Auto: HDMI embedded audio
- External: External stereo audio input
- Internal: HDMI embedded input

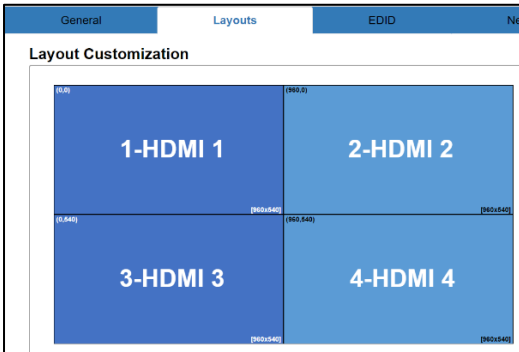
Click **Save** to make the changes take effect.

Layouts

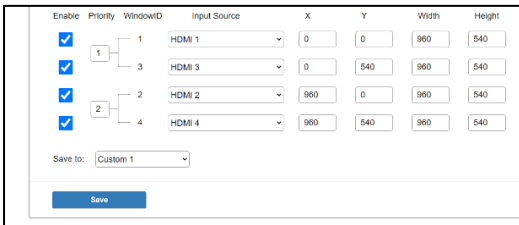
Contain the following options.

1. Layout customization
2. Layout Recall

1. Layout customization



On layout customization table, a main layout window is provided for user to drag-and-drop to form a new layout. By default, it shows a quad-viewer layout.



Below it, user could configure more items relative to these four viewer windows, including:

Enable: Enable/Disable the window display

Window: Customizable window name, max 20 character

X: Starting X

Y: Starting Y

Width: Width of Window

Height: Height of Window

After setting up the layout, users can save the current layout to any of the 16 custom layouts. The custom layout thumbnail will be updated accordingly.

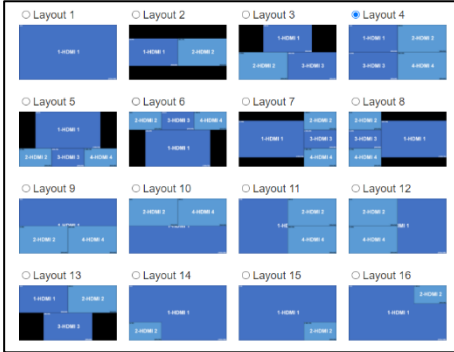
Note:

The principles of the windows layouts are as below

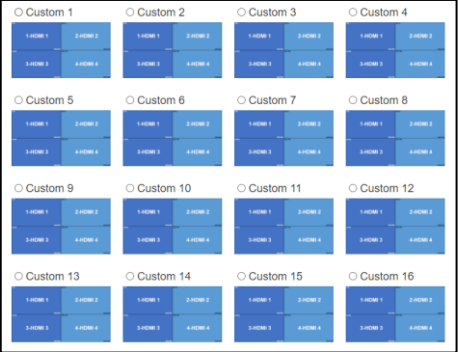
1. Window 1 and Windows 3 cannot be overlapped.
2. Window 2 and Windows 4 cannot be overlapped.

2. Layout Recall

16 fixed layouts



16 custom layouts



3. Layout Button Configuration

There are six input buttons at front panel for layout configuration, and each button can select one of 32 layouts, which is the shortcut to switch layout very quickly. Click "Save" to save the changes.

Layout Button Configuration

Input 1

Input 2

Input 3

Input 4

Input 5

Input 6

EDID

Contain the following options.

1. EDID Copy
2. EDID Upload
3. EDID Download

The screenshot shows the 'EDID' configuration page for the SEADA SD-MV-CM61 4K Multiviewer. The page has a navigation bar with tabs for General, Layouts, EDID (selected), Network, Advanced, and Update. The 'EDID Copy' section contains six rows, each for an input port (Input 1-6), with a 'Copy from' dropdown menu and a 'Save' button. The dropdowns are set to 'Internal_4K_2K_60Hz_2_ch' for HDMI inputs and 'Internal_DP_4K_2K_60Hz_2_ch' for DisplayPort inputs. The 'EDID Upload' section has a 'Select EDID File to Upload (*.bin)' dropdown set to 'No file chosen' with a 'Choose' button, and a 'Select Custom Location' dropdown set to 'Custom_1' with an 'Upload' button.

The screenshot shows the 'EDID Download' configuration page. It features a 'Select EDID File to Download' section with a note: '(Left click or Right click and save target; link as...)'. Below this, there are buttons for 'Output (EDID)', 'Input' (with buttons for Input 1 (HDMI), Input 2 (HDMI), Input 3 (HDMI), Input 4 (HDMI), Input 5 (DP), and Input 6 (DP)), and 'Custom' (with buttons for Custom 1 through Custom 6).

1. EDID Copy

This is a detailed view of the 'EDID Copy' configuration form. It consists of six rows, each representing an input port. Each row has a label for the input type (HDMI or DisplayPort), a 'Copy from' dropdown menu, and a 'Save' button. The dropdown menus are pre-filled with the following values: 'Internal_4K_2K_60Hz_2_ch' for Input 1 (HDMI), Input 2 (HDMI), Input 3 (HDMI), and Input 4 (HDMI); and 'Internal_DP_4K_2K_60Hz_2_ch' for Input 5 (DisplayPort) and Input 6 (DisplayPort).

User could select one EDID from the preset EDIDs to the certain input port, including

three default EDIDs as below

- 1) Internal_4K_2K_60Hz_2_ch
- 2) Internal_1080P_2_ch
- 3) Internal_DP_4K_2K_60Hz_2_ch

And six custom EDIDs, including Custom 1, Custom 2, Custom 3, Custom 4, Custom 5, Custom 6. And one output EDIDs
Click " Save " to save the changes.

2. EDID Upload

EDID Upload

Select EDID File to Upload (*.bin)

Select Custom Location

EDID Download

Select EDID File to Download (Left-click or Right-click and save target / link as...)

User could click "Choose File" and browser to select a prepared EDID file from local PC and select a target custom EDID position and click "Upload" to upload this EDID to the EDID package.

3. EDID Download

EDID Download

Select EDID File to Download (Left-click or Right-click and save target / link as...)

Output

Input

Custom

User could download the EDID from each port into a *.bin file to local PC/Lap-top. For example, right-click the HDMI Input 3 and click "save target/link as..." to download the EDID which is assigned on the HDMI input 3.

Network

Contain the following options.

1. Network
2. Socket

1. Network

User could select the DHCP Enable or DHCP Disable (Static IP).

DHCP Switch: ON/OFF

When DHCP is on, it does not need to enter the IP address, Subnet Mask and Gateway.

When DHCP is off, user needs to enter the IP address, Subnet Mask and Gateway.

Note: IP address format is XXX.XXX.XXX.XXX, X: 0~9.

For example, if you want to enter 192.168.1.200, you must enter 192.168.001.200, or it shows up the warning message.

After enter eth IP address, click **"Save"** to take effect.

2. Socket

TCP port: 1~65535 (except 80).

Port: (Attention: since port 80 is occupied, please use other port number).

Click **"Save"** to take effect

Advanced

Contain the following options.

1. Power
2. Auto Layout
3. Audio Mute
4. OSD Control
5. Input Label
6. Serial Port
7. Authentication
8. Other

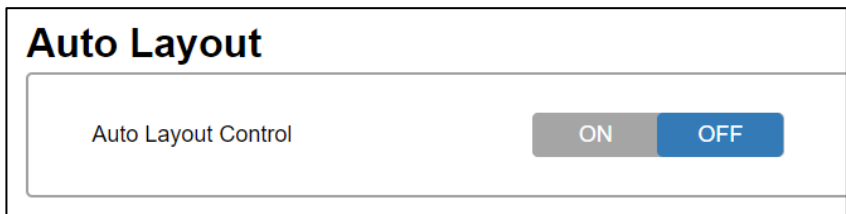
1. Power



ON: Wake up the device

OFF: Set the device to stand by.

2. Auto Layout



ON: Enable the Auto Layout function.

OFF: Disable the Auto Layout function.

See 6.7 [Auto Layout](#) for details

3. Audio Mute

Audio

Audio Mute ON OFF

Audio Delay (0~160ms)

Audio output mute setting. OFF is turning off mute, outputting the audio normally. On is enabling the mute without outputting the audio. At the same time, OSD prompts the related icons.



Audio Delay Selection

Audio output time-delay selection: 0 ~ 160ms. 0 is turning off the time-delay function. Select the related parameters and click **Save** to enable the changes.

4. OSD Control

OSD Control

Video OSD ON OFF

Audio OSD ON OFF

Network OSD ON OFF

OSD Transparency

The OSD on main screen could be switched on/off separately for the video OSD , network OSD or audio OSD, and the transparency could be configured as below.

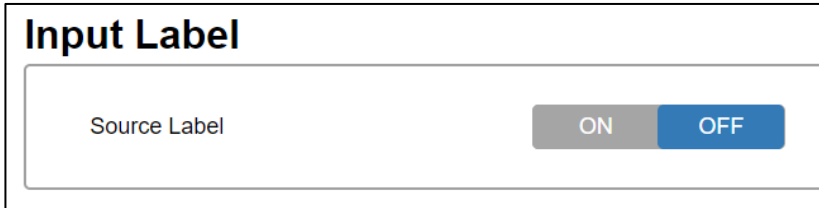
Video OSD control: Enable or disable the video OSD

Audio OSD control: Enable or disable the audio OSD

Network OSD control: Enable or disable the network OSD

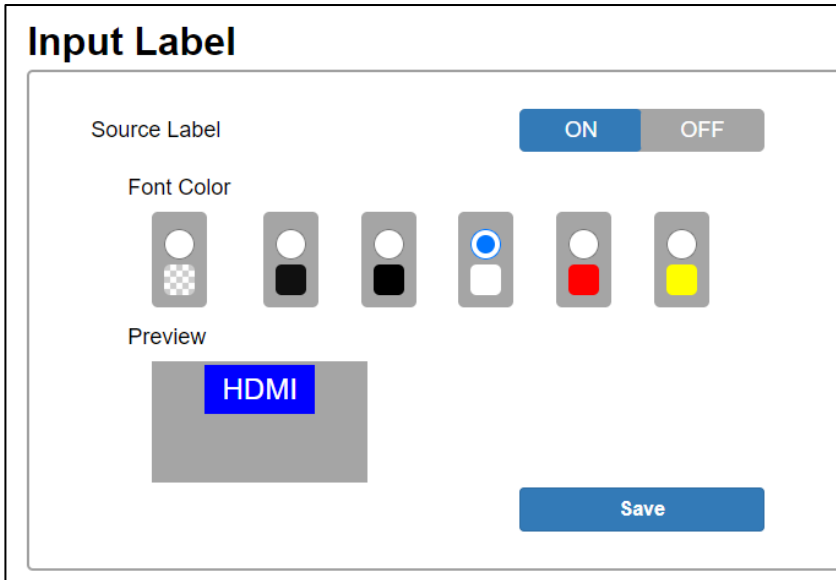
OSD Transparency: Set the level of transparency from 0 to 5. 0.

5. Input Label



OFF: Disable the Source Label.

ON: Enable the Source Label.



Change the window label font color and save it to be effect.

6. Serial Port

Serial baud-rate setting, including 9600, 14400, 19200, 38400, 57600, 115200.

The factory default setting is 115200.

Click **Save** to enable the changes.

Serial Port

Serial Baudrate	115200
Data Bits	9600
Parity	19200
Stop Bits	38400
	57600
	115200
	1
	Save

7. Authentication

Authentication

Activate Security	ON OFF
Change Password	Current
	New
	Retype New
	Change

Change the login password. After changing it, click **Change** to save the changes .

8. Other

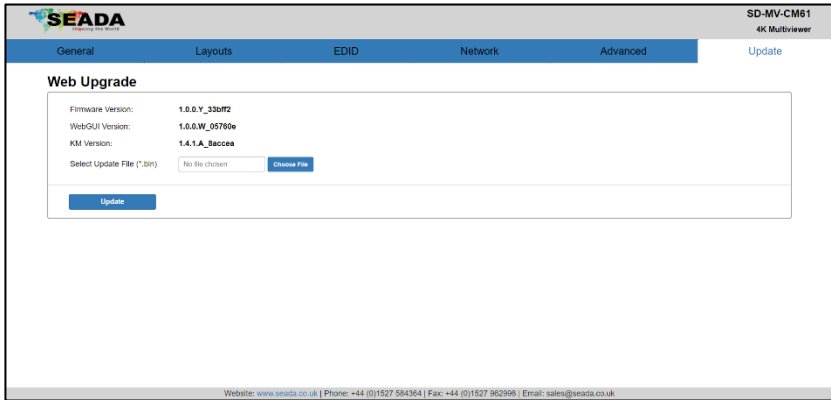
Other

Restore System Settings To Factory Default

Factory

Click button to reset to factory setting.

Update



User can update the firmware in this section.

The firmware updating instruction is

1. Click "Choose File" to select the firmware, which is going to be updated to
2. Click "**update**" button to start upgrading
3. When it finishes, the unit will re-start automatically, and return to this web-GUI again.
4. Check the current firmware number and confirm the unit is updated to the new firmware.

6.6 Firmware Update

Method 1: Upgrading via USB port

1. Copy the upgrading file "update.bin" to the root directory of the USB drive.
2. Connect the USB drive to the USB port of the REAR panel.
3. Hold-and-press the Input 1 about 5s and loosen your hand to upgrade. During the upgrading procedure, the button will be all flicker, and after successful upgrading, the screen will reboot and one of the buttons will be lighted.
4. Attention: if all buttons are off, it means that the upgrading fails. At that time, pls plug out the power cord to power cycle the unit. Next, pls repeat the above upgrading procedures.

Method 2: Upgrading via webpage

1. Connect the SD-MV-CM61 to a display device.
2. Copy the "update.bin" in the PC.
3. Enter the webpage of SD-MV-CM61 and select the Update page to select the stored "update.bin" to start the upgrading.
5. The device will re-start automatically after completing the whole upgrading progress.
6. If not successful, pls re-upgrade again.

6.7 Auto Layout

“Auto Layouts” feature provides a way to auto switch the multi-viewer layouts based on the status of four HDMI inputs. In this way, the multi-viewer will detect the plug/unplug of HDMI input signals and auto switch to the optimal layouts automatically.

The operation rules are as below:

1、When unit is powered ON, the multi-viewer will detect the status of HDMI input 1-4 to configure as single window, double windows, triple windows, and quadruple windows.

Among HDMI input 1-4,

if only one HDMI input or no HDMI input is detected currently, the display will be set as single window mode.

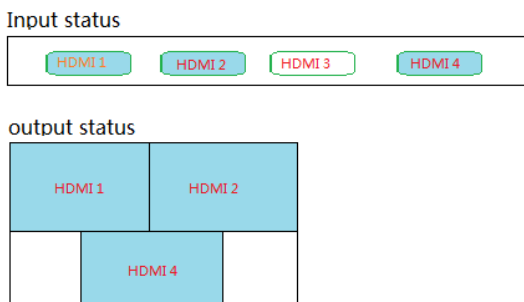
if two HDMI inputs are detected, the display will be configured as double windows mode.

if three HDMI inputs are detected, the display will be configured as triple windows mode.

if four HDMI inputs are detected, the display will be configured as quadruple windows mode.

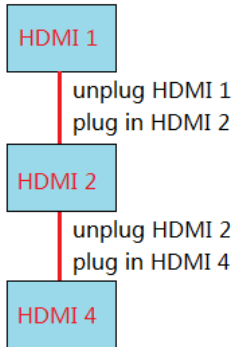
When it is configured as double/triple/quadruple windows, the priority of HDMI inputs for window1/2/3/4 is HDMI1 > HDMI2 > HDMI3 > HDMI4.

For example: When unit is powered on, if three HDMI inputs are detected, such as HDMI1, HDMI2 and HDMI4, now the display will be configured as triple windows: the source of Window1 will be set as HDMI1, the source of Window2 will be set as HMDI2, while the source of Window3 will be set as HDMI4. The diagram is as below:

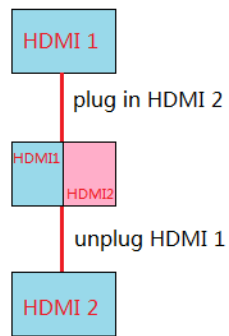


After unit is powered on, if user plug or unplug HDMI inputs cable on the back panel, the layouts will change automatically. For example, the operation rules are as the below:

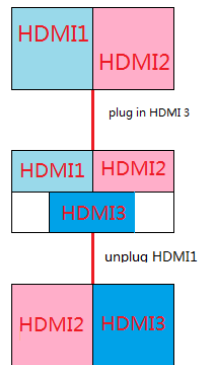
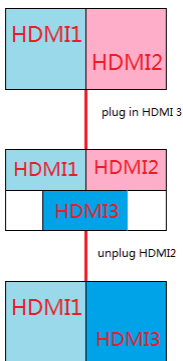
Single windows



Single windows to double windows, and double windows to single window



Double windows to triple windows, and triple windows to double windows



The rules of “triple windows to quadruple windows, and quadruple windows to triple windows” are same as double to triple and vice versa.

2、 After the unit is powered on, if user plug /unplug HDMI input cables on the back panel, and then from the front panel to switch the window input sources to another input source without plugged cable, there may be a complement action.

7. Command List

The device can send commands via RS23 or IP to control the operation

Command format:

Head: ATM

Length: 08~FF

Command: XXX_XXX (7 characters)

Read/Write: W/R

Parameter: XX (N byte)

Description	Setting
Baud rate	115200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None

Function	Item	Commands	Description
Screen Layout	Read	ATM 08 SCR_LYT R	Screen layout read
	Layout#1	ATM 0A SCR_LYT W 01	Switch to screen layout#1
	Layout#2	ATM 0A SCR_LYT W 02	Switch to screen layout#2
	Layout#3	ATM 0A SCR_LYT W 03	Switch to screen layout#3
	Layout#4	ATM 0A SCR_LYT W 04	Switch to screen layout#4
	Layout#5	ATM 0A SCR_LYT W 05	Switch to screen layout#5
	Layout#6	ATM 0A SCR_LYT W 06	Switch to screen layout#6
	Layout#7	ATM 0A SCR_LYT W 07	Switch to screen layout#7
	Layout#8	ATM 0A SCR_LYT W 08	Switch to screen layout#8
	Layout#9	ATM 0A SCR_LYT W 09	Switch to screen layout#9
	Layout#10	ATM 0A SCR_LYT W 10	Switch to screen layout#10
	Layout#11	ATM 0A SCR_LYT W 11	Switch to screen layout#11
	Layout#12	ATM 0A SCR_LYT W 12	Switch to screen layout#12
	Layout#13	ATM 0A SCR_LYT W 13	Switch to screen layout#13
	Layout#14	ATM 0A SCR_LYT W 14	Switch to screen layout#14
	Layout#15	ATM 0A SCR_LYT W 15	Switch to screen layout#15
Layout#16	ATM 0A SCR_LYT W 16	Switch to screen layout#16	

SD-MV-CM61 4K@60 6X1 Multiviewer

Video input select			
	Read	ATM 08 VDO_IPT R	Read inputs of window
Viewer 1	Select input #1	ATM 0A VDO_IPT W 1 1	Video input of Window 1 is set to 1.
	Select input #2	ATM 0A VDO_IPT W 1 2	Video input of Window 1 is set to 2.
	Select input #3	ATM 0A VDO_IPT W 1 3	Video input of Window 1 is set to 3.
	Select input #4	ATM 0A VDO_IPT W 1 4	Video input of Window 1 is set to 4.
	Select input #5	ATM 0A VDO_IPT W 1 5	Video input of Window 1 is set to 5.
	Select input #6	ATM 0A VDO_IPT W 1 6	Video input of Window 1 is set to 6.
Viewer 2	Select input #1	ATM 0A VDO_IPT W 2 1	Video input of Window 2 is set to 1.
	Select input #2	ATM 0A VDO_IPT W 2 2	Video input of Window 2 is set to 2.
	Select input #3	ATM 0A VDO_IPT W 2 3	Video input of Window 2 is set to 3.
	Select input #4	ATM 0A VDO_IPT W 2 4	Video input of Window 2 is set to 4.
	Select input #5	ATM 0A VDO_IPT W 2 5	Video input of Window 2 is set to 5.
	Select input #6	ATM 0A VDO_IPT W 2 6	Video input of Window 2 is set to 6.
Viewer 3	Select input #1	ATM 0A VDO_IPT W 3 1	Video input of Window 3 is set to 1.
	Select input #2	ATM 0A VDO_IPT W 3 2	Video input of Window 3 is set to 2.
	Select input #3	ATM 0A VDO_IPT W 3 3	Video input of Window 3 is set to 3.
	Select input #4	ATM 0A VDO_IPT W 3 4	Video input of Window 3 is set to 4.
	Select input #5	ATM 0A VDO_IPT W 3 5	Video input of Window 3 is set to 5.
	Select input #6	ATM 0A VDO_IPT W 3 6	Video input of Window 3 is set to 6.
Viewer 4	Select input #1	ATM 0A VDO_IPT W 4 1	Video input of Window 4 is set to 1.
	Select input #2	ATM 0A VDO_IPT W 4 2	Video input of Window 4 is set to 2.
	Select input #3	ATM 0A VDO_IPT W 4 3	Video input of Window 4 is set to 3.
	Select input #4	ATM 0A VDO_IPT W 4 4	Video input of Window 4 is set to 4.
	Select input #5	ATM 0A VDO_IPT W 4 5	Video input of Window 4 is set to 5.
	Select input #6	ATM 0A VDO_IPT W 4 6	Video input of Window 4 is set to 6.

Audio input select	Read	ATM 08 ADO_IPT R	Audio output read X: 1~6
	Select input #1	ATM 09 ADO_IPT W 1	Audio output is set to audio input 1
	Select input #2	ATM 09 ADO_IPT W 2	Audio output is set to audio input 2
	Select input #3	ATM 09 ADO_IPT W 3	Audio output is set to audio input 3

SD-MV-CM61 4K@60 6X1 Multiviewer

	Select input #4	ATM 09 ADO_IPT W 4	Audio output is set to audio input 4
	Select input #5	ATM 09 ADO_IPT W 5	Audio output is set to audio input 5
	Select input #6	ATM 09 ADO_IPT W 6	Audio output is set to audio input 6
Audio volume control:	Read	ATM 08 VOL_CRL R	Read Audio Volume XX: 00~10
	0	ATM 09 VOL_CRL W 0	Set audio Mute
	1	ATM 09 VOL_CRL W 1	Set audio volume value at "1"
	2	ATM 09 VOL_CRL W 2	Set audio volume value at "2"
	3	ATM 09 VOL_CRL W 3	Set audio volume value at "3"
	4	ATM 09 VOL_CRL W 4	Set audio volume value at "4"
	5	ATM 09 VOL_CRL W 5	Set audio volume value at "5"
	6	ATM 09 VOL_CRL W 6	Set audio volume value at "6"
	7	ATM 09 VOL_CRL W 7	Set audio volume value at "7"
	8	ATM 09 VOL_CRL W 8	Set audio volume value at "8"
	9	ATM 09 VOL_CRL W 9	Set audio volume value at "9"
	10	ATM 09 VOL_CRL W A	Set audio volume value at "10"
	volume increase	ATM 09 VOL_CRL W E	Increase audio volume by 1 value
	volume decrease	ATM 09 VOL_CRL W F	Decrease audio volume by 1 value
Audio volume control:	Read	ATM 09 AUD_MOD R M	M: 1~6(inputs 1~6) Port* Audio: 1(External) Port* Audio: 0(Auto)
	1	ATM 0A AUD_MOD W 1 0	Set auto audio on input No. 1
	2	ATM 0A AUD_MOD W 2 0	Set auto audio on input No. 2
	3	ATM 0A AUD_MOD W 3 0	Set auto audio on input No. 3
	4	ATM 0A AUD_MOD W 4 0	Set auto audio on input No. 4
	5	ATM 0A AUD_MOD W 5 0	Set auto audio on input No. 5
	6	ATM 0A AUD_MOD W 6 0	Set auto audio on input No. 6
	7	ATM 0A AUD_MOD W 1 1	Set external audio on input No. 1
	8	ATM 0A AUD_MOD W 2 1	Set external audio on input No. 2
	9	ATM 0A AUD_MOD W 3 1	Set external audio on input No. 3
	10	ATM 0A AUD_MOD W 4 1	Set external audio on input No. 4

SD-MV-CM61 4K@60 6X1 Multiviewer

	volume increase	ATM 0A AUD_MOD W 5 1	Set external audio on input No. 5
	volume decrease	ATM 0A AUD_MOD W 6 1	Set external audio on input No. 6

Ratio			
	Read	ATM 08 WIN_RAT R	1: NORMAL 2: FULL 3: 16:9 4: 4:3
viewer 1	normal	ATM 0A WIN_RAT W 1 1	Set the picture in Window 1 as the original aspect ratio
	full	ATM 0A WIN_RAT W 1 2	Set the picture in Window 1 to fill the entire window
	16:9	ATM 0A WIN_RAT W 1 3	Set the picture in Window 1 as the 16:9 aspect ratio
	4:3	ATM 0A WIN_RAT W 1 4	Set the picture in Window 1 as the 4:3 aspect ratio
viewer 2	normal	ATM 0A WIN_RAT W 2 1	Set the picture in Window 2 as the original aspect ratio
	full	ATM 0A WIN_RAT W 2 2	Set the picture in Window 2 to fill the entire window
	16:9	ATM 0A WIN_RAT W 2 3	Set the picture in Window 2 as the 16:9 aspect ratio
	4:3	ATM 0A WIN_RAT W 2 4	Set the picture in Window 2 as the 4:3 aspect ratio
viewer 3	normal	ATM 0A WIN_RAT W 3 1	Set the picture in Window 3 as the original aspect ratio
	full	ATM 0A WIN_RAT W 3 2	Set the picture in Window 3 to fill the entire window
	16:9	ATM 0A WIN_RAT W 3 3	Set the picture in Window 3 as the 16:9 aspect ratio
	4:3	ATM 0A WIN_RAT W 3 4	Set the picture in Window 3 as the 4:3 aspect ratio
viewer 4	normal	ATM 0A WIN_RAT W 4 1	Set the picture in Window 4 as the original aspect ratio
	full	ATM 0A WIN_RAT W 4 2	Set the picture in Window 4 to fill the entire window
	16:9	ATM 0A WIN_RAT W 4 3	Set the picture in Window 4 as the 16:9 aspect ratio
	4:3	ATM 0A WIN_RAT W 4 4	Set the picture in Window 4 as the 4:3 aspect ratio

	Read	ATM 08 OPT_TIM R	Read the current output resolution:1-20
Output Timing	Auto,	ATM 09 OPT_TIM W 01	Set the HDMI output as AUTO, outputting the

SD-MV-CM61 4K@60 6X1 Multiviewer

			resolutions based on the EDID information of the display device.
	Res_3840X2160_60	ATM 0A OPT_TIM W 02	Sets the HDMI output resolution as Res_3840X2160_60
	Res_3840X2160_30	ATM 0A OPT_TIM W 03	Sets the HDMI output resolution as Res_3840X2160_30
	Res_3840X2160_24	ATM 0A OPT_TIM W 04	Sets the HDMI output resolution as Res_3840X2160_24
	Res_1920X1200_60	ATM 0A OPT_TIM W 05	Sets the HDMI output resolution as Res_1920X1200_60
	Res_1920X1080_60	ATM 0A OPT_TIM W 06	Sets the HDMI output resolution as Res_1920X1080_60
	Res_1920X1080_50	ATM 0A OPT_TIM W 07	Sets the HDMI output resolution as Res_1920X1080_50
	Res_1600X1200_60	ATM 0A OPT_TIM W 08	Sets the HDMI output resolution as Res_1600X1200_60
	Res_1680X1050_60	ATM 0A OPT_TIM W 09	Sets the HDMI output resolution as Res_1680X1050_60
	Res_1600X900_60_R	ATM 0A OPT_TIM W 10	Sets the HDMI output resolution as Res_1600X900_60_R
	Res_1400X1050_60	ATM 0A OPT_TIM W 11	Sets the HDMI output resolution as Res_1400X1050_60
	Res_1440X900_60	ATM 0A OPT_TIM W 12	Sets the HDMI output resolution as Res_1440X900_60
Output Timing	Res_1360X768_60	ATM 0A OPT_TIM W 13	Sets the HDMI output resolution as Res_1360X768_60
	Res_1280X1024_60	ATM 0A OPT_TIM W 14	Sets the HDMI output resolution as Res_1280X1024_60
	Res_1280X720_60	ATM 0A OPT_TIM W 15	Sets the HDMI output resolution as Res_1280X720_60
Output Timing	Res_1280X800_60_R	ATM 0A OPT_TIM W 16	Sets the HDMI output resolution as Res_1280X800_60_R
	Res_1280X768_60	ATM 0A OPT_TIM W 17	Sets the HDMI output resolution as Res_1280X768_60

SD-MV-CM61 4K@60 6X1 Multiviewer

	Res_1280X720_50	ATM 0A OPT_TIM W 18	Sets the HDMI output resolution as Res_1280X720_50
	Res_1024X768_60	ATM 0A OPT_TIM W 19	Sets the HDMI output resolution as Res_1024X768_60
	Res_800X600_60	ATM 0A OPT_TIM W 20	Sets the HDMI output resolution as Res_800X600_60
Front Key Lock	Read	ATM 08 KEY_LOK R	front panel lock mode read
	0	ATM 09 KEY_LOK W 0	Switch front panel unlock mode
	1	ATM 09 KEY_LOK W 1	Switch front panel lock mode to middle, all key will be lock except lock and standby
	2	ATM 09 KEY_LOK W 2	Switch front panel lock mode to high, all key will be lock except lock
Read Windows List		ATM 08 WIN_LIS R	Check/fetch the layouts and the routing source
HDCP	Get DHCP status	ATM 08 NET_DHP R	x: 0 or 1
	Set SHCP	ATM 09 NET_DHP W 0	Set the DHCP off.
		ATM 09 NET_DHP W 1	Set the DHCP on.
IP Address	Get IP Address	ATM 08 NET_IPA R	
	Set IP Address	ATM 17 NET_IPA W XXX.XXX.XXX.XXX	X: 0~9 (Strict format, such as input 192.168.1.200 must be written 192.168.001.200)
TCP Port	Get TCP Port	ATM 08 TCP_POT R	X: 1~65535 (except 80)
	Set TCP Port	ATM 09 TCP_POT W X	Set the TCP port between 1 to 9.
		ATM 0A TCP_POT W XX	Set the TCP port between 10 to 99. (except 80)
		ATM 0B TCP_POT W XXX	Set the TCP port between 100 to 999.
		ATM 0C TCP_POT W XXXX	Set the TCP port between 1000 to 9999.
Power control	ON	ATM 09 POW_WUP W 1	When it's Power Off, set the device to power on.
	OFF	ATM 09 POW_CRL W F	When it's Power On, set the device to stand by.

SD-MV-CM61 4K@60 6X1 Multiviewer

Auto layout control	Read	ATM 08 CBL_DAL R	Read Auto Layout function status
	ON	ATM 09 CBL_DAL W 1	Enable Auto Layout function.
	OFF	ATM 09 CBL_DAL W 0	Disable Auto Layout function.
Audio Mute	Read	ATM 08 AUD_MUT R	Get audio mute status
	Set audio mute "ON"	ATM 09 AUD_MUT W 0	Set the audio output as mute
	Set audio mute "OFF"	ATM 09 AUD_MUT W F	Cancel the mute setting for the audio output
Audio delay	Read	ATM 08 AUD_DLY R	Read Audio Delay Time X: 0~160
	Set audio delay time as 0~9ms	ATM 09 AUD_DLY W X	X: 0~9 (It must be followed by 0x0D) Set the time-delay of audio output between 0ms to 9ms.
	Set audio delay time as 10~99ms	ATM 0A AUD_DLY W X	X: 10~99 (It must be followed by 0x0D) Set the time-delay of audio output as 1 step (40ms)
	Set audio delay time as 100~160ms	ATM 0B AUD_DLY W X	X: 100~160 (It must be followed by 0x0D) Set the time-delay of audio output as 2 step (80ms)
OSD control	Audio OSD on/off	ATM 09 AUD_OSD W 0	Turn on/off the audio volume and mute OSD. 0: audio OSD on; 1: audio OSD off
	Video OSD on/off	ATM 09 VDO_OSD W 0	Turn on/off the video source and IP address OSD. 0: video OSD on; 1: video OSD off
Restore Default Setting	Restore unit to default factory set	ATM 08 RST_SET W	Reset to factory default settings
Input Name	Read	ATM 09 IPT_NAM R X	X: Input 1~6 Y: name string maximum 12 characters
	Set input 1 name as Y	ATM X IPT_NAM W 1 Y	X(hex): 09+len of name string Y: name string maximum 12 characters
	Set input 2 name as Y	ATM X IPT_NAM W 2 Y	
	Set input 3 name as Y	ATM X IPT_NAM W 3 Y	e.g.
	Set input 4 name as Y	ATM X IPT_NAM W 4 Y	ATM 0A IPT_NAM W 1 a (Y: name
	Set input 5 name as Y	ATM X IPT_NAM W 5 Y	string length=01, X: 09+01=0x0A)
	Set input 6 name as Y	ATM X IPT_NAM W 6 Y	ATM 12 IPT_NAM W 1 123456789 (Y: name string

SD-MV-CM61 4K@60 6X1 Multiviewer

			length=09, X: 09+09=0x12)
OSD Transparency	Read	ATM 08 OSD_TRA R	X: 0~5
	Set OSD Transparency	ATM 09 OSD_TRA W 0	Set OSD Transparency as 0
		ATM 09 OSD_TRA W 1	Set OSD Transparency as 1
		ATM 09 OSD_TRA W 2	Set OSD Transparency as 2
		ATM 09 OSD_TRA W 3	Set OSD Transparency as 3
		ATM 09 OSD_TRA W 4	Set OSD Transparency as 4
		ATM 09 OSD_TRA W 5	Set OSD Transparency as 5
Input Label	Read	ATM 08 INP_LAB R	X:0/1 0:disable 1:enable
	Set input Label on	ATM 09 INP_LAB W 1	enable input label
	Set input Label off	ATM 09 INP_LAB W 0	disable input label
Label Font Color	Read	ATM 08 INP_FCC R	X:0~7
	Set Label Font Color	ATM 09 INP_FCC W 0	set label font color as transparent color
		ATM 09 INP_FCC W 1	set label font color as #101010
		ATM 09 INP_FCC W 2	set label font color as #000000
		ATM 09 INP_FCC W 3	set label font color as #FFFFFF
		ATM 09 INP_FCC W 4	set label font color as #ff0000
		ATM 09 INP_FCC W 5	set label font color as #00ff00
		ATM 09 INP_FCC W 6	set label font color as #0000ff
ATM 09 INP_FCC W 7	set label font color as #ffff00		
Label Background Color	Read	ATM 08 INP_BCC R	X:0~7
	Set Label Background Color	ATM 09 INP_BCC W 0	set label background color as transparent color
		ATM 09 INP_BCC W 1	set label background color as #101010
		ATM 09 INP_BCC W 2	set label background color as #000000
		ATM 09 INP_BCC W 3	set label background color as #FFFFFF
		ATM 09 INP_BCC W 4	set label background color as #ff0000
		ATM 09 INP_BCC W 5	set label background color as #00ff00

SD-MV-CM61 4K@60 6X1 Multiviewer

Baud Rate	Read	ATM 08 BAU_RAT R	Read baud rate X: 1~5
	Change the baud rate of RS232 port	ATM 09 BAU_RAT W 1	Set the rs-232 com baud rate as 9600
		ATM 09 BAU_RAT W 2	Set the rs-232 com baud rate as 19200
		ATM 09 BAU_RAT W 3	Set the rs-232 com baud rate as 38400
		ATM 09 BAU_RAT W 4	Set the rs-232 com baud rate as 57600
		ATM 09 BAU_RAT W 5	Set the rs-232 com baud rate as 115200
FW version	Get Firmware Version:	ATM 08 CSW_VER R	Read/Check the software version
Update	system update by USB	ATM 09 SYS_UPT W 1	Start the upgrading progress through USB connected with upgrading file stored inside
Crop	Get crop enable status	ATM 0A CRO_PIN R C S	S -> 1~6(input 1~6) x -> 0: disable 1: enable
	Set input crop enable status	ATM 0B CRO_PIN W C S x	S -> 1~6(input 1~6) x -> 0: disable 1: enable
	Get crop info config	ATM 0A CRO_PIN R X S	S -> 1~6(input 1~6) x,y,w,h -> Word type
	Set input crop info config	ATM 20 CRO_PIN W S Xxxxx,YYYYY,Wwwww,Hhhh h	S -> 1~6(input 1~6) x,y,w,h -> Word type
	Get crop all info config	ATM 0A CRO_PIN R E S	S -> 1~6(input 1~6) x,y,w,h -> Word type
	Set input crop all info config	ATM 25 CRO_PIN W Ee,Ss,Xxxxx,YYYYY,Wwwww, Hhhh	e -> 0: disable 1: enable s -> 1~6(input 1~6) x,y,w,h -> Word type
EDID Copy	Copy EDID to input 1 sources	ATM 0B EDI_CPY W 01 1	Option 1 (Internal_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 1.
		ATM 0B EDI_CPY W 02 1	Option 2 (Internal_1080P_2_ch) of the EDID selection lists copy to input 1.
		ATM 0B EDI_CPY W 03 1	Option 3 (Internal_DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 1.
		ATM 0B EDI_CPY W 04 1	Option 4 (Custom_1) of the EDID selection lists copy to input 1.

SD-MV-CM61 4K@60 6X1 Multiviewer

		ATM 0B EDI_COPY W 05 1	Option 5 (Custom_2) of the EDID selection lists copy to input 1.
		ATM 0B EDI_COPY W 06 1	Option 6 (Custom_3) of the EDID selection lists copy to input 1.
		ATM 0B EDI_COPY W 07 1	Option 7 (Custom_4) of the EDID selection lists copy to input 1.
		ATM 0B EDI_COPY W 08 1	Option 8 (Custom_5) of the EDID selection lists copy to input 1.
		ATM 0B EDI_COPY W 09 1	Option 9 (Custom_6) of the EDID selection lists copy to input 1.
		ATM 0B EDI_COPY W 10 1	Option 10 (HDMI Output) of the EDID selection lists copy to input 1.
	Copy EDID to input 2 sources	ATM 0B EDI_COPY W 01 2	Option 1 (Internal_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 02 2	Option 2 (Internal_1080P_2_ch) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 03 2	Option 3 (Internal_DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 04 2	Option 4 (Custom_1) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 05 2	Option 5 (Custom_2) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 06 2	Option 6 (Custom_3) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 07 2	Option 7 (Custom_4) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 08 2	Option 8 (Custom_5) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 09 2	Option 9 (Custom_6) of the EDID selection lists copy to input 2.
		ATM 0B EDI_COPY W 10 2	Option 10 (HDMI Output) of the EDID selection lists copy to input 2.

SD-MV-CM61 4K@60 6X1 Multiviewer

Copy EDID to input 3 sources	ATM 0B EDI_COPY W 01 3	Option 1 (Internal_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 02 3	Option 2 (Internal_1080P_2_ch) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 03 3	Option 3 (Internal_DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 04 3	Option 4 (Custom_1) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 05 3	Option 5 (Custom_2) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 06 3	Option 6 (Custom_3) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 07 3	Option 7 (Custom_4) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 08 3	Option 8 (Custom_5) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 09 3	Option 9 (Custom_6) of the EDID selection lists copy to input 3.
	ATM 0B EDI_COPY W 10 3	Option 10 (HDMI Output) of the EDID selection lists copy to input 3.
Copy EDID to input 4 sources	ATM 0B EDI_COPY W 01 4	Option 1 (Internal_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 4.
	ATM 0B EDI_COPY W 02 4	Option 2 (Internal_1080P_2_ch) of the EDID selection lists copy to input 4.
	ATM 0B EDI_COPY W 03 4	Option 3 (Internal_DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 4.
	ATM 0B EDI_COPY W 04 4	Option 4 (Custom_1) of the EDID selection lists copy to input 4.
	ATM 0B EDI_COPY W 05 4	Option 5 (Custom_2) of the EDID selection lists copy to input 4.
	ATM 0B EDI_COPY W 06 4	Option 6 (Custom_3) of the EDID selection lists copy to input 4.

SD-MV-CM61 4K@60 6X1 Multiviewer

			to input 4.
		ATM 0B EDI_COPY W 07 4	Option 7 (Custom_4) of the EDID selection lists copy to input 4.
		ATM 0B EDI_COPY W 08 4	Option 8 (Custom_5) of the EDID selection lists copy to input 4.
		ATM 0B EDI_COPY W 09 4	Option 9 (Custom_6) of the EDID selection lists copy to input 4.
		ATM 0B EDI_COPY W 10 4	Option 10 (HDMI Output) of the EDID selection lists copy to input 4.
	Copy EDID to input 5 sources	ATM 0B EDI_COPY W 01 5	Option 1 (Internal_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 02 5	Option 2 (Internal_1080P_2_ch) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 03 5	Option 3 (Internal_DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 04 5	Option 4 (Custom_1) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 05 5	Option 5 (Custom_2) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 06 5	Option 6 (Custom_3) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 07 5	Option 7 (Custom_4) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 08 5	Option 8 (Custom_5) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 09 5	Option 9 (Custom_6) of the EDID selection lists copy to input 5.
		ATM 0B EDI_COPY W 10 5	Option 10 (HDMI Output) of the EDID selection lists copy to input 5.
	Copy EDID to input 6 sources	ATM 0B EDI_COPY W 01 6	Option 1 (Internal_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 6.
		ATM 0B EDI_COPY W 02 6	Option 2 (Internal_1080P_2_ch) of the EDID selection

SD-MV-CM61 4K@60 6X1 Multiviewer

			lists copy to input 6.
		ATM 0B EDI_CPY W 03 6	Option 3 (Internal_DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 6.
		ATM 0B EDI_CPY W 04 6	Option 4 (Custom_1) of the EDID selection lists copy to input 6.
		ATM 0B EDI_CPY W 05 6	Option 5 (Custom_2) of the EDID selection lists copy to input 6.
		ATM 0B EDI_CPY W 06 6	Option 6 (Custom_3) of the EDID selection lists copy to input 6.
		ATM 0B EDI_CPY W 07 6	Option 7 (Custom_4) of the EDID selection lists copy to input 6.
		ATM 0B EDI_CPY W 08 6	Option 8 (Custom_5) of the EDID selection lists copy to input 6.
		ATM 0B EDI_CPY W 09 6	Option 9 (Custom_6) of the EDID selection lists copy to input 6.
		ATM 0B EDI_CPY W 10 6	Option 10 (HDMI_Output) of the EDID selection lists copy to input 6.