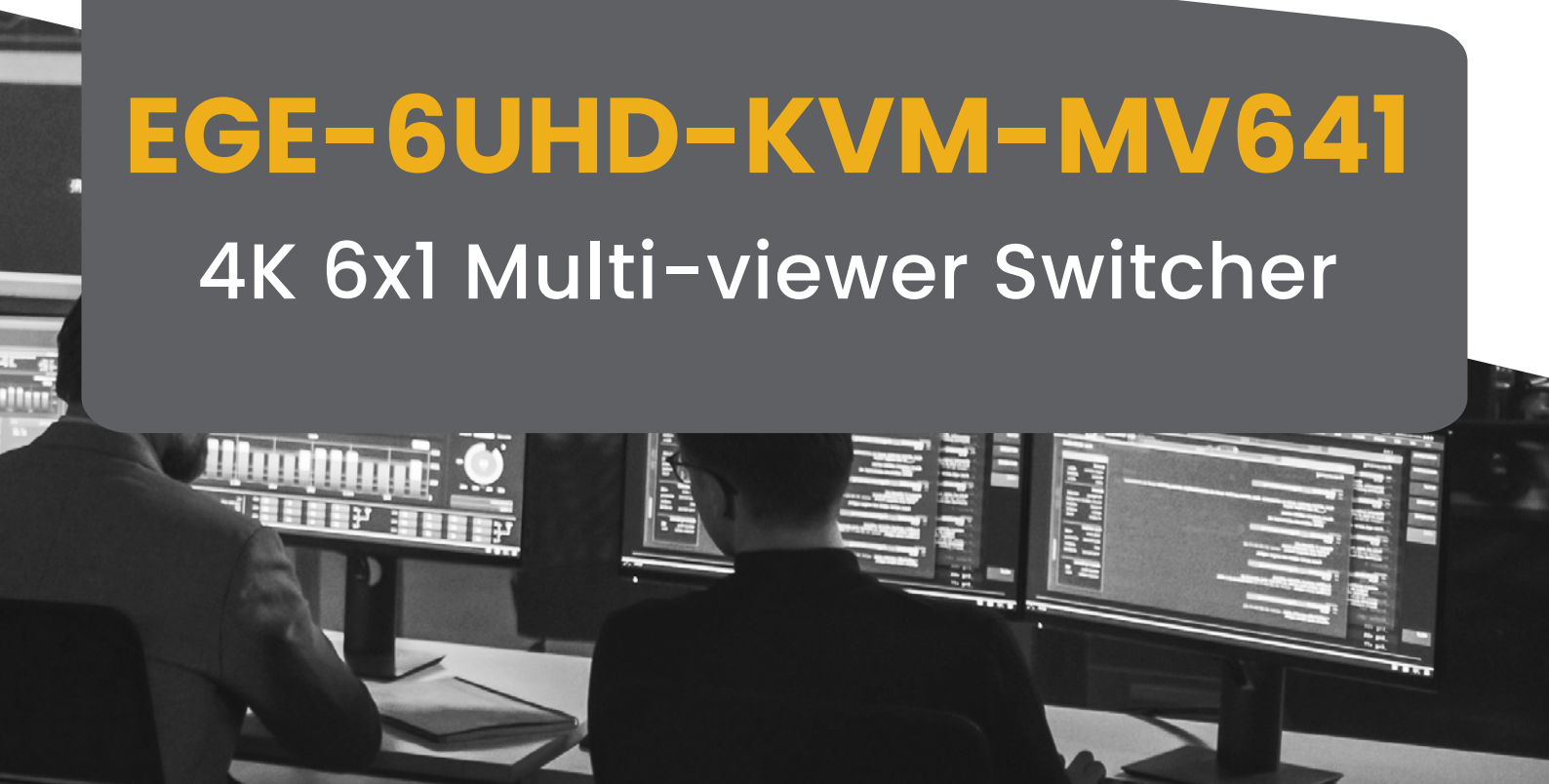
geratech®

EGE-6UHD-KVM-MV641

4K 6x1 Multi-viewer Switcher



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Product Description

MS641-2 is a standard multiview processor, which could accept up to 6 inputs and combine any 4 into a multiple-window layout display. It supports HDCP, and up to 4K input and 4K output capability, which makes it the best multi-window processor.

Feature List

- 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 WebGUI(LAN) & USB port.
- Support KVM function

Note: available on MS641KVM-2

- 1 U Height, 19” width standard enclosure, rack mountable design.

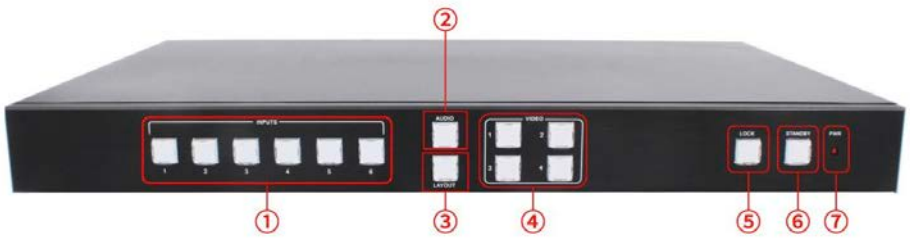
Specifications

Video	
Input Interface	4 × HDMI IN, 2 x DP IN. 2xUSB 2.0 IN (MS641KVM-2)
Input Specification	HDMI HDMI 2.0a DisplayPort: DP1.2a HDCP: HDMI 2.0, DP 1.4 USB: USB 2.0 (MS641KVM-2)
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, 6xUSB 2.0 OUT (MS641KVM-2)

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

Panel Layout

Front Panel



ID	Name	Description
1	Input Buttons and Indicator	Presses 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	Presses 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 Input Button and Indicator	Presses the buttons 1~4, indicating the corresponding windows are selected. The indicators mean whether this window is effective.

5	Video Window Mode Button and Indicator	Video window mode selection: single window, double windows, triple windows and quadruple windows. The indicators mean whether this window is effective.
6	Output Resolution Button and Indicator	Selects the related resolutions, then the indicators light up.
7	Power Indicator	Indicates when the units have power.
8	Standby button and indicator	• 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 doesn't light up.

Rear Panel (without KVM)

ID	Name	Description
1	Power Switch and 110/220 AC Power Receptacle	Turn the power ON or OFF using this switch, Connect the included AC power cord to this receptacle and connect the plug to an available 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 a 3.5mm mini-stereo cable from this jack to the Line In jack of a multimedia system.
4	HDMI output	Connect an HDMI cable from this port to an HD or 4K display
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 up to four Hi-Def sources to these inputs using HDMI cables.
7	DisplayPort input 1~2	Connect up to two Hi-Def sources to these inputs using DisplayPort cables.
8	USB Port	Upgrading service port

9	IP Cont.	Connect an Ethernet cable between this jack and a LAN to use IP control. Refer to RS-232 and IP Configuration for more information on setting up IP control.
10	RS-232	Connect an RS-232 cable from this port to an RS-232 device. See RS-232 and IP Configuration for more information on setting up RS-232 control.

Rear Panel (with KVM)

ID	Name	Description
11	USB Port	Connect the corresponding USB output to the source device 1~6, while connect the corresponding HDMI to the source device 1~6.
12	Mouse Port	Connect the USB mouse port.
13	Keyboard Port	Connect the USB keyboard port.

Installation

How to Connect MS641-2 ?

1. Connect up to four 4K or HD HDMI sources to the input ports (**HDMI 1 - HDMI 4**), Connect up to two 4K or HD DisplayPort sources to the input ports (**DISPLAYPORT 5 - DISPLAYPORT 6**) on the Multi-viewer Switcher

2. Connect an 4K or HD display to the **HDMI Output** port on the Multi-viewer Switcher

3. **OPTIONAL:** Connect the HDMI/DP input port of **HDMI/DP** cable switcher to the 4K or HD source device. Connects the HDMI/DP input port of Multi-viewer Switcher to the HDMI/DP output port of HDMI/DP cable switcher using HDMI or DP cables.

4. **OPTIONAL:** Connect four 3.5mm **mini-stereo** cables from the jacks on the Multi-viewer Switcher to the Line In jack of a multimedia system, or Connect an fiber-optic cables from the **OPTICAL** on the Multi-viewer Switcher to the Optical In of a multimedia system.

5. **OPTIONAL:** Connect an **RS-232** cable from the RS-232 port on the Multi-viewer Switcher to the RS-232 connector on the serial controller.

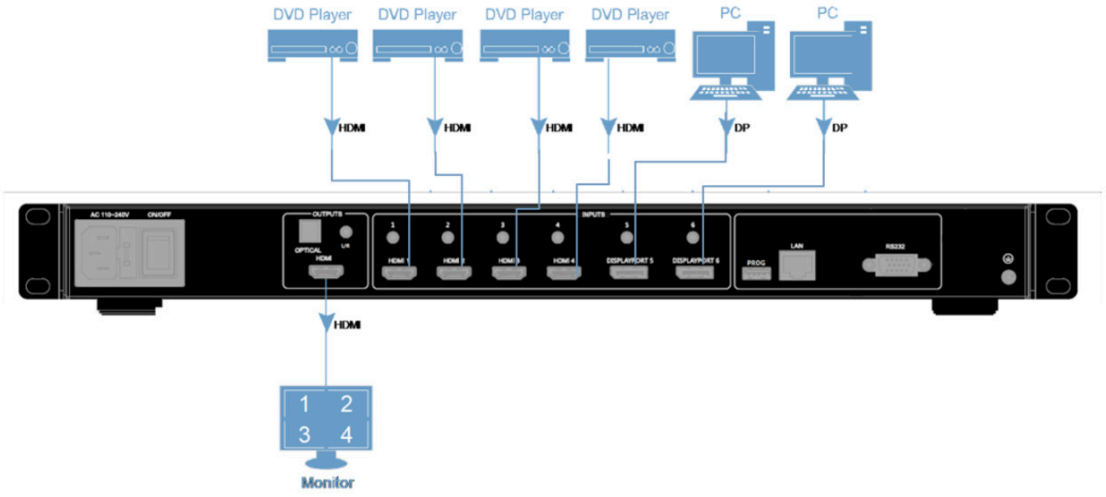
6. **OPTIONAL:** Connect an Ethernet cable from the **LAN** port on the Multi-viewer Switcher to a Local Area Network (LAN).

7. Connect the AC **power cord** to the Multi-viewer Switcher and connect the plug to an available electrical outlet.

How to Connect MS641KVM-2 ?

1. Connect up to four 4K or HD HDMI sources to the input ports **(HDMI 1 - HDMI 4)**, Connect up to two 4K or HD DisplayPort sources to the input ports **(DISPLAYPORT 5 - DISPLAYPORT 6)** on the Multi-viewer Switcher
2. Connect an 4K or HD display to the **HDMI Output** port on the Multi-viewer Switcher
3. Connect the corresponding USB output to the source device 1~6, e.g. USB 1 to HDMI Input 1 etc.
4. **OPTIONAL:** Connect the HDMI/DP input port of **HDMI/DP** cable switcher to the 4K or HD source device. Connects the HDMI/DP input port of Multi-viewer Switcher to the HDMI/DP output port of HDMI/DP cable switcher using HDMI or DP cables.
5. **OPTIONAL:** Connect four 3.5mm **mini-stereo** cables from the jacks on the Multi-viewer Switcher to the Line In jack of a multimedia system, or Connect an fiber-optic cables from the OPTICAL on the Multi-viewer Switcher to the Optical In of a multimedia system.
6. **OPTIONAL:** Connect an RS-232 cable from the **RS-232** port on the Multi-viewer Switcher to the RS-232 connector on the serial controller.
7. **OPTIONAL:** Connect an Ethernet cable from the **LAN** port on the Multi-viewer Switcher to a Local Area Network (LAN).
8. Connect the AC **power cord** to the Multi-viewer Switcher and connect the plug to an available electrical outlet.

Wiring Diagram



Operating

Standby Mode and Work Mode

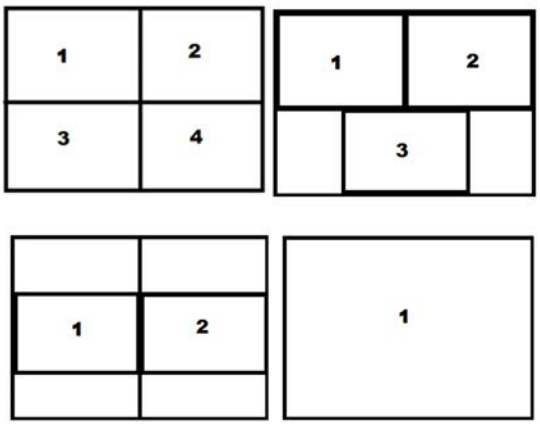
The **"PWR" LED** next to the Standby button, on the front panel, indicates the power state of the Multi-viewer Switcher. This indicator will be red and remain illuminated as long as t power is being supplied to the Multi-viewer Switcher. If this indicator does not illuminate, check the connection between the power receptacle on the Multi-viewer Switcher and the AC outlet.

The **Standby button** could be pressed to enter Standby mode at any time. When Standby mode is accessed, all front panel back-lit LED indicators are off, except the

Standby indicator and the PWR indicators, until press the standby button again to wake up the unit. Standby indicator lights up at any time. There three methods to wake up the device: pressing Standby button, or using WebGUI or RS232 commands.

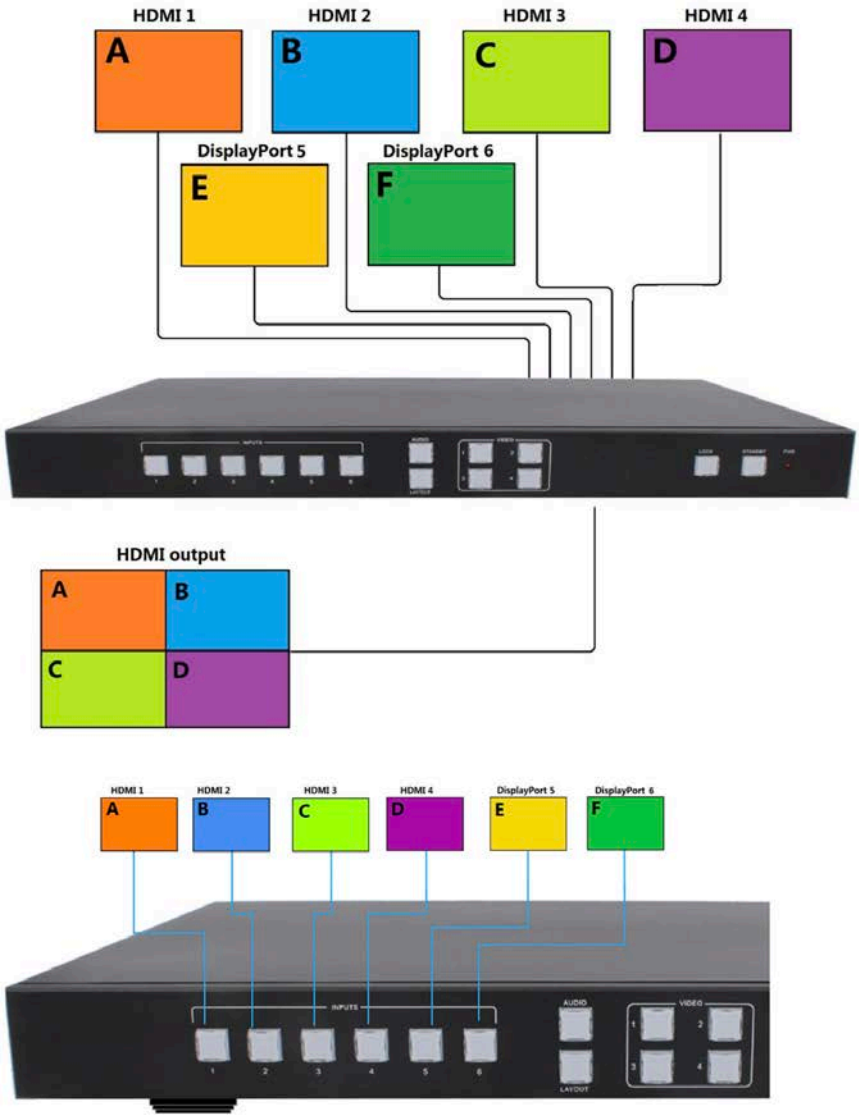
Screen layout Configuration

Multi-viewer Switcher offers quadruple window configurations: quadruple windows, triple windows, double windows and single window. The screen configuration is shown as follows.



Press the combination key (LAYOUT + Input 1~4) in the Key Button of the Multi-viewer Switcher, 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.

Multi viewer Switcher 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, seven HD sources (each of them is displayed as a single picture) are connected to Multi viewer Switcher. When Multi viewer Switcher is delivered from the factory, the default boot settings are loaded automatically. (see below)



Single Windows

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.

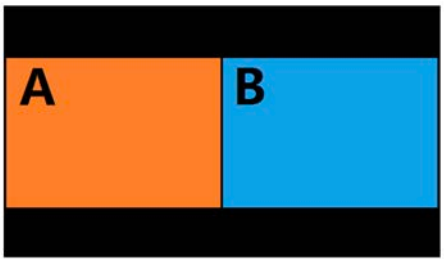
4) The input 5 button indicator lights up, the panel status is shown as follows.

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

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. If any changes are made, use the last configuration); Window 2 is configured to HDMI2 input (HDMI2 is the factory default. If any changes are made, use the last configuration). The windows are shown as follows.



3) For example, if you want to switch INPUT 5 to Window 1, and if you want to switch the signal of DisplayPort5.

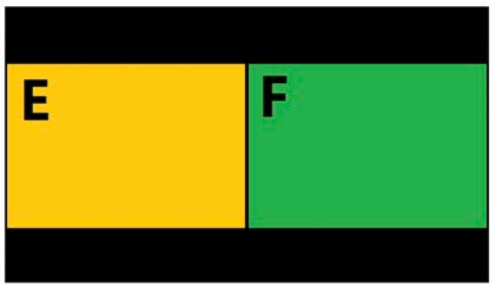
Method 1: directly press the INPUTS 5 button on the front panel, the Video 1 and 2 button indicators blink (indicates that the two buttons can be selected), press the Video 1 button on the front panel to select Window 1.

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.

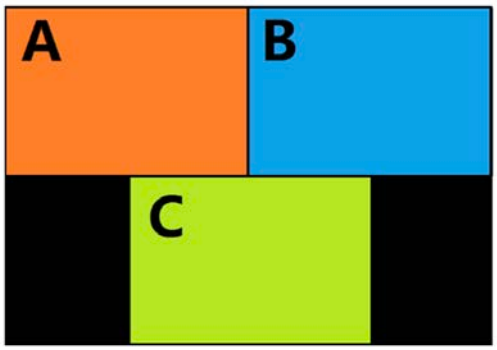
6) HDMI output picture is changed to the status below.



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. If any changes are made, use the last configuration); Window 3 is configured to HDMI3 input (HDMI3 is the factory default. If any changes are made, use the last configuration). 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.

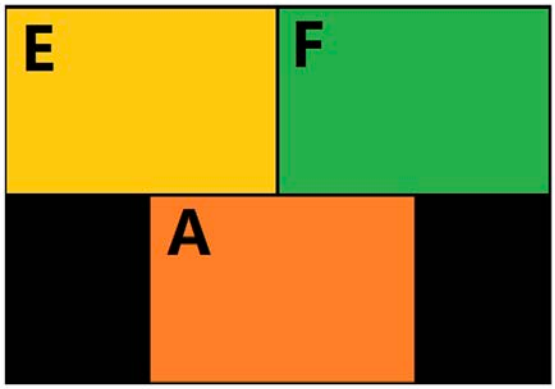
Method 1: directly press the INPUTS 5 button on the front panel, the Video 1 and 2 button indicators blink (indicates the two buttons can be selected), press the Video 1 button on the front panel to select Window 1.

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.

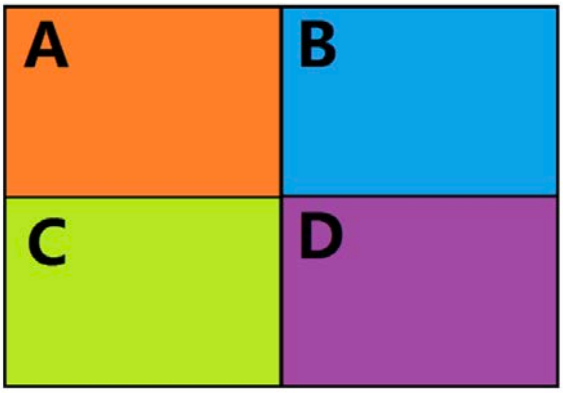
6) HDMI output picture is changed to the following status.



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. If any changes are made, use the last configuration); Window 2 is configured to HDMI2 input (HDMI2 is the factory default. If any changes are made, use the last configuration); Window 3 is configured to HDMI3 input (HDMI3 is the factory default. If any changes are made, use the last configuration); Window 4 is configured to HDMI4 input (HDMI4 is the factory default. If any changes are made, use the last configuration). 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.

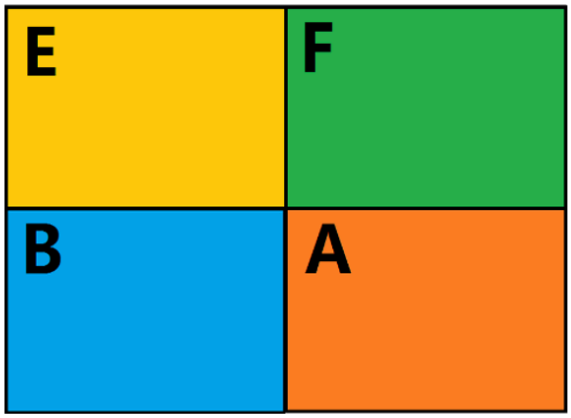
Method 1: directly press the INPUTS 5 button on the front panel, the Video 1 and 2 button indicators blink (indicates the two buttons can be selected), press the Video 1 button on the front panel to select Window 1.

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.



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.

Audio Setting

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:** External stereo audio input

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 Display 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.

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.

Notes:

(1). Press audio button, the Inputs indicator of the corresponding audio source turns solid on, the other indicators blink. Can 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.

Audio Output Instructions

There are three methods of audio output:

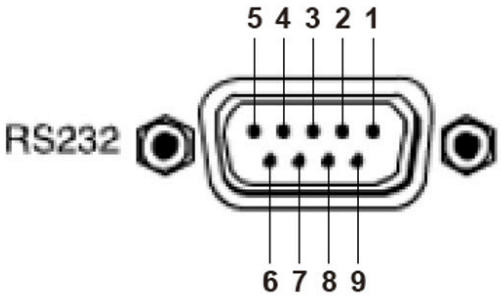
(1). HDMI output

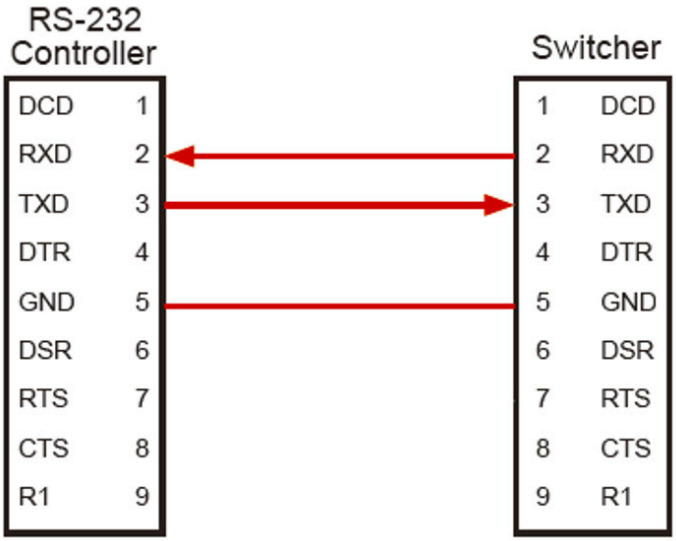
(2). Optical output

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

Advanced Settings

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

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

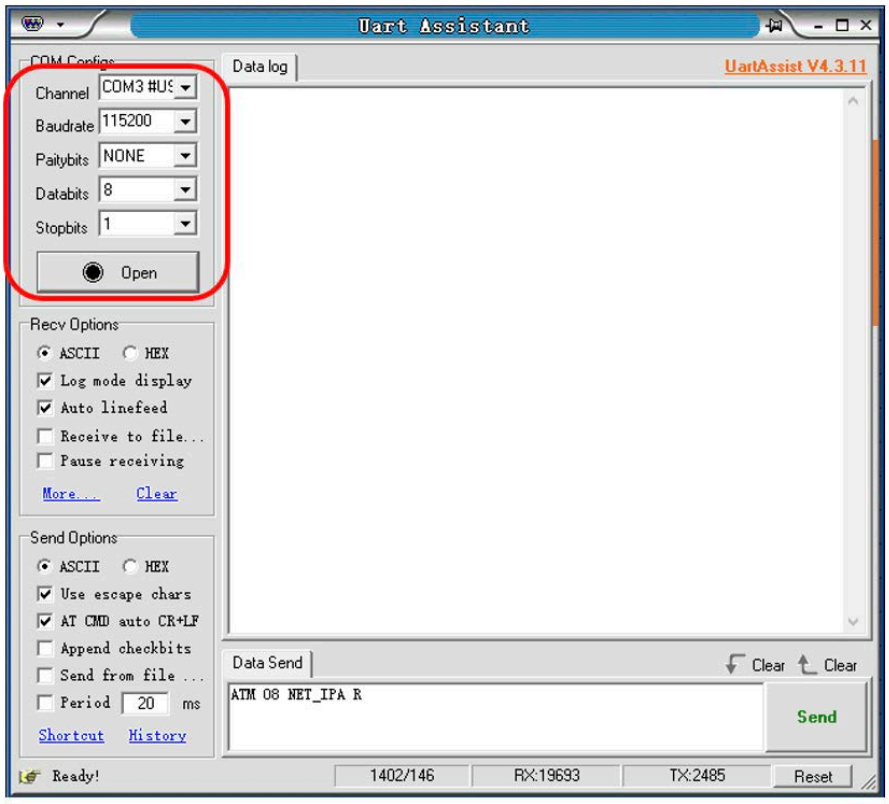
IP Obtain

MS641-2 supports IP control, WEB GUI, TCP and so on. There are two methods to obtain the IP address.

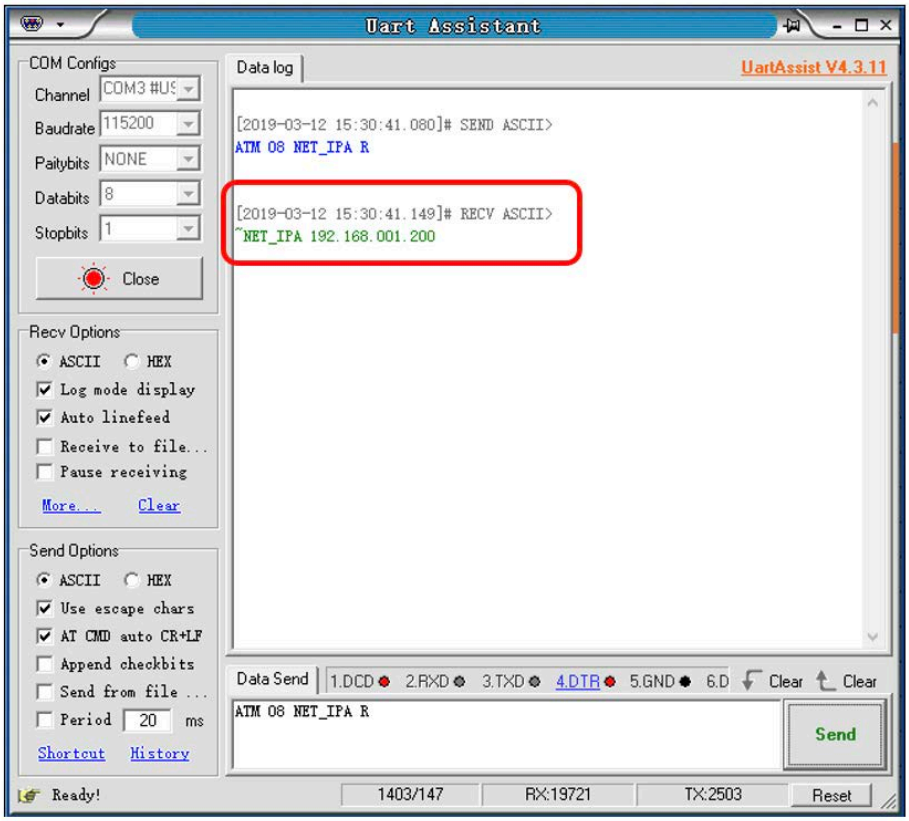
Method 1:

Obtain the IP address and port number via the information from the on-screen display (OSD).
Either single window or multiple window display, user could press any input button to see the IP address and port number on main screen as shown below.

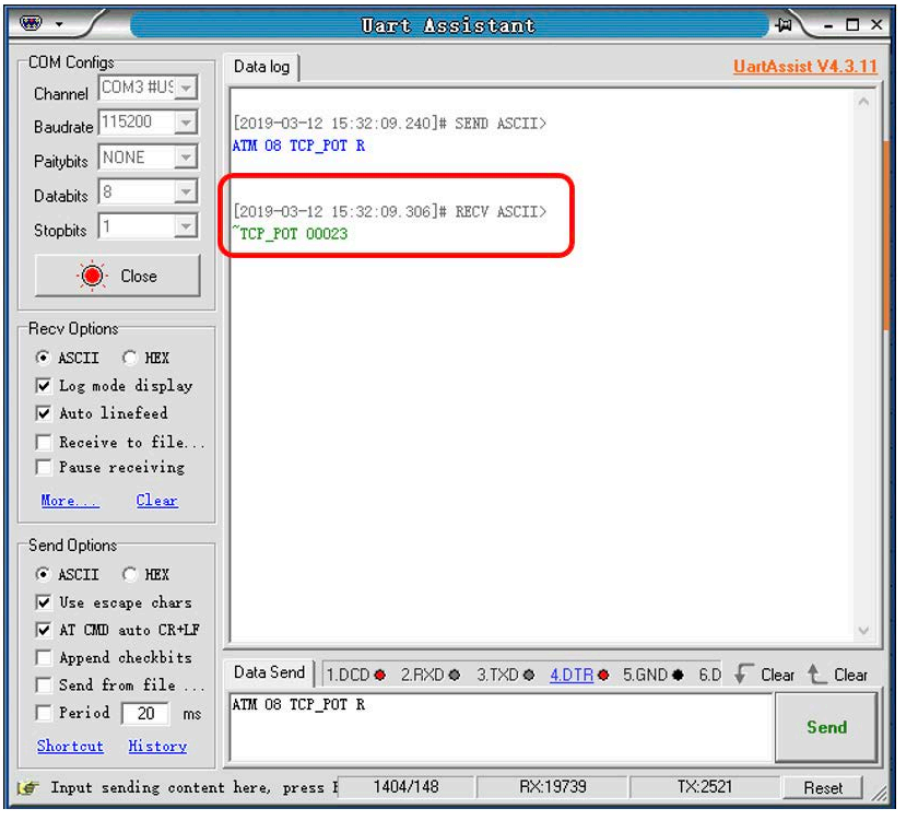
Method 2:
Obtain the IP address and port number via COM port tool.
Execute the COM port tool in the PC and the software interface is shown as follows.



Enter the series command “**ATM 08 NET_IPA R**” in the data sending window to obtain the IP address.



Enter the series command "**ATM 08 TCP_POT R**" in the data sending window to obtain the TCP portport.

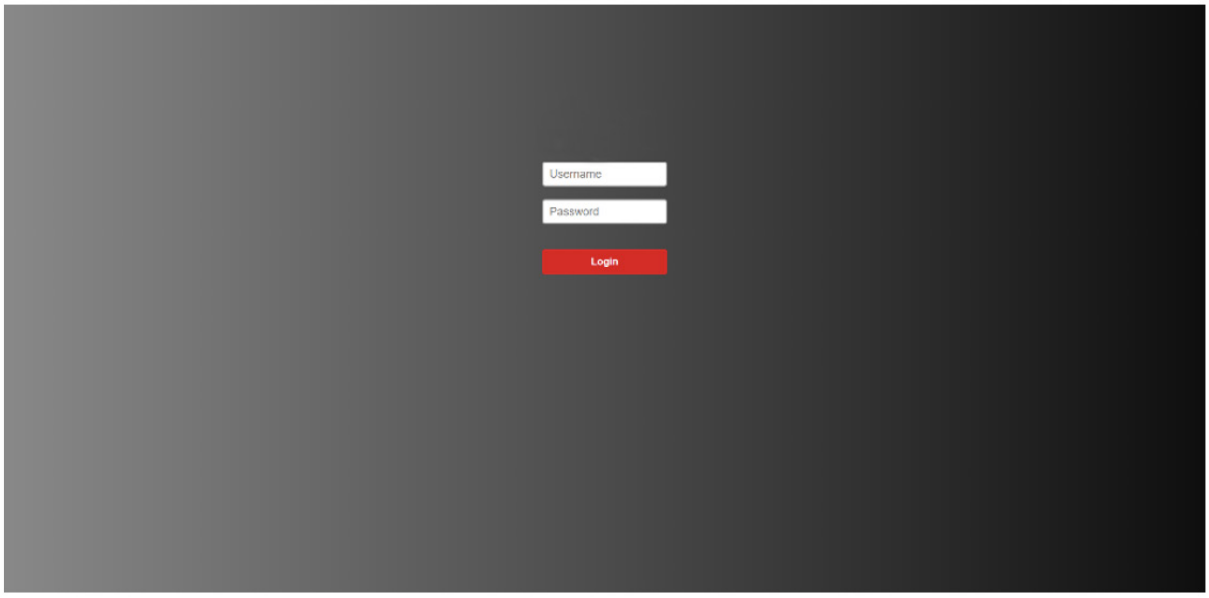


WEB Control

MS641-2 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 MS641-2 can be controlled via browser this IP address.
For more information about how to obtain the IP address, see the chapter IP Setting above.

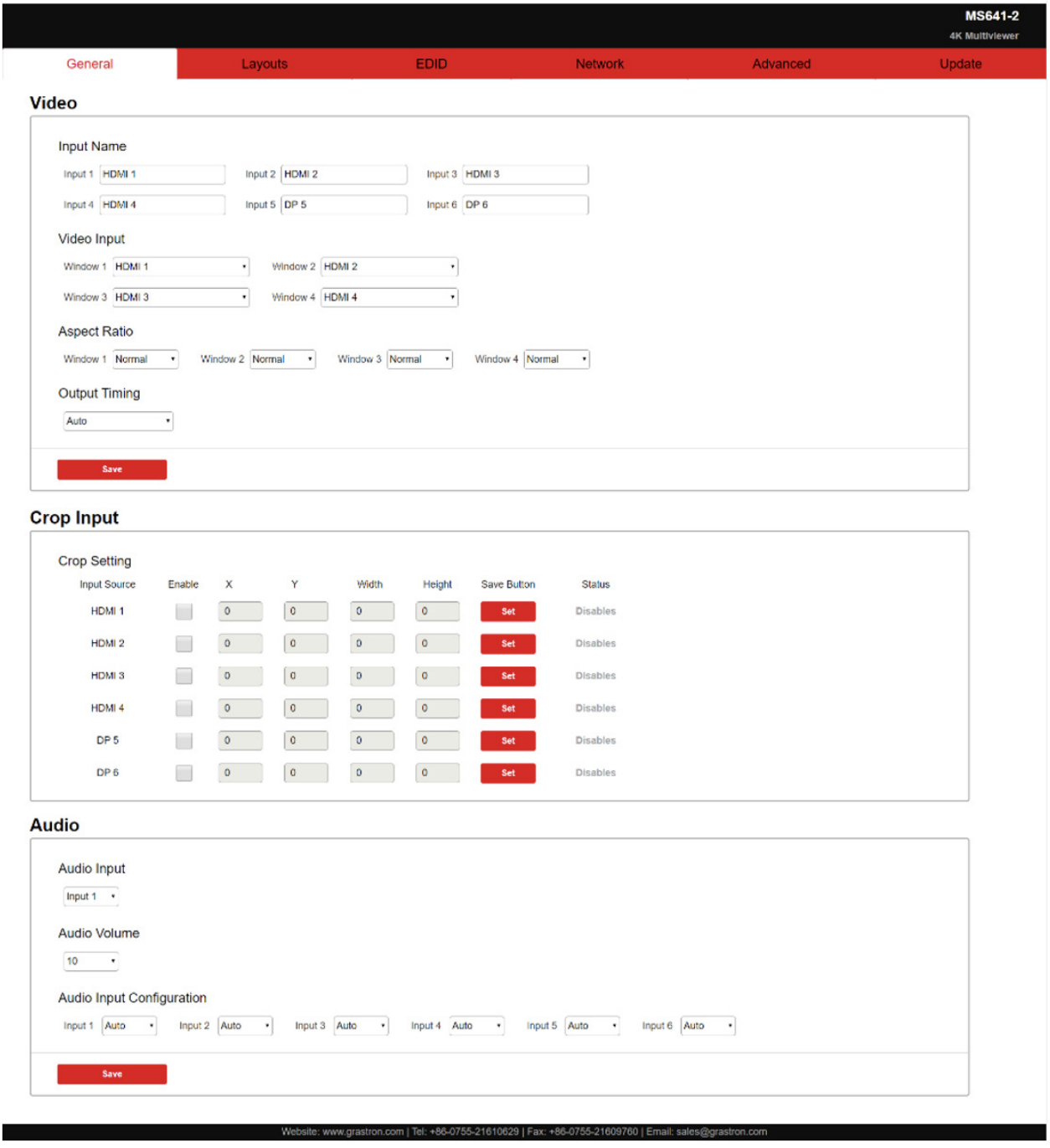
Login

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 can't be changed by default setting. The password can be changed.

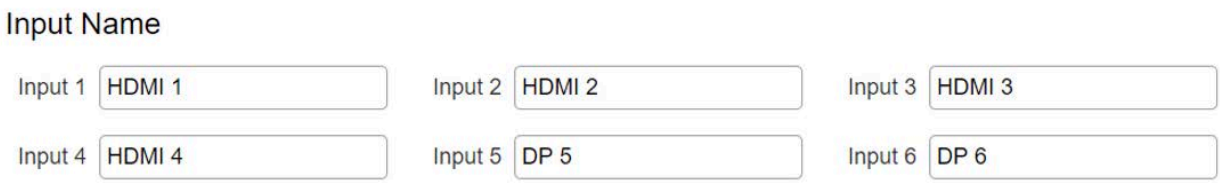
General



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

Video Input Name



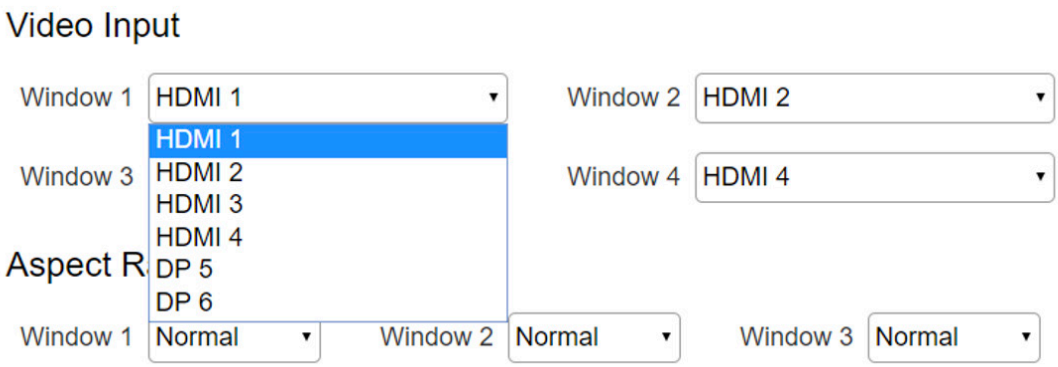
Programmable label of the source could be setting as above. The default name of the inputs are HDMI1, HDMI2, HDMI3, HDMI4, DP5, DP6. After enter the new label name, click “Save” to save the setting and put it into effective.

Attention:

1 . Maximum 12 character.

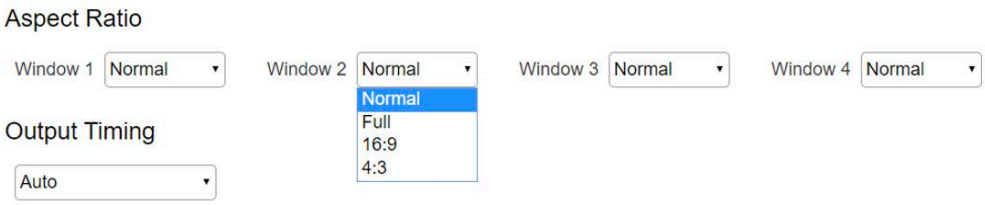
2. When needs “Space” in the label name, please use “?” market instead, which will be translated into the “Space” after click “Save”.

Video Input Selection



Video inputs W1~W4 correspond to the video inputs of the four windows. Video selection ranges from 1 to 6, corresponding to the seven video inputs. Select the related parameters, and click **Save** to make the changes take effect.

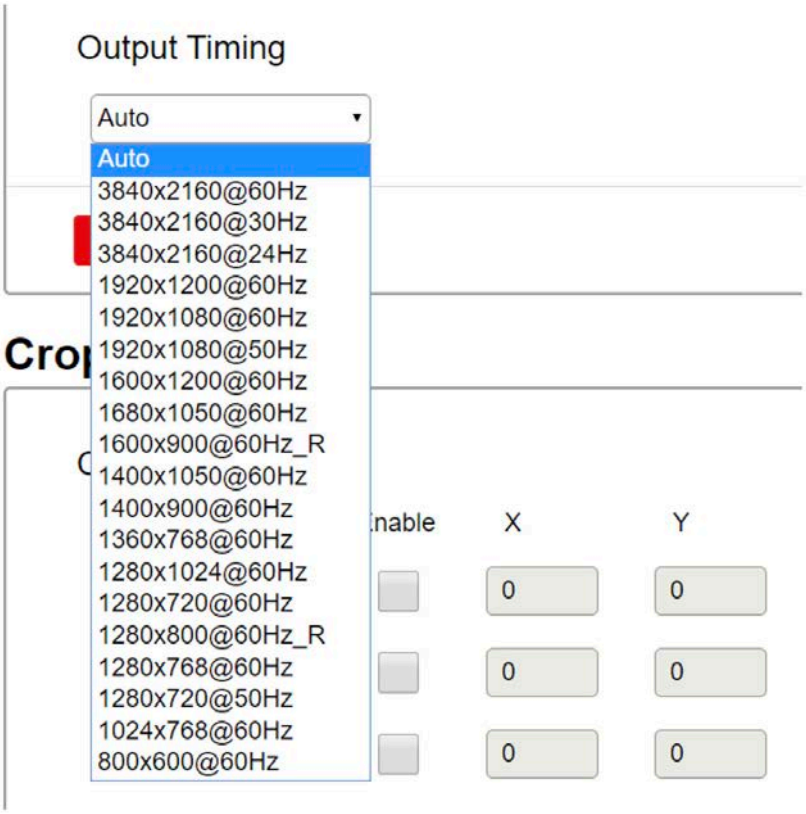
Aspect Ratio



- 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

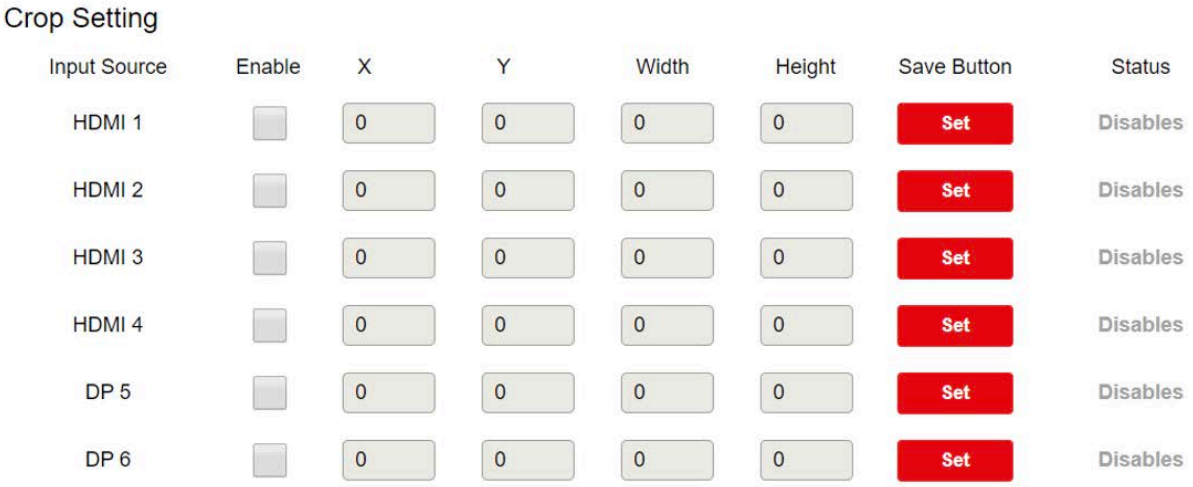
Select the related parameters, and click **Save** to make the changes take effect.

Output Timing



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 make the changes take effect.

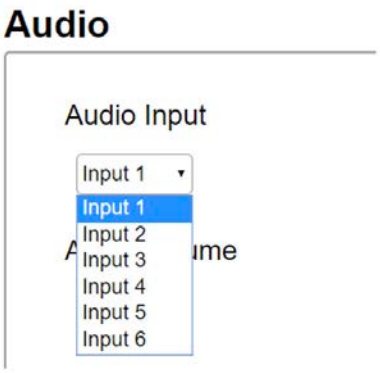
Crop Input Setting



Enable: Enable/Disable the crop feature
X: the starting X position of the cropping window
Y: the starting X 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 status, Disable, Success, Failed.
If status shows fail, please re-check the parameter validity.

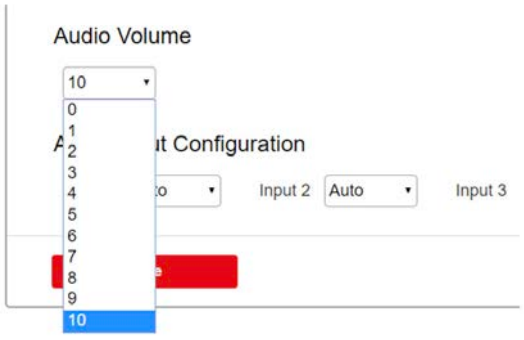
Input Source	Enable	X	Y	Width	Height	Save Button	Status
HDMI 1	☑	10	0	3840	2160	Set	Fail (out of range)
HDMI 2	☑	0	0	1920	1080	Set	Success
HDMI 3	☐	0	0	0	0	Set	Disables

Audio Input



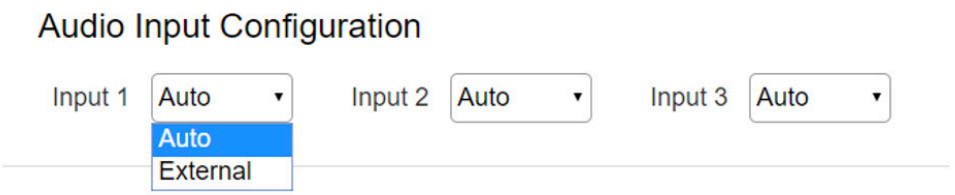
Audio input selection ranges from 1 to 6, corresponding to the seven audio inputs. Select the related parameters, and click **Save** to make the changes take effect.

Audio Volume



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

Audio Input Config



Select Auto or External for each HDMI input.

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

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

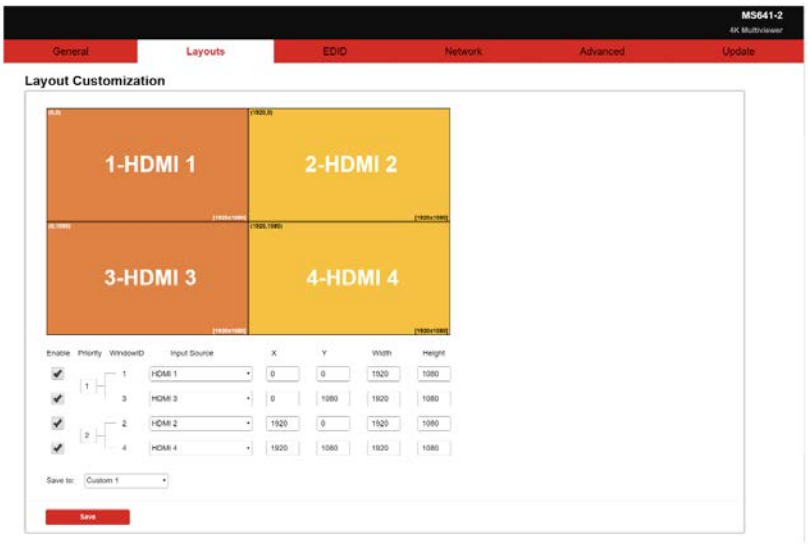
Layouts

Contain the following options.

1. Layout customization

2. Layout Recall

Layout customization



On layout customization table, a main layout window is provide for user to drag-and-drop 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 changed the layout, user could save the current layout to any of the custom layout 1-16. The custom layout thumbnail will be updated accordingly.

Attention: The principle of the windows layouts is as below

1. Window 1 and Windows 3 can't be overlapped.

2. Windows 2 and Windows 4 can't be overlapped.

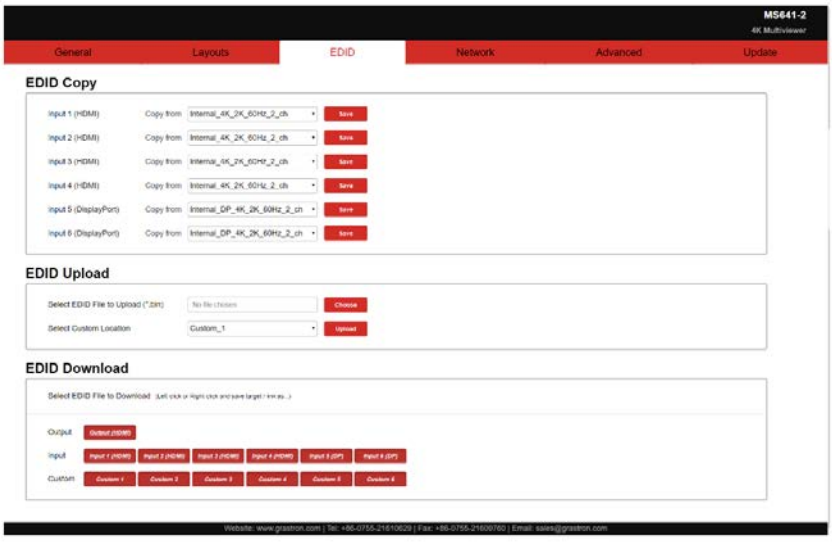
Layout Recall

Layout 1-16 is default layouts, which can't be customizable.
Custom 1-16 is customizable layouts, which can be re-write by re-saving the newly customized layouts.

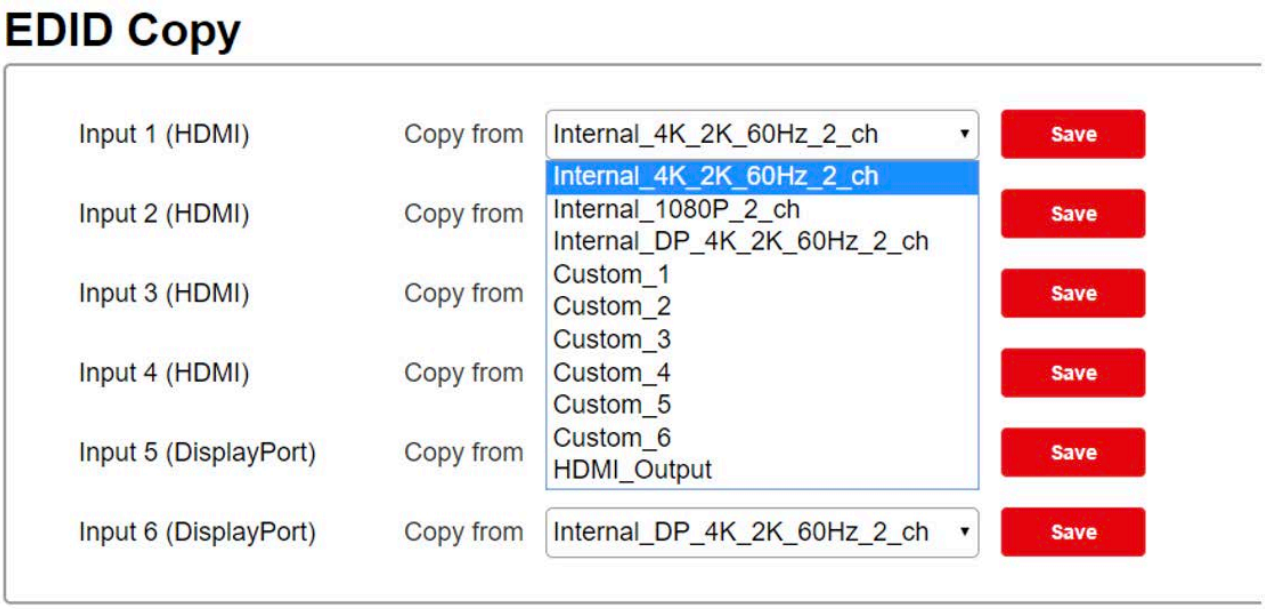
EDID

Contain the following options.

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



EDID Copy



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

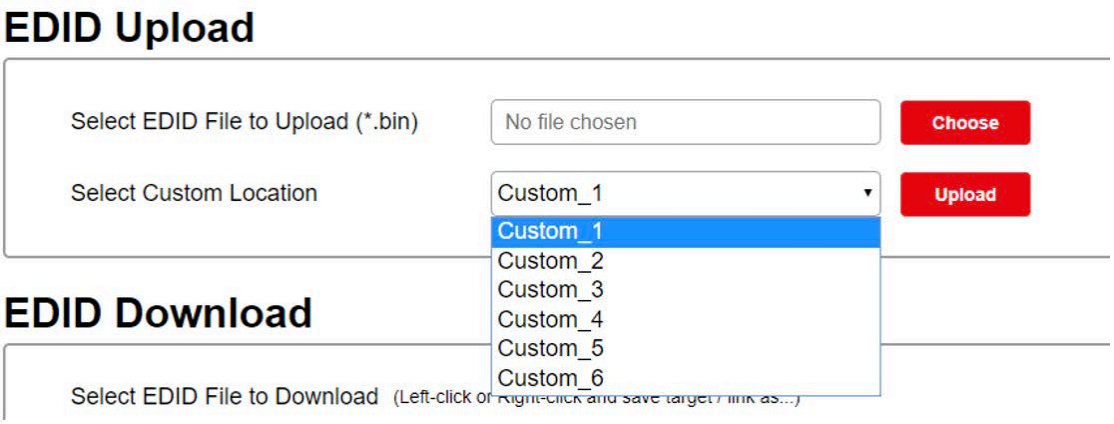
3) Internal_DP_4K_2K_60Hz_2_ch

And six custom EDIDs, including Custom 1, Custom 2, Custom 3, Custom 4, Custom 5, Custom 6

And one output EDIDs

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

EDID Upload

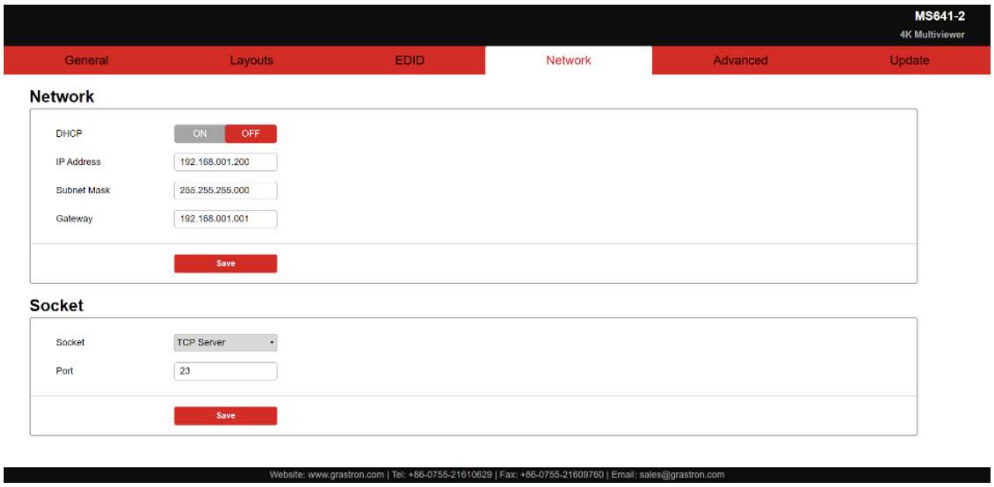


User could click “Choose File” and browser to select a prepared EDID file from local PC, and select a target custom EDID position and click “Upload” to upload this EDID to the EDID package.

EDID Download

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

Network

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

DHCP Switch: ON/OFF

When DHCP is on, it doesn’t 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.

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

Power

ON: When it's Power Off, set the device to power on.
OFF: When it's Power On, set the device to stand by.

Auto Layout

ON: Enable the Auto Layout function.
OFF: Disable the Auto Layout function.

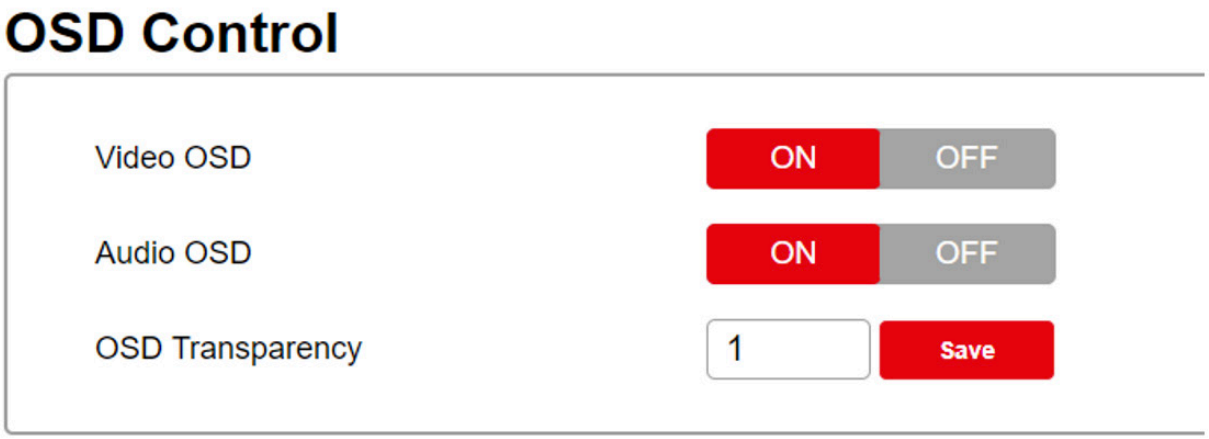
Audio Mute

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 make the changes take effect.

OSD Control



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

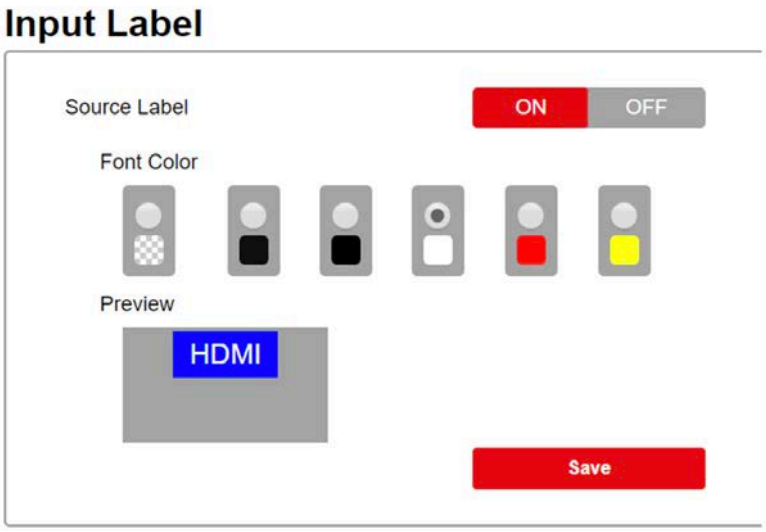
Video OSD control Enable or disable the video OSD

Audio OSD control Enable or disable the audio OSD

OSD Transparency: Set the level of transparency from 0 to 5. 0 means non-transparent.

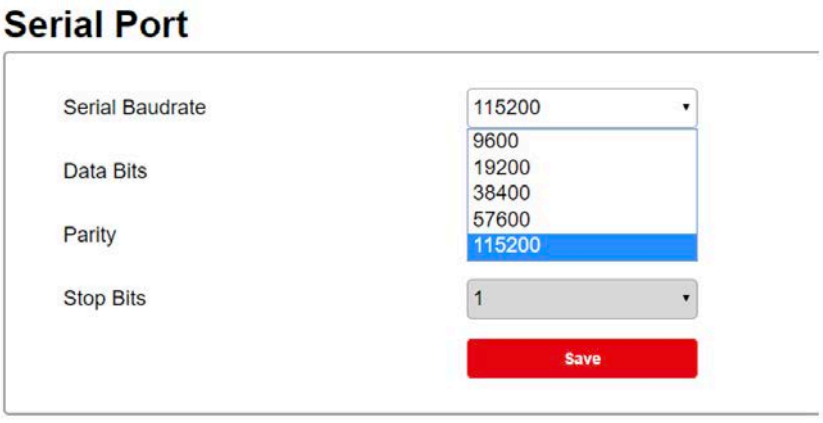
Input Label

OFF: Disable the Source Label.
ON: Enable the Source Label.



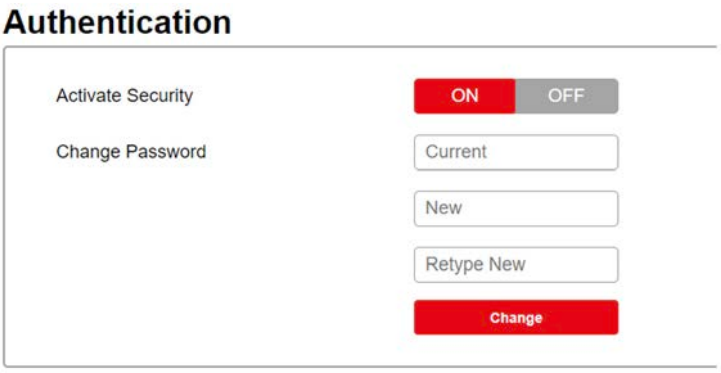
Change the window label font color and save it to be effect.

Serial Port



Serial baud-rate setting, including 9600, 14400, 19200, 38400, 57600, 115200.
The factory default setting is 115200
Click **Save** to take effect.

Authentication

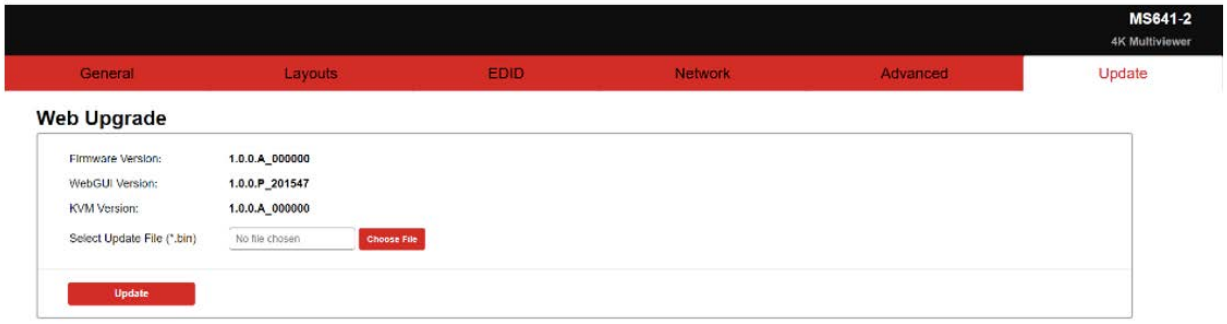


Change the login password. After change it, click Save to take effect.

Other

Restore to default
Click to restore to factory default setting.

Update



User could check the current firmware version. Click Choose File to select the new firmware to update the unit.
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.

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 MS641-2 to a display device.
2. Copy the “update.bin” in the PC.
3. Enter the webpage of MS641-2, and select the Update page to select the stored “update.bin” to start the upgrading.
4. After about 10minutes' upgrading, it shows successful upgrading on the webpage, and auto-refresh the web page. Pls check the FW version to be sure the successful upgrade to the right FW version.
5. The device will auto-reboot after complete the whole upgrading progress.
6. If not successful, pls re-upgrade again.

KVM Function

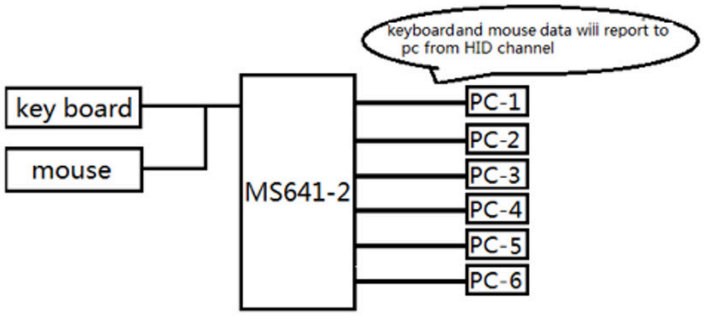
This function is only available for MS641KVM-2

KVM function introduction

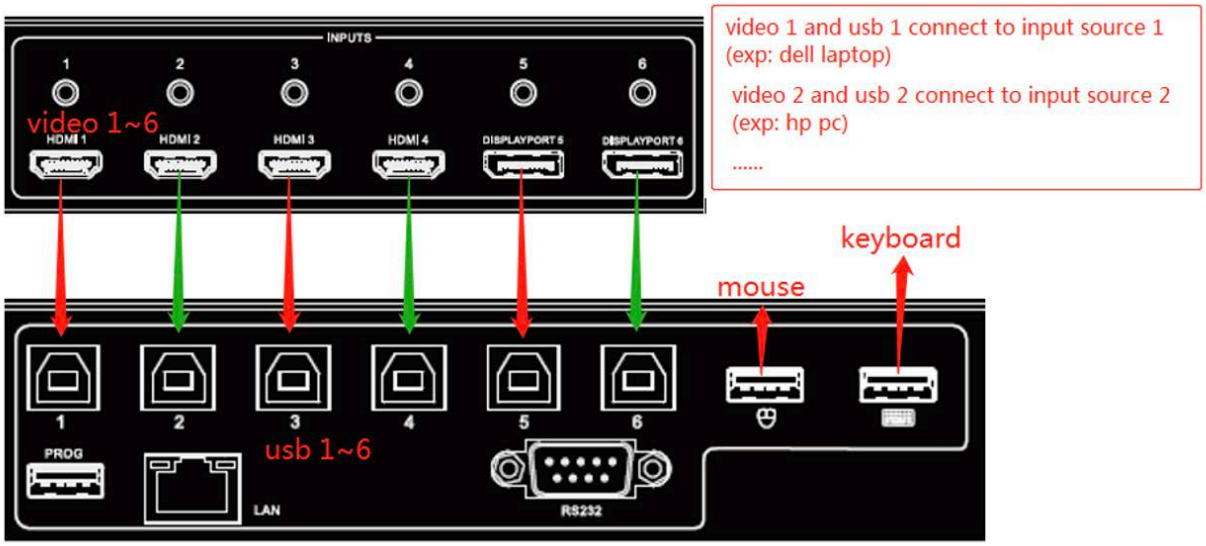
KVM function provides a way for a user to use a set of keyboard and mouse to control multiple connected PC/laptop.
The mouse and keyboard switching time between different PC/lap-top is <30ms.
The delay time of the keyboard and mouse is <10ms.
The resolution ranges of the mouse is 3840x2160.

KVM Installation

The connection diagram is

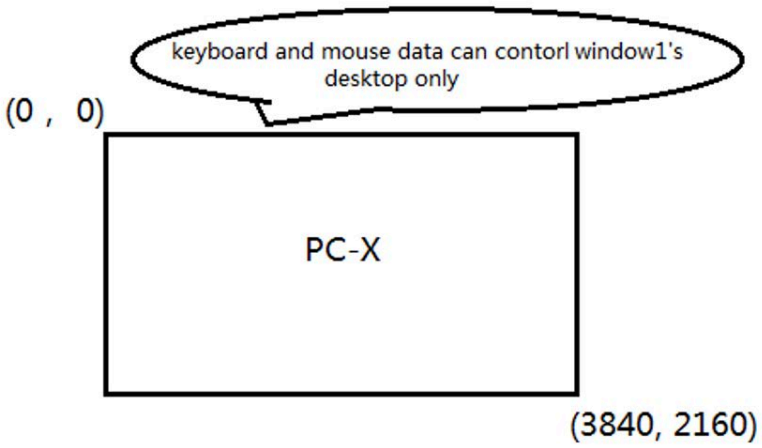


User connects one set of keyboard and mouse to the two USB ports of MS641, and connect the corresponding USB output to the source device 1~6, while connect the corresponding HDMI to the source device 1~6, as shown below



KVM On Single Window

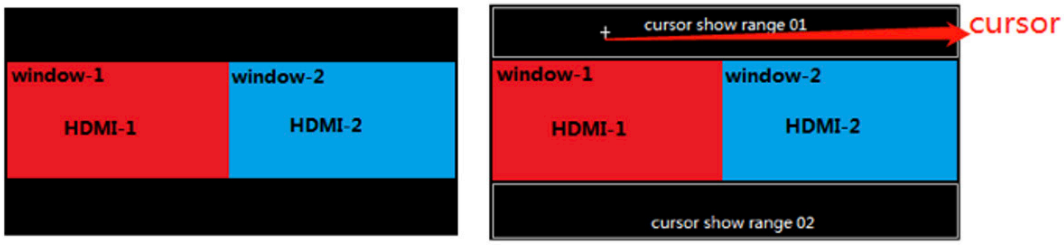
When MS641 is set as single-viewer mode, the keyboard and mouse signal is fully passed through the MS641KVM to the source devices.
The operation range is the whole main screen.



KVM On Multi-viewer Window

When MS641KVM-2 is set as multi-viewer mode, the keyboard and mouse will be automatically switched to the corresponding source device, as illustrated below

1. with blank among the windows



Case 1: When powered on, the keyboard and mouse will be placed in the window-1 by default. User could move the keyboard and mouse from window-1 to the window-2, while the keyboard and mouse will automatically be switched from window-1 (red block area) to window-2 (blue block area).
When the mouse moved outside the Windows 1/2, it shows itself as a “cross” cursor, to indicate the pointing place.

Case 2: When powered on, the keyboard and mouse will be placed in the window-1 by default. User could move the keyboard and mouse from window-1 to the window-2, through a blank area. During the blank area, the mouse shows itself as a “cross” cursor to indicate the pointing place, until enter into the window.

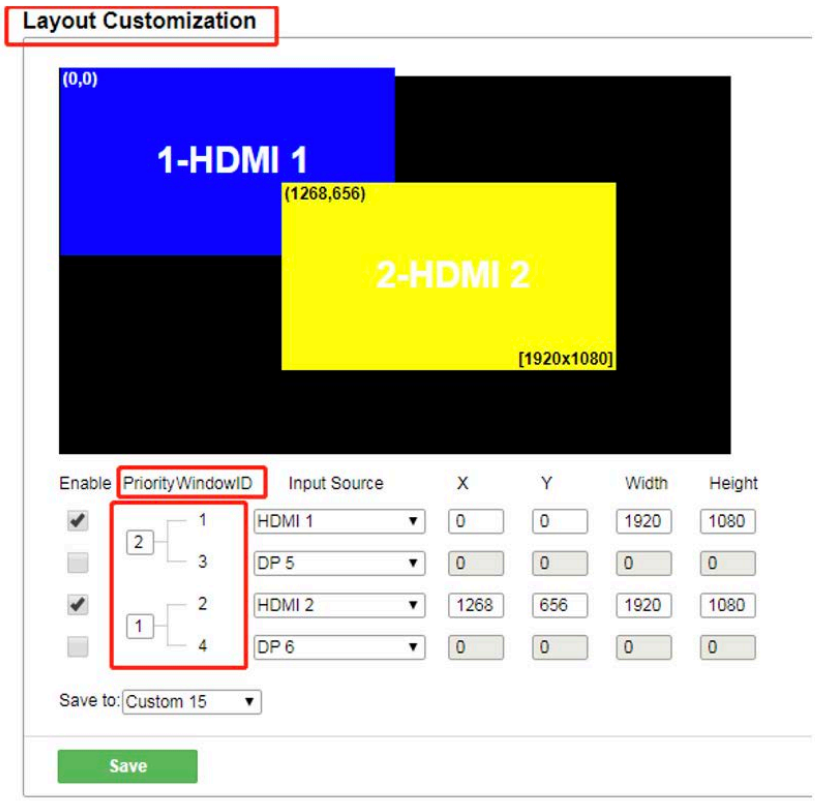
2. without blank among the windows

Case 1: without overlap area among windows

When powered on, the keyboard and mouse will be placed in the window-1 by default. User could move the keyboard and mouse from window-1 to the window-2, while the keyboard and mouse will automatically be switched from window-1 (red block area) to window-2 (blue block area).

Case 2: with overlap area windows

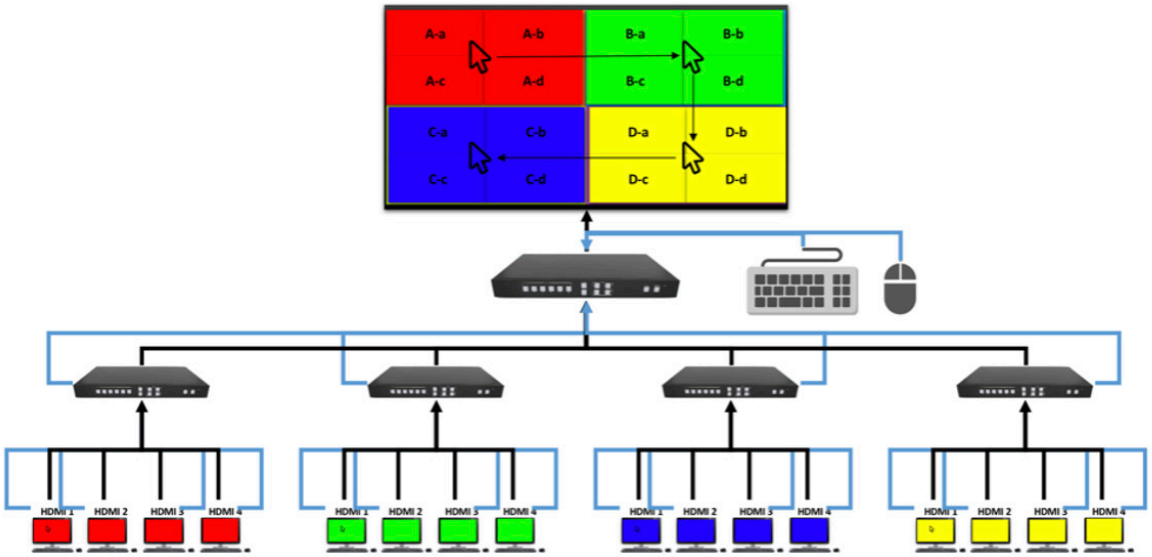
When user customized a layout with the layout setting which is set by the Web GUI configuration, as below



When powered on, the keyboard and mouse will be placed in the window-1 by default. When the mouse is moved to the overlap area, the keyboard and mouse will be switched to the corresponding source device of the higher priority windows.

KVM Daisy Chain

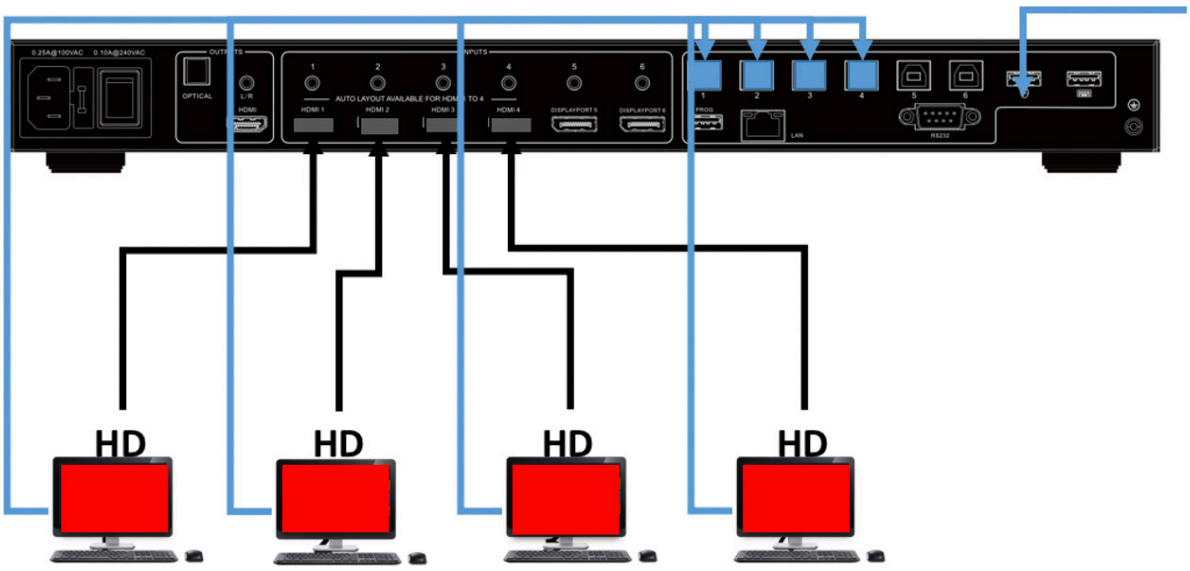
KVM daisy chain technology, is to add an internal communication channel and algorithm for user to use one set of keyboard and mouse to control maximum 16 windows, when connecting two level of Multiview processors (normally at least 5 pcs of Multiview processor) by a daisy-chain diagram, as shown below



1. Installation

User could update the newer firmware to enable this function, with the need of changing the hardware.

All the source device HDMI/DP and USB connection for sub level of multi-viewer processor is the same as when it's used standalone. Please refer to the KVM installation description as above.

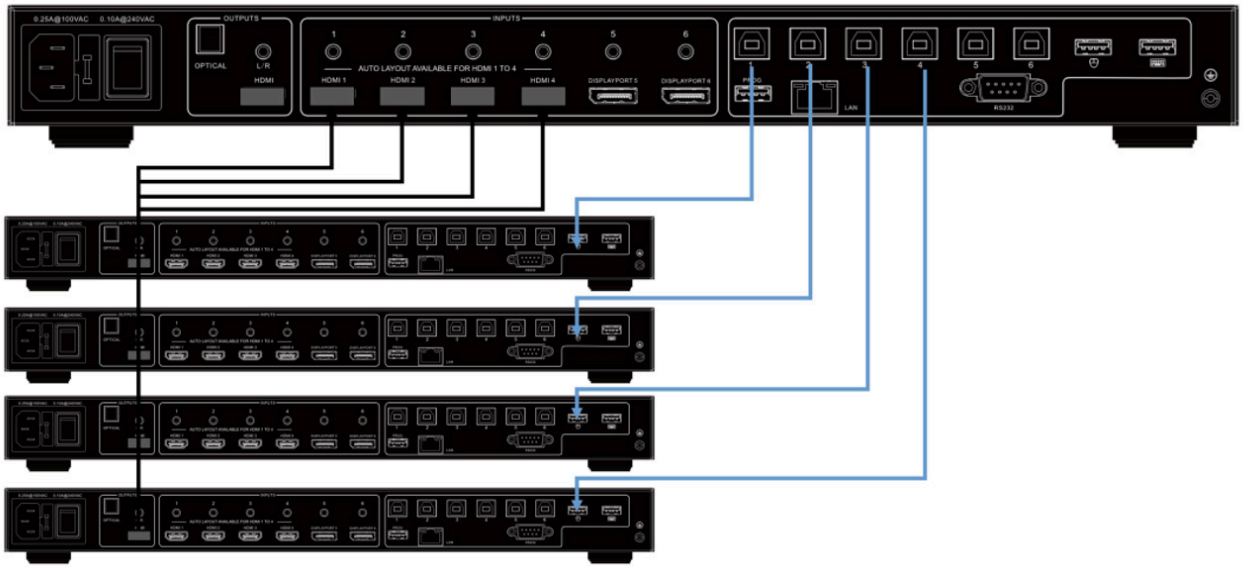


The connection cables between master multi-viewer processor and the sub level of multi-viewer processor are HDMI/DP cable and USB cable.

1. Connect the HDMI/DP output of the sub level of multi-viewer processor to the HDMI input 1-4 port of the master multi-viewer processor as shown below

2. connect the master multi-viewer processor USB output 1-4 to the USB mouse input port of the sub level multi-viewer processor, as shown below

Note: the KVM signal between sub level multi-viewr processor and the master multi-viewer processor is proprietary HID communication channel, not standard HID protocol.



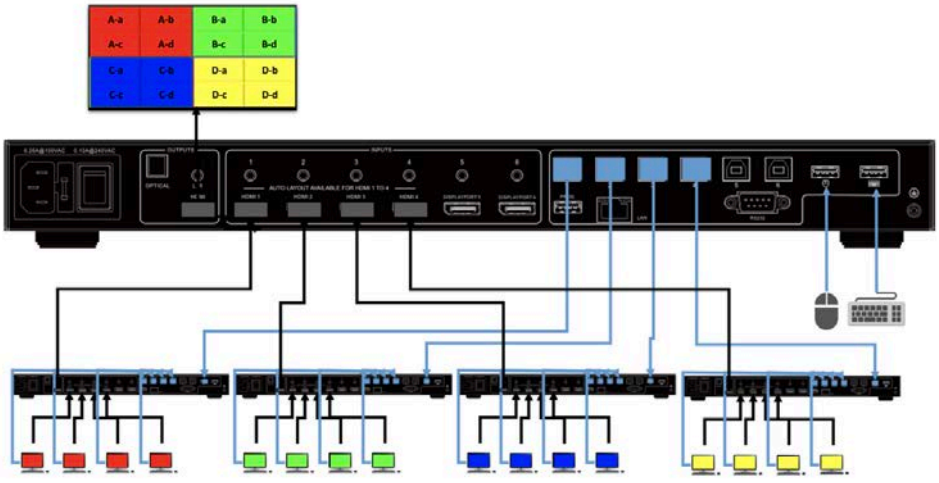
The connection cables between master multi-viewer processor and main screen and master mouse and keyboard are HDMI/DP cable, mouse USB cable, keyboard USB cable. Please connect the master multi-viewer processor to the main screen by HDMI cable, and also connect the master mouse and keyboard by two separate USB cables as shown below.

Note:

HDMI or DP cable is for transmitting video and audio signal.

USB cable is for transmitting USB HID signal, including keyboard and mouse.

Each multi-viewer processor could be either master device or sub level device, which is defined by the actual connection diagram.



Auto Layout

"Dynamic Layouts" feature provides a way to dynamically configure the multi-viewer layouts based on the status of four HDMI inputs. In this way, the multi-viewer can dynamically detect the plug/unplug of HDMI input cables to configure 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 configured as single window;

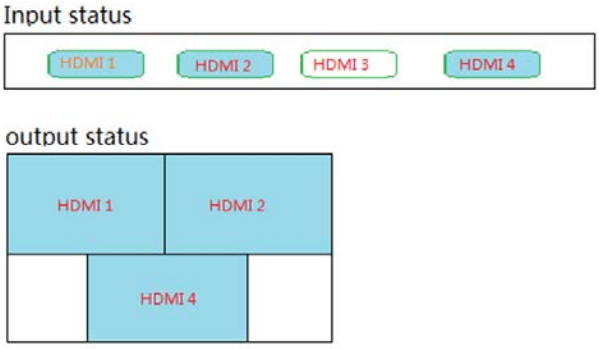
if two HDMI inputs are detected, the display will be configured as double windows;

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

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

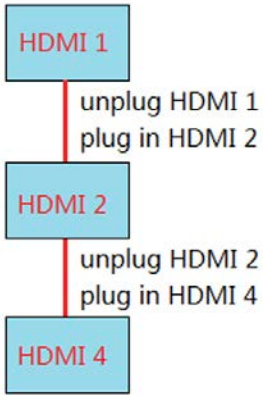
When it is configured as double/triple/quadruple windows, the priority of HDMI inputs for window1/2/3/4 is HDMI1 > HDMI2 > HDMI3 > HDMI4.

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:

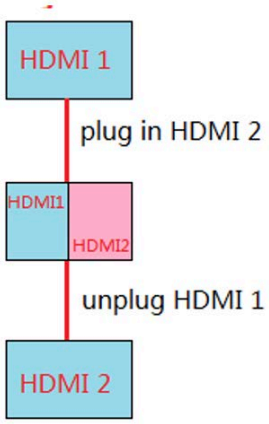


After unit is powered on, if user plug or unplug HDMI inputs cable on the back panel, the layouts will change dynamically. For example, the operation rules are as the below:

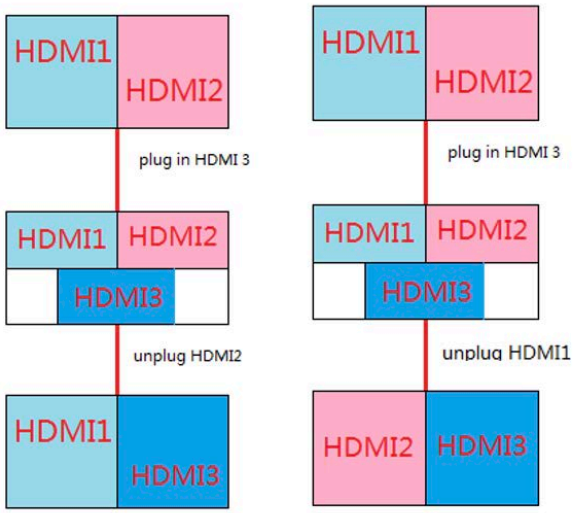
Single windows



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



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



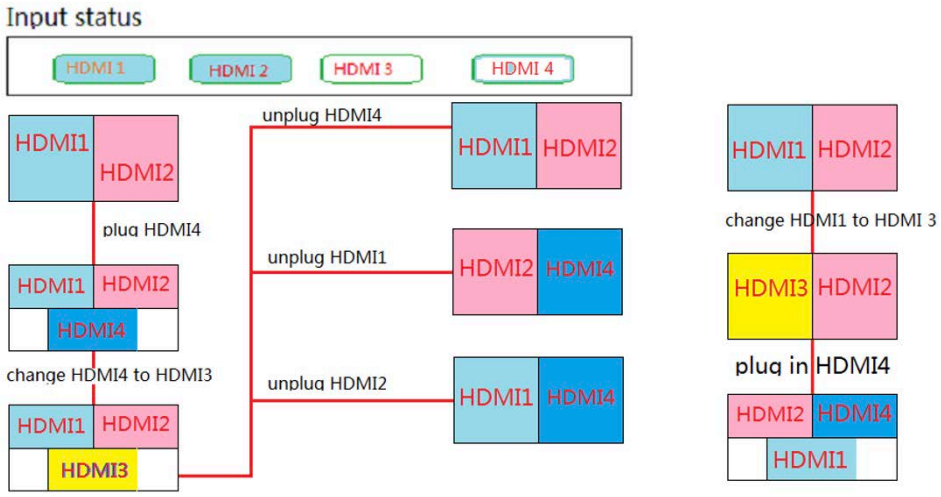
The rule of “triple windows to quadruple windows, and quadruple windows to triple windows”.

2. After 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.

For example, the operation rules are as the below:

When there is an input port without plugged cable on current windows, if unplug an active HDMI input, the multi-viewer will remove the unplugged cable input sources from right to left.

When there is an input port without plugged cable on current windows, and there is a plugged cable input sources but not shown on current windows (for example, compulsorily switch to unplugged cable input source on the front panel), if we plug a new HDMI cable, the multi-viewer will clear unplugged cable input sources from right to left, and then add the mentioned newly plugged input source. At last, the sources which is not shown on the windows before will be added on the windows now.



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)

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
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
	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
	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 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
	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

	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
	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.
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 e.g. ATM 0A IPT_NAM W 1 a (Y: name string length=01, X: 09+01=0x0A) ATM 12 IPT_NAM W 1 123456789 (Y: name string length=09, X: 09+09=0x12)
	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	
	Set input 4 name as Y	ATM X IPT_NAM W 4 Y	
	Set input 5 name as Y	ATM X IPT_NAM W 5 Y	
	Set input 6 name as Y	ATM X IPT_NAM W 6 Y	
OSD Trans parency	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:diable 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 Back Ground	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
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,Hhhhh	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,Hhhhh	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
		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.
		ATM 0B EDI_CPY W 05 1	Option 5 (Custom_2) of the EDID selection lists copy to input 1.
		ATM 0B EDI_CPY W 06 1	Option 6 (Custom_3) of the EDID selection lists copy to input 1.
		ATM 0B EDI_CPY W 07 1	Option 7 (Custom_4) of the EDID selection lists copy to input 1.
		ATM 0B EDI_CPY W 08 1	Option 8 (Custom_5) of the EDID selection lists
		ATM 0B EDI_CPY W 09 1	Option 9 (Custom_6) of the EDID selection lists copy to input 1.
		ATM 0B EDI_CPY 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_CPY W 01 2	Option 1 (Internal_4K_2K_60Hz_2_ ch) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 02 2	Option 2 (Internal_1080P_2_ch) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 03 2	Option 3 (Internal_ DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 04 2	Option 4 (Custom_1) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 05 2	Option 5 (Custom_2) of the EDID selection lists copy to input 2.

		ATM 0B EDI_CPY W 06 2	Option 6 (Custom_3) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 07 2	Option 7 (Custom_4) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 08 2	Option 8 (Custom_5) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 09 2	Option 9 (Custom_6) of the EDID selection lists copy to input 2.
		ATM 0B EDI_CPY W 10 2	Option 10 (HDMI Output) of the EDID selection lists copy to input 2.
	Copy EDID to input 3 sources	ATM 0B EDI_CPY W 01 3	Option 1 (Internal_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 02 3	Option 2 (Internal_1080P_2_ch) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 03 3	Option 3 (Internal_ DP_4K_2K_60Hz_2_ch) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 04 3	Option 4 (Custom_1) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 05 3	Option 5 (Custom_2) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 06 3	Option 6 (Custom_3) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 07 3	Option 7 (Custom_4) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 08 3	Option 8 (Custom_5) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 09 3	Option 9 (Custom_6) of the EDID selection lists copy to input 3.
		ATM 0B EDI_CPY W 10 3	Option 10 (HDMI Output) of the EDID selection lists copy to input 3.

Abbreviation

Abbreviation	English full name	Benelux in Chinese
EDID	Extended Display Identification Data	扩展显示标识数据
DP	Display Port	无
DVI	Digital Visual Interface	数字视频接口
HD	High Definition	高清
HDCP	High-bandwidth Digital Content Protection	高宽带数字内容保护
HDMI	High Definition Multimedia Interface	高清晰度多媒体接口
IP	Internet Protocol	互联网协议
LAN	Local Area Network	局域网
OSD	On Screen Display	屏幕显示
TCP	Transmission Control Protocol	传输控制协议

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