

# D V D O



## DVDO-Matrix-44SS-VW

4K 4x4 Seamless HDMI Matrix Switcher  
& Video Wall Controller

## User Manual

Version v1.0

# Thank you for purchasing DVDO-Matrix-44SS-VW

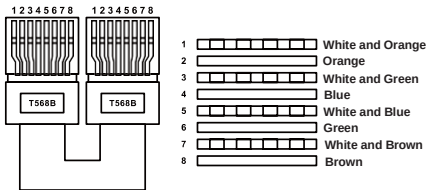
For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

## Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

## Caution

The product requires the use of UTP connectors. Please connect in direct interconnection method and do not cross connect.



Direct Interconnection Method

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# 1. Introduction

The 4K60 4:4:4 seamless matrix is a multi-purpose high-speed video processing system. It can be configured for 2 different output modes. It can perform as a 4×4 seamless matrix switcher, as a 2×2, 4×1 or 1×4 etc video wall solution. It also features a web browser interface module for control and configuration of the matrix when used stand-alone or with a third party control system. Control options include front-panel push buttons, IR remote control, RS-232 interface and TCP/IP.

## 2. Features

- ☆ Compliant HDCP 2.2 and HDCP 1.4
- ☆ Features 2 operational modes:
  - 4×4 Matrix (seamless switch)
  - Video wall (2×2, 4×1 or 1×4 etc configuration)
- ☆ Seamless video switching
- ☆ Video inputs support all industry standard video resolutions including VGA-WUXGA (up to 1920×1200 @60Hz) and 480i-4K (3840 x 2160 @60Hz 4:4:4, 4096 x 2160 @60Hz 4:4:4) as specified in HDMI 2.0b
- ☆ HDMI outputs support upscale or downscale to any resolution, up to 4096 x 2160@60Hz 4:4:4
- ☆ Support LPCM, DD, DD+, DTS, Dolby TrueHD, DTS HD-master pass-through
- ☆ Advanced EDID management
- ☆ Web interface module for control and configuration of Matrix
- ☆ Control via front panel, IR, RS-232 and TCP/IP

## 3. Package Contents

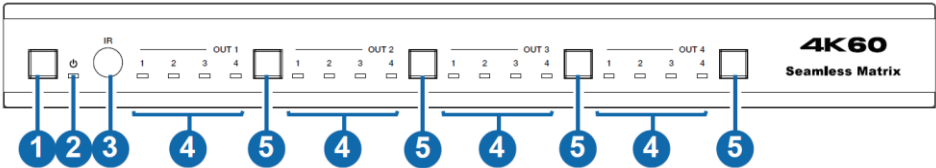
- ① 1 x 18Gbps 4x4 Seamless Matrix
- ② 1 x Matrix IR Remote
- ③ 1 x 3pin-3.81mm Phoenix Connector (male)
- ④ 1 x 20-60KHz IR Wideband Receiver Cable (1.5 meters)
- ⑤ 2 x Mounting Ears
- ⑥ 4 x Machine Screws (KM3\*4)
- ⑦ 1 x 12V/2.5A Locking Power Adapter
- ⑧ 1x User Manual

## 4. Specifications

| Technical             |                                                                                                                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HDMI Compliance       | HDMI 2.0b                                                                                                                                                                                                                   |
| HDCP Compliance       | HDCP 2.2/1.4                                                                                                                                                                                                                |
| Video Bandwidth       | 594MHz/18Gbps                                                                                                                                                                                                               |
| Video Resolution      | Input: VGA-WUXGA (up to 1920×1200@60Hz), 480i-4K (3840x2160@60Hz 4:4:4, 4096x2160@60Hz 4:4:4)                                                                                                                               |
|                       | Output: 4096x2160p60, 4096x2160p50, 3840x2160p60, 3840x2160p50, 3840x2160p30, 1920x1080p60, 1920x1080p50, 1920x1080i60, 1920x1080i50, 1920x1200p60rb, 1360x768p60, 1280x800p60, 1280x720p60, 1280x720p50, 1024x768p60, auto |
| Color Space           | RGB, YCbCr 4:4:4/4:2:2, YUV 4:2:0                                                                                                                                                                                           |
| Color Depth           | 8/10/12-bit                                                                                                                                                                                                                 |
| IR Level              | 12Vp-p                                                                                                                                                                                                                      |
| IR Frequency          | 38KHz                                                                                                                                                                                                                       |
| HDMI Audio Formats    | LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio                                                                                                                       |
| Connection            |                                                                                                                                                                                                                             |
| Inputs                | 4 x INPUT [HDMI Type A, 19-pin female]                                                                                                                                                                                      |
| Outputs               | 4 x OUTPUT [HDMI Type A, 19-pin female]                                                                                                                                                                                     |
| Control               | 1 x RS-232 [3pin-3.81mm phoenix connector]<br>1 x TCP/IP [RJ45]<br>1 x IR EXT [3.5mm Stereo Mini-jack]                                                                                                                      |
| Mechanical            |                                                                                                                                                                                                                             |
| Housing               | Metal Enclosure                                                                                                                                                                                                             |
| Color                 | Black                                                                                                                                                                                                                       |
| Dimensions            | 270mm (W) × 166mm (D) × 30mm (H)                                                                                                                                                                                            |
| Weight                | 1165g                                                                                                                                                                                                                       |
| Power Supply          | Input: AC 100 - 240V 50/60Hz<br>Output: DC 12V/2.5A (US/EU standard, CE/FCC/UL certified)                                                                                                                                   |
| Power Consumption     | 19.56W (Max)                                                                                                                                                                                                                |
| Operating Temperature | 0°C ~ 40°C / 32°F ~ 104°F                                                                                                                                                                                                   |
| Storage Temperature   | -20°C ~ 60°C / -4°F ~ 140°F                                                                                                                                                                                                 |
| Relative Humidity     | 20~90% RH (non-condensing)                                                                                                                                                                                                  |

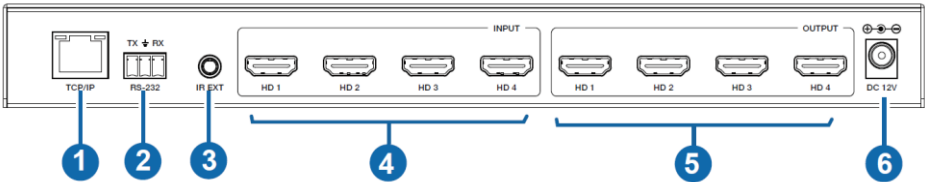
# 5. Operation Controls and Functions

## 5.1 Front Panel



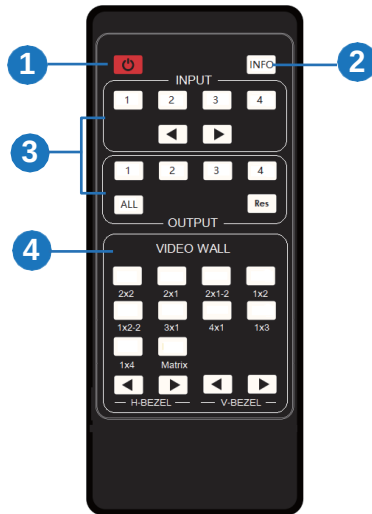
| No. | Name                          | Function Description                                                                                                                                                   |
|-----|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Power button                  | <ul style="list-style-type: none"><li>▪ Short press this button to power on the device.</li><li>▪ Press this button for 1 seconds to enter the standby mode.</li></ul> |
| 2   | Power LED                     | The LED will illuminate in green when the product is working normally, and red when the product is on standby.                                                         |
| 3   | IR Window                     | IR receiver window, it only receives the IR remote signal from this product.                                                                                           |
| 4   | Signal source LED             | Signal source indicator for the OUT 1 - OUT 4 port.                                                                                                                    |
| 5   | Input source switching button | Input source switching button for the OUT 1- OUT 4 port.                                                                                                               |

## 5.2 Rear Panel



| No. | Name        | Function Description                                                                                                                                                                                                  |
|-----|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | TCP/IP      | The link port for TCP/IP control, connected to an active Ethernet link with an RJ45 cable to control the Matrix via Web.                                                                                              |
| 2   | RS-232      | RS-232 serial command control port, connected to a PC or control system to control the Matrix.                                                                                                                        |
| 3   | IR EXT      | If the IR receiver window of the unit is blocked or the unit is installed in a closed area out of infrared line of sight, the IR receiver cable can be inserted to the “IR EXT” port to receive the IR remote signal. |
| 4   | HDMI INPUT  | HDMI signal input port, connected to signal source device.                                                                                                                                                            |
| 5   | HDMI OUTPUT | HDMI signal output port, connected to HDMI display device.                                                                                                                                                            |
| 6   | DC 12V      | DC 12V/2.5A power input port.                                                                                                                                                                                         |

## 6. IR Remote



- ① **Power on or Standby:** Power on the Matrix or set it to standby mode.
- ② **INFO:** Press this button to display the serial port baud rate and IP address in the upper right corner of the screen. (The information will disappear after 5 seconds.)

### ③ INPUT/OUTPUT

**INPUT 1/2/3/4:** Select the signal input channel.

◀ ▶: Select the last or next signal input channel.

**OUTPUT 1/2/3/4:** Select the signal output channel.

**ALL:** Select all output channels simultaneously. For example, when you press the “ALL” button and then press INPUT “1” button, at this time the input “1” source will be output to all display devices.

*Note: After the matrix is turned on, the ALL key is selected by default. For example, after turning on the matrix, press the INPUT 1 button directly, and the INPUT 1 signal will be output to all display devices simultaneously.*

**Res:** Press this button to switch output channel resolution.

Matrix mode: Press **OUTPUT 1/2/3/4** or **ALL**, then press **Res** to switch the output resolution circularly.

Video wall mode: Press **Res** directly to switch the output resolution for four output channels simultaneously.

**Operation Instruction:** You need to press the OUTPUT button firstly and then press the INPUT button to select the corresponding input source. For example, Press OUTPUT-X (X means output button from 1 to 4, including “ALL” button), then press INPUT-Y (Y means input button from 1 to 4).

### ④ VIDEO WALL:

**Video wall mode selection:**

Press the video wall mode button directly to enter corresponding mode.

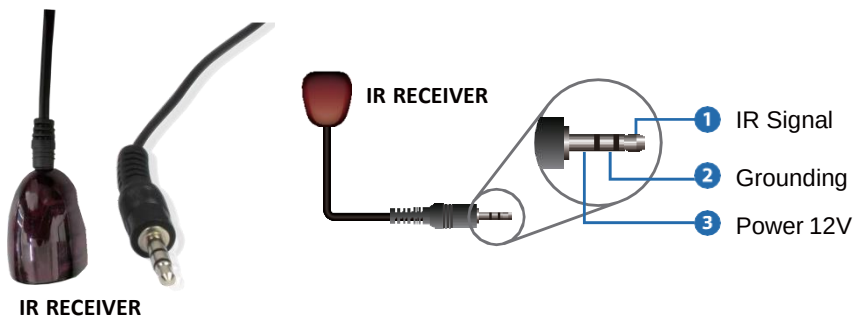
**Source selection for the video wall group:**

Press **OUTPUT 1/2/3/4** or ◀/▶ to select the video wall group firstly, then press **INPUT 1/2/3/4** or ◀/▶ to select the input source.

**Bezel Adjustment:** Press ◀/▶ of H-BEZEL / V-BEZEL to adjust the bezel.

# 7. IR Pin Definition

IR Receiver pin's definition is as below:



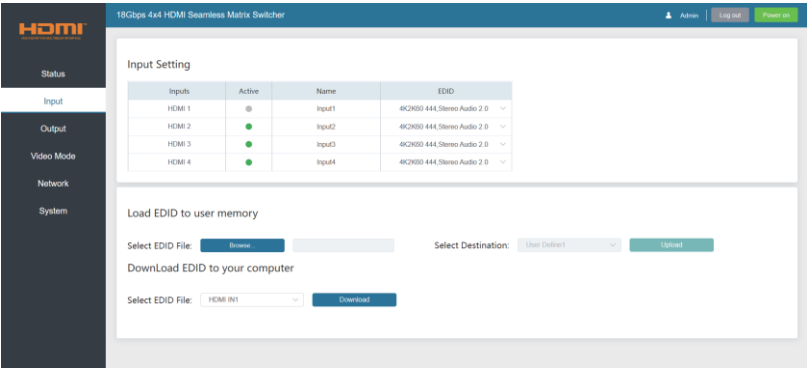
*Note: When the angle between the IR receiver and the remote control is  $\pm 45^\circ$ , the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is  $\pm 90^\circ$ , the transmission distance is 0-8 meters.*

# 8. EDID Management

This Matrix has 12 factory defined EDID settings, 2 user-defined EDID modes and 4 copy EDID modes. You can select defined EDID mode or copy EDID mode to input port through RS-232 control or Web GUI.

**RS-232 control operation:** Connect the Matrix to PC with a serial cable, then open a Serial Command tool on PC to send ASCII command “s edid in x from z!” to set EDID. For details, please refer to “EDID Setting” in the ASCII command list of “11. RS-232 Control Command”.

**Web GUI Operation:** Please check the EDID management in the “Input page” of “10. Web GUI User Guide”.

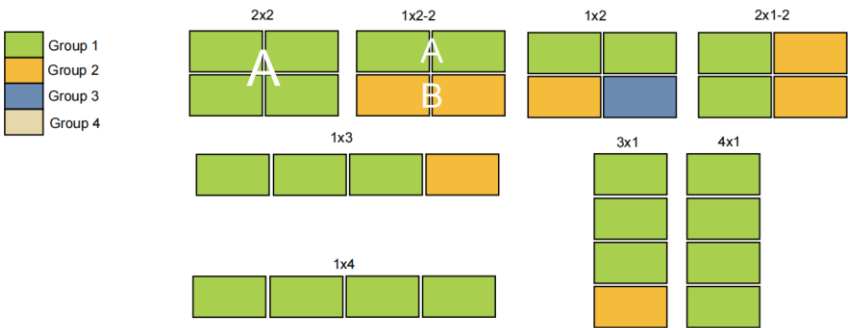


The defined EDID setting list of the product is shown as below:

| EDID Mode | EDID Description             |
|-----------|------------------------------|
| 1         | 4k2k60_444, stereo audio 2.0 |
| 2         | 4k2k60_444, dolby/dts 5.1    |
| 3         | 4k2k60_444, hd audio 7.1     |
| 4         | 4k2k30_444, stereo audio 2.0 |
| 5         | 4k2k30_444, dolby/dts 5.1    |
| 6         | 4k2k30_444, hd audio 7.1     |
| 7         | 1080p, stereo audio 2.0      |
| 8         | 1080p, dolby/dts 5.1         |
| 9         | 1080p, hd audio 7.1          |
| 10        | 1920x1200, stereo audio 2.0  |
| 11        | 1360x768, stereo audio 2.0   |
| 12        | 1024x768, stereo audio 2.0   |
| 13        | user define1                 |
| 14        | user define2                 |
| 15        | copy from hdmi output 1      |
| 16        | copy from hdmi output 2      |
| 17        | copy from hdmi output 3      |
| 18        | copy from hdmi output 4      |

## 9. Video Wall

The matrix supports 10 categories of display modes as below:



User can select display modes via IR remote, Web GUI or RS-232 commands.



# 10. Web GUI User Guide

The Matrix can be controlled by Web GUI. The operation method is shown as below:

**Step 1:** Get the current IP Address.

The default IP address is 192.168.0.100. You can get the current Matrix IP address in two ways:

**The first way:** You can get the IP address via remote controller. Press “INFO” button on the remote control, the IP address will show the upper right corner of the screen.

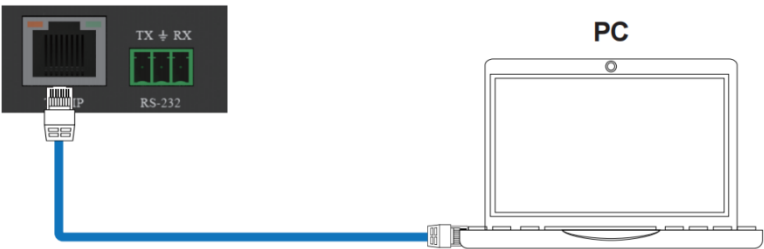
**The second way:** You can get the IP address via RS-232 control. Send the ASCII command “ r ip addr!” through a Serial Command tool, then you’ll get the feedback information as shown below:

```
ip address:192.168.0.100
```

IP:192.168.0.100 in the above figure is the current Matrix IP address (this IP address is variable, depending on what the specific machine returns).

**For the details of RS-232 control, please refer to “11. RS-232 Control Command”.**

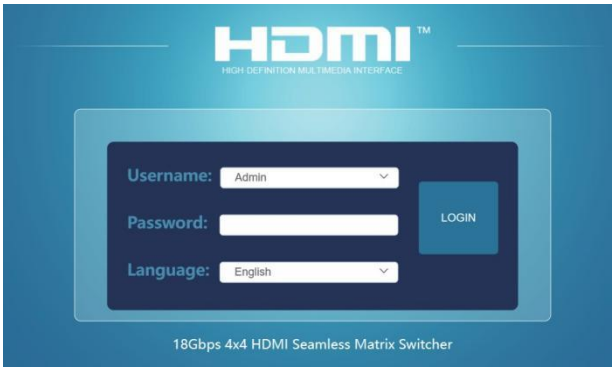
**Step 2:** Connect the TCP/IP port of the Matrix to a PC with an UTP cable (as shown in the following figure), and set the IP address of the PC to be in the same network segment with the Matrix.



**Step 3:** Input the current IP address of Matrix into your browser on the PC to enter Web GUI page.



After entering the Web GUI page, there will be a Login page, as shown below:



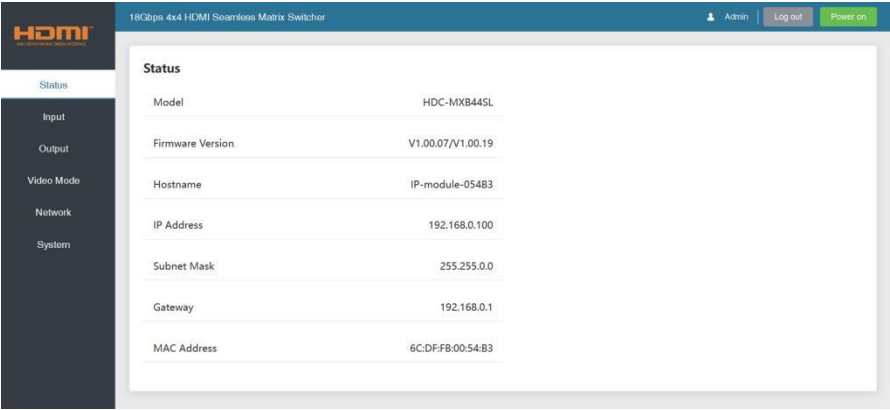
Select the Language from the drop-down list to choose English or Simple Chinese.  
Select the Username from the drop-down list and enter the password. The default passwords are:

|          |      |       |
|----------|------|-------|
| Username | User | Admin |
| Password | user | admin |

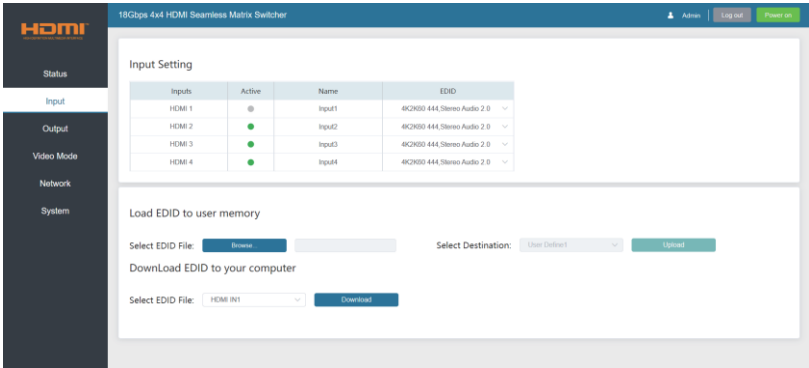
After entering the password, click the “LOGIN” button and the following Status page will appear.

■ Status Page

The Status page provides basic information about the product model, installed firmware version and the network settings of the device.



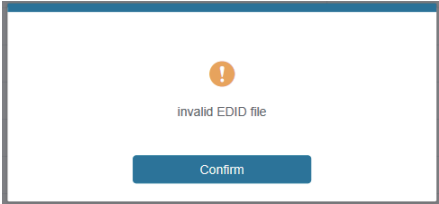
■ Input Page



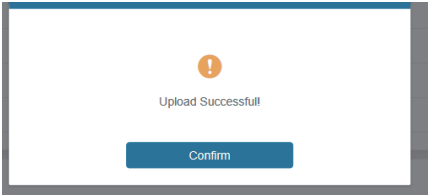
You can do the following operations on the Input page:

- ① **Inputs:** Input channel of the device.
- ② **Active:** It indicates whether the channel is connected to a signal source. When the input port is connected to the signal, it shows green, otherwise, it shows gray.
- ③ **Name:** The input channel's name. You can modify it by entering the corresponding name (max length: 32 characters) in the input box.
- ④ **EDID:** You can set the current channel's EDID. Click drop-down list to select.
- ⑤ **Load EDID to user memory:** Set EDID for the User.

Click the “Browse” button, then select the bin file. If you select the wrong EDID file, there will be a prompt, as shown in the following figure:



Make sure to select the correct file, then you can check the name of the selected file. Select “User 1” or “User 2”, then click “Upload”. After successful setting, it will prompt as follows:



⑥ **Download EDID to your computer:**

Click the drop-down box of “Select EDID File” to select the corresponding input channel. Then click “Download” to download the corresponding EDID file.

■ **Output Page**

HDMI

Status

Input

Output

Video Mode

Network

System

18Gbps 4x4 HDMI Seamless Matrix Switcher

AdminLog outPower on

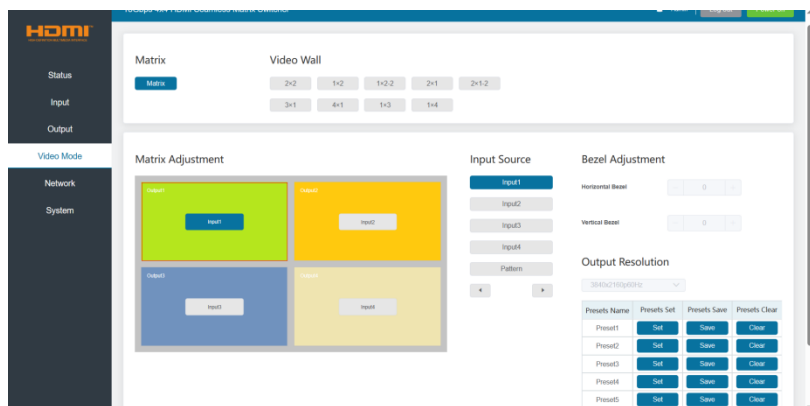
Output Setting

| Outputs | Cable | Yuser   | Output Resolutions | Color Space | EDCP | IT source | Y source | Stream |
|---------|-------|---------|--------------------|-------------|------|-----------|----------|--------|
| HDMI 1  | ●     | Output1 | AUTO               | RGB 4:4:4   | 1.4  | ●         | ●        | ●      |
| HDMI 2  | ●     | Output2 | AUTO               | YCbCr 4:4:4 | 1.4  | ●         | ●        | ●      |
| HDMI 3  | ●     | Output3 | AUTO               | YCbCr 4:2:2 | 1.4  | ●         | ●        | ●      |
| HDMI 4  | ●     | Output4 | AUTO               | YCbCr 4:2:0 | 1.4  | ●         | ●        | ●      |

You can do the following operations on the Output page:

- ① **Outputs:** Output channel of the device.
  - ② **Cable:** It indicates the connection status of output ports. When the output port is connected to the display, it shows green, otherwise, it shows gray.
  - ③ **Name:** The current output channel's name. You can modify it by entering the corresponding name (max length: 32 characters) in the input box.
  - ④ **Output Resolution:** Set the current output resolution mode. Click the drop-down list to select other resolutions.
  - ⑤ **Color Space:** Set the color space of the output signal.
  - ⑥ **HDCP:** Set the HDCP version that the current output port supports.
  - ⑦ **H mirror:** Turn on/off the horizontal mirroring of the output signal.
  - ⑧ **V mirror:** Turn on/off the vertical mirroring of the output signal.
  - ⑨ **Stream:** Turn on/off the signal output stream of the output port.
- Note:** User cannot set each output resolution separately in video wall mode.

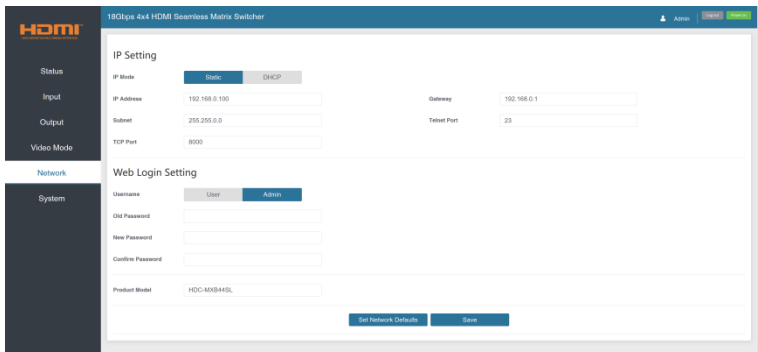
## ■ Video Mode Page



You can do the following operations on the Video page:

- ① **Matrix:** Click to select the Matrix mode.
- ② **Video Wall:** Click to select any video wall mode.
- ③ **Matrix/Video Wall Adjustment:** Display the input and output information.
- ④ **Input Source:** Two methods to select the input source:  
Method 1: Drag **Input1/2/3/4/Pattern** to any window of Matrix/Video Wall Adjustment.  
Method 2: Select any window in Matrix/Video Wall Adjustment, then click **Input1/2/3/4/Pattern** in Input Source, or click ◀/▶ to select the last or next signal source.
- ⑤ **Bezel Adjustment:** Click +/- to adjust the corresponding Horizontal/Vertical Bezel (Up to 10 levels).
- ⑥ **Output Resolution:** Set the resolution of all current output ports. Click the drop-down list to select.
- ⑦ **Preset:** Set, save and clear the preset scenario as required, supporting up to 8 presets. You can modify the name of the preset by entering the corresponding name (max length: 32 characters) in the input box.

■ Network Page



You can do the following operations on the Network page:

Modify Network Setting

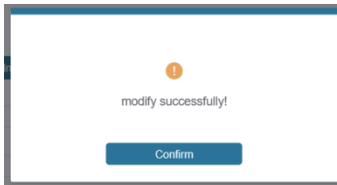
Modify the IP Mode Address/Gateway/Subnet Mask/Telnet Port as required, click “Save” to save the settings, then it will come into effect.  
After modification, if the Mode is “Static”, it will switch to the corresponding IP Address; if the Mode is “DHCP”, it will automatically search and switch to the IP Address assigned by the router.

IP Setting

|            |                                            |             |                                          |
|------------|--------------------------------------------|-------------|------------------------------------------|
| IP Mode    | <div>Static</div> <div>DHCP</div>          |             |                                          |
| IP Address | <input type="text" value="192.168.0.100"/> | Gateway     | <input type="text" value="192.168.0.1"/> |
| Subnet     | <input type="text" value="255.255.0.0"/>   | Telnet Port | <input type="text" value="23"/>          |
| TCP Port   | <input type="text" value="8000"/>          |             |                                          |

Modify User Password

Click the “User” button, enter the correct Old Password, New Password, and Confirm Password, then click “Save”. After successful modification, there will be a prompt, as shown in the following figure:

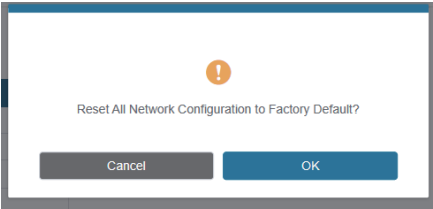


**Note:** Input rules for changing passwords:

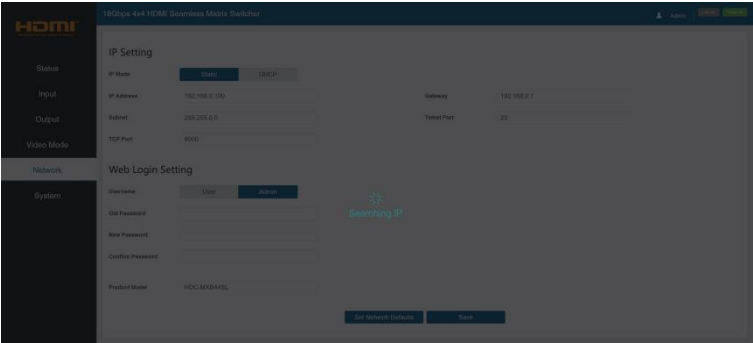
- (1) The password can’t be empty.
- (2) New Password can’t be the same as Old Password.
- (3) New Password and Confirm Password must be the same.

Set the Default Network

Click “Set Network Defaults” button, there will be a prompt, as shown in the following figure:

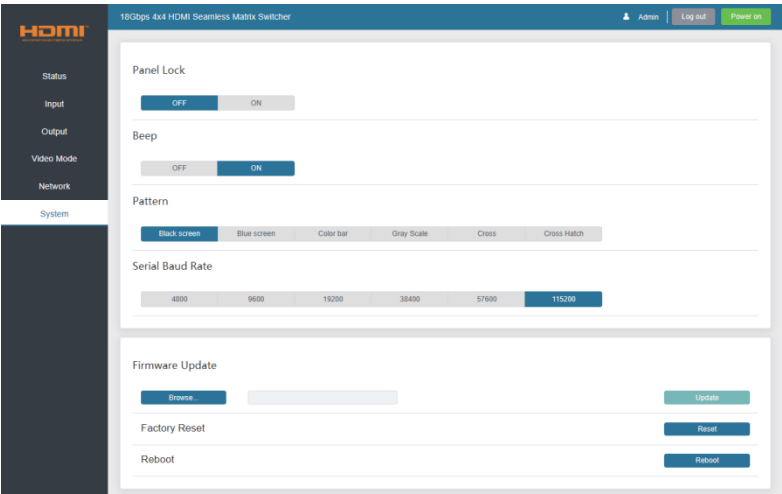


Click “OK” to search the IP Address again, as shown in the following figure:



After searching is completed, it will switch to the login page, the default network setting is completed.

System Page

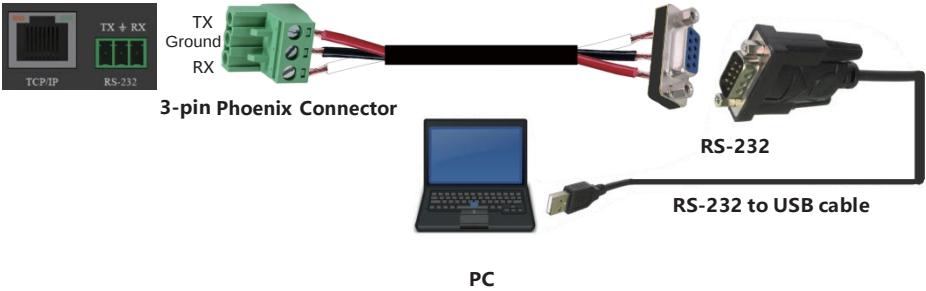


You can do the following operations on the System page:

- ① **Panel Lock:** Click to lock/unlock panel buttons. “ON” indicates that panel buttons are unavailable; “OFF” indicates panel buttons are available.
  - ② **Beep:** Click to turn on/off the beep.
  - ③ **Pattern:** Click to select 6 patterns.
  - ④ **Serial Baud Rate:** Click the value to set the Serial Baud Rate.
  - ⑤ **Firmware Update:** Click “Browse” to select the update file, then click “Update” to complete firmware update.
  - ⑥ **Factory Reset:** You can reset the machine to factory defaults by clicking “Reset”.
  - ⑦ **Reboot:** You can reboot the machine by clicking “Reboot”.
- Note:** After reset/reboot, it will switch to the login page.

## 11. RS-232 Control Command

The product also supports RS-232 command control. Connect the RS-232 port of the product to a PC with a 3-pin phoenix connector cable and an RS-232 to USB cable. The connection method is as follows.



Then open a Serial Command tool on PC to send ASCII commands to control the product. The ASCII command list about the product is shown as below.

| ASCII Command                                                                           |                                                                |               |                                                                                                                                    |                 |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Serial port protocol: Baud rate: 115200(default) Data bits: 8 Stop bits: 1 Check bit: 0 |                                                                |               |                                                                                                                                    |                 |
| x - Parameter 1, y - Parameter 2, z - Parameter 3, ! - Delimiter                        |                                                                |               |                                                                                                                                    |                 |
| Command Code                                                                            | Function Description                                           | Example       | Feedback                                                                                                                           | Default Setting |
| System setting                                                                          |                                                                |               |                                                                                                                                    |                 |
| help!                                                                                   | Lists all commands                                             | help!         |                                                                                                                                    |                 |
| r status!                                                                               | Get device current status                                      | r status!     | get the unit all status:<br>power, beep, lock, in /<br>out connection, video/<br>audio crosspoint, edid,<br>scaler, network status |                 |
| r type!                                                                                 | Get device model                                               | r type!       | 4x4 hdmi seamless<br>matrix                                                                                                        |                 |
| r fw version!                                                                           | Get firmware version                                           | r fw version! | mcu fw version x.xx.xx                                                                                                             |                 |
| s power z!                                                                              | Power on/off the device,z=0~1<br>(z=0 power off, z=1 power on) | s power 1!    | power on<br>system initializing...<br>initialization finished!<br>mcu fw version x.xx.xx                                           |                 |
| r power!                                                                                | Get current power state                                        | r power!      | power on /power off                                                                                                                |                 |

| Command Code          | Function Description                                                                                                                                                                                                                                                                                                                                                                                                                                | Example            | Feedback                                                                                                      | Default Setting       |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------|-----------------------|
| s beep z!             | Enable/disable buzzer function, z=0~1(z=0 beep off, z=1 beep on)                                                                                                                                                                                                                                                                                                                                                                                    | s beep 1!          | beep on<br>beep off                                                                                           | beep on               |
| r beep!               | Get buzzer state                                                                                                                                                                                                                                                                                                                                                                                                                                    | r beep!            | beep on / beep off                                                                                            | beep on               |
| s lock z!             | Lock/unlock front panel button, z=0~1(z=0 lock off, z=1 lock on)                                                                                                                                                                                                                                                                                                                                                                                    | s lock 1!          | panel button lock on<br>panel button lock off                                                                 | panel button lock off |
| r lock!               | Get panel button lock state                                                                                                                                                                                                                                                                                                                                                                                                                         | r lock!            | panel button lock on/off                                                                                      |                       |
| s reboot!             | Reboot the device                                                                                                                                                                                                                                                                                                                                                                                                                                   | s reboot!          | reboot...<br><br>system initializing...<br>initialization finished!<br>mcu fw version x.xx.xx                 |                       |
| s reset!              | Reset to factory defaults                                                                                                                                                                                                                                                                                                                                                                                                                           | s reset!           | reset to factory defaults<br><br>system initializing...<br>initialization finished!<br>mcu fw version x.xx.xx |                       |
| s save preset z!      | Save preset z scenarios (z=1~8)                                                                                                                                                                                                                                                                                                                                                                                                                     | s save preset 1!   | save to preset 1!                                                                                             |                       |
| s recall preset z!    | Call saved preset z scenarios (z=1~8)                                                                                                                                                                                                                                                                                                                                                                                                               | s recall preset 1! | recall from preset 1                                                                                          |                       |
| s clear preset z!     | Clear preset z scenarios (z=1~8)                                                                                                                                                                                                                                                                                                                                                                                                                    | s clear preset 1!  | clear preset 1!                                                                                               |                       |
| r preset z!           | Get preset z information (z=1~8)                                                                                                                                                                                                                                                                                                                                                                                                                    | r preset 1!        | video/audio crosspoint                                                                                        |                       |
| <b>Output setting</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                                                                                               |                       |
| s in x av out y!      | Set input x to output y, x=1~4, y=0~4(0=all)                                                                                                                                                                                                                                                                                                                                                                                                        | s in 1 av out 2!   | input 1 -> output 2                                                                                           | ptp                   |
| r av out y!           | Get output y signal status y=0~4(0=all)                                                                                                                                                                                                                                                                                                                                                                                                             | r av out 0!        | input 1 -> output 1<br>input 2 -> output 2<br>.....<br>input 4 -> output 4                                    |                       |
| s output y res x!     | Set output y resolution (y=0~4, x=1~16)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4<br>1. 4096x2160p60,<br>2. 4096x2160p50,<br>3. 3840x2160p60,<br>4. 3840x2160p50,<br>5. 3840x2160p30,<br>6. 1920x1080p60,<br>7. 1920x1080p50,<br>8. 1920x1080i60,<br>9.1920x1080i50,<br>10. 1920x1200p60rb,<br>11.1360x768p60,<br>12.1280x800p60,<br>13.1280x720p60,<br>14.1280x720p50,<br>15.1024x768p60,<br>16. auto | s output 1 res 3!  | output 1 resolution:<br>3840x2160p60                                                                          | 3840x2160p60          |



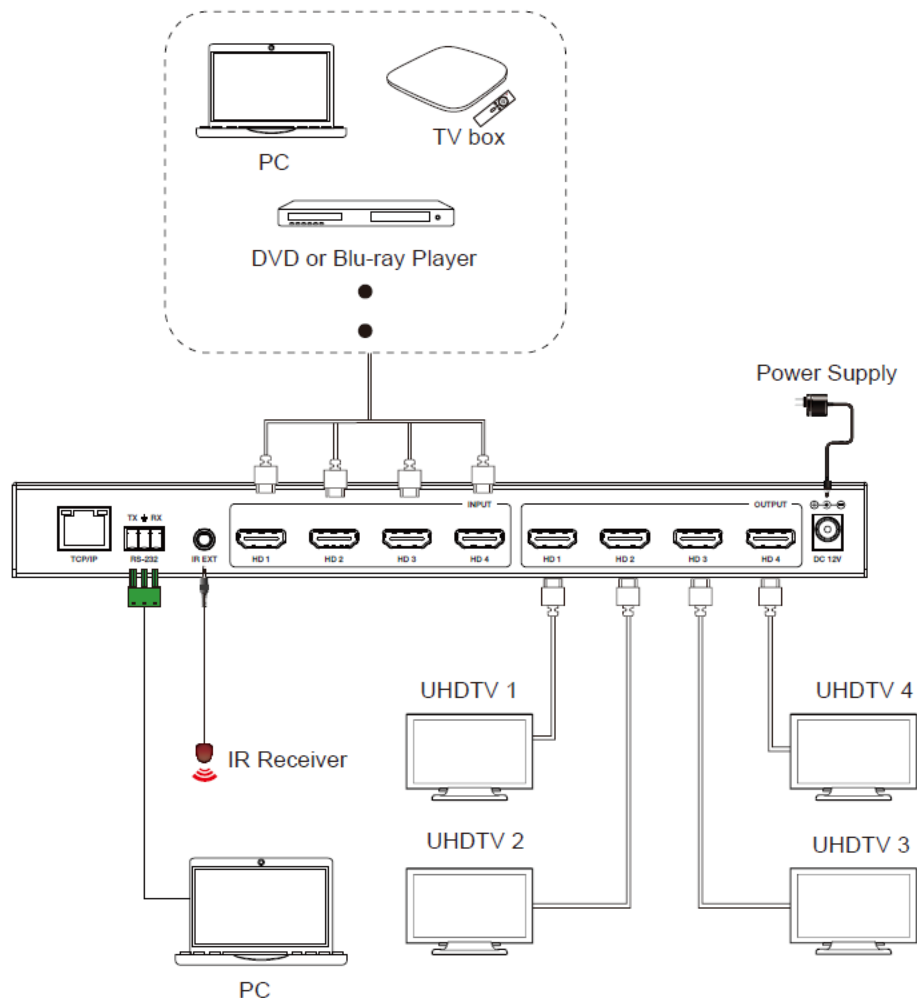
| Command Code          | Function Description                                                                                                                                                                                | Example               | Feedback                                                                                                                                                         | Default Setting                                                                                              |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| r output y res!       | Get output y resolution(y=0~4)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4                                                                               | s output 1 csc 1!     | output 1 resolution:<br>3840x2160p60                                                                                                                             |                                                                                                              |
| s output y csc x!     | Set output y color space<br>(y=0~4, x=1~4)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4<br>x=1. rgb444<br>x=2. ycbcr444<br>x=3. ycbcr422<br>x=4. ycbcr420 | s output 1 csc 1!     | output 1 csc: rgb444                                                                                                                                             | rgb444                                                                                                       |
| r output y csc!       | Get output y color space status.<br>(y=0~4)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4                                                                  | r output 1 csc!       | output 1 csc: rgb444                                                                                                                                             |                                                                                                              |
| s output y hdcp x!    | Set output hdcp(y=0~4, x=1~4)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4<br>x=1. hdcp 1.4<br>x=2. hdcp 2.2<br>x=3. follow sink<br>x=4. follow source    | s output 1 hdcp 1!    | output 1 hdcp:<br>hdcp 1.4                                                                                                                                       | hdcp1.4                                                                                                      |
| r output y hdcp!      | Get output y hdcp status.(y=0~4)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4                                                                             | r output 1 hdcp!      | output 1 hdcp:<br>hdcp 1.4                                                                                                                                       |                                                                                                              |
| s output y hmirror x! | Set output y h mirror(y=0~4,x=0,1)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4<br>x=0. h mirror off<br>x=1. h mirror on                                  | s output 1 hmirror 1! | output1 h mirror on                                                                                                                                              | output 1 h mirror<br>off<br>output 2 h mirror<br>off<br>output 3 h mirror<br>off<br>output 4 h mirror<br>off |
| s output y vmirror x! | set output y v mirror(y=0~4,x=0,1)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4<br>x=0. v mirror off<br>x=1. v mirror on                                  | s output 1 vmirror 0! | output1 v mirror off                                                                                                                                             | output 1 v mirror<br>off<br>output 2 v mirror<br>off<br>output 3 v mirror<br>off<br>output 4 v mirror<br>off |
| r output y mirror!    | Get output y mirror status(y=0~4)<br>y=0. output all<br>y=1. output 1<br>y=2. output 2<br>y=3. output 3<br>y=4. output 4                                                                            | r output 0 mirror!    | output 1 h mirror on,<br>v mirror off<br>output 2 h mirror on,<br>v mirror off<br>output 3 h mirror on,<br>v mirror off<br>output 4 h mirror on,<br>v mirror off |                                                                                                              |



| Command Code              | Function Description                                                                                                                                                                                                                                                                                                                     | Example               | Feedback                                                                                                                                                 | Default Setting                     |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Video wall setting</b> |                                                                                                                                                                                                                                                                                                                                          |                       |                                                                                                                                                          |                                     |
| s tw mode x!              | Set tv wall display mode(x=1~10)<br>x=1. 2x2 mode<br>x=2. 2x1 mode<br>x=3. 2x1-2 mode<br>x=4. 1x2 mode<br>x=5. 1x2-2 mode<br>x=6. 3x1 mode<br>x=7. 4x1 mode<br>x=8. 1x3 mode<br>x=9. 1x4 mode<br>x=10. matrix mode                                                                                                                       | s tw mode 1!          | tv wall mode: 2x2                                                                                                                                        | tv wall mode: 2x2                   |
| r tw mode!                | Get tv wall display mode                                                                                                                                                                                                                                                                                                                 | r tw mode!            | tv wall mode: 2x2                                                                                                                                        |                                     |
| s tw h bezel x!           | set tv wall horizontal bezel<br>(x=0~10,+,-)                                                                                                                                                                                                                                                                                             | s tw h bezel 0!       | tv wall horizontal bezel: 0                                                                                                                              | tv wall horizontal bezel: 0         |
| r tw h bezel!             | Get tv wall row bezel                                                                                                                                                                                                                                                                                                                    | r tw h bezel!         | tv wall horizontal bezel: 0                                                                                                                              |                                     |
| s tw v bezel x!           | Set tv wall vertical bezel<br>(x=0~10,+,-)                                                                                                                                                                                                                                                                                               | s tw v bezel 0!       | tv wall vertical bezel: 0                                                                                                                                | tv wall vertical bezel: 0           |
| r tw v bezel!             | Get tv wall vertical bezel                                                                                                                                                                                                                                                                                                               | r tw v bezel!         | tv wall vertical bezel: 0                                                                                                                                |                                     |
| s tw group y input x!     | Set tv wall group y display which source input(y=0~4, x=1~4)<br>y=0. tv wall group all<br>y=1. tv wall group 1<br>y=2. tv wall group 2<br>y=3. tv wall group 3<br>y=4. tv wall group 4<br><br>x=1. hdmi input 1<br>x=2. hdmi input 2<br>x=3. hdmi input 3<br>x=4. hdmi input 4                                                           | s tw group 1 input 1! | tv wall group 1 input: hdmi input 1                                                                                                                      | tv wall group 1 input: hdmi input 1 |
| r tw group y source!      | Get tv wall group y display which source input(y=0~4)<br>y=0. tv wall group all<br>y=1. tv wall group 1<br>y=2. tv wall group 2<br>y=3. tv wall group 3<br>y=4. tv wall group 4                                                                                                                                                          | r tw group 0 source!  | tv wall group 1 input: hdmi input 1<br>tv wall group 2 input: hdmi input 2<br>tv wall group 3 input: hdmi input 3<br>tv wall group 4 input: hdmi input 4 |                                     |
| s tw res x!               | Set tv wall resolution (x=1~15)<br>1. 4096x2160p60,<br>2. 4096x2160p50,<br>3. 3840x2160p60,<br>4. 3840x2160p50,<br>5. 3840x2160p30,<br>6. 1920x1080p60,<br>7. 1920x1080p50,<br>8. 1920x1080i60,<br>9.1920x1080i50,<br>10. 1920x1200p60rb,<br>11.1360x768p60,<br>12.1280x800p60,<br>13.1280x720p60,<br>14.1280x720p50,<br>15.1024x768p60, | s tw res 3!           | tv wall resolution: 3840x2160p60                                                                                                                         | 3840x2160p60                        |
| r tw res!                 | Get tv wall resolution                                                                                                                                                                                                                                                                                                                   | r tw res!             | tv wall resolution: 3840x2160p60                                                                                                                         | 3840x2160p60                        |

| Command Code                  | Function Description                                                  | Example                     | Feedback                                                                                                                                                                                | Default Setting |
|-------------------------------|-----------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Network setting</b>        |                                                                       |                             |                                                                                                                                                                                         |                 |
| r ipconfig!                   | Get the current ip configuration                                      | r ipconfig !                | ip mode: static<br>ip: 192.168.0.100<br>subnet mask: 255.255.255.0<br>gateway: 192.168.0.1<br>tcp/ip port=8000<br>telnet port=23<br>mac address: 00:1c:91:03:80:01                      |                 |
| r mac addr!                   | Get network mac address                                               | r mac addr!                 | mac address: 00:1c:91:03:80:01                                                                                                                                                          |                 |
| s ip mode z!                  | Set network ip mode to static ip or dhcp,z=0~1 (z=0 static, z=1 dhcp) | s ip mode 0!                | set ip mode:static.<br>(please use "s net reboot!" command or repower device to apply new config!)                                                                                      |                 |
| r ip mode!                    | Get network ip mode                                                   | r ip mode!                  | ip mode: static                                                                                                                                                                         |                 |
| s ip addr<br>xxx.xxx.xxx.xxx! | Set network ip address                                                | s ip addr<br>192.168.0.100! | set ip address:<br>192.168.0.100<br>(please use "s net reboot!" command or repower device to apply new config!)<br>dhcp on, device can't config static address, set dhcp off first.     |                 |
| r ip addr!                    | Get network ip address                                                | r ip addr!                  | ip address:<br>192.168.0.100                                                                                                                                                            |                 |
| s subnet<br>xxx.xxx.xxx.xxx!  | Set network subnet mask                                               | s subnet<br>255.255.255.0!  | set subnet mask:<br>255.255.255.0<br>(please use "s net reboot!" command or repower device to apply new config!)<br>dhcp on, device can't config subnet mask, set dhcp off first.       |                 |
| r subnet!                     | Get network subnet mask                                               | r subnet!                   | subnet mask:<br>255.255.255.0                                                                                                                                                           |                 |
| s gateway<br>xxx.xxx.xxx.xxx! | Set network gateway                                                   | s gateway<br>192.168.0.1!   | set gateway:<br>192.168.0.1<br>(please use "s net reboot!" command or repower device to apply new config!)<br>dhcp on, device can't config gateway, set dhcp off first.                 |                 |
| r gateway!                    | Get network gateway                                                   | r gateway!                  | gateway:192.168.0.1                                                                                                                                                                     |                 |
| s tcp/ip port x!              | Set network tcp/ip port (x=1~65535)                                   | s tcp/ip port 8000!         | set tcp/ip port:8000                                                                                                                                                                    |                 |
| r tcp/ip port!                | Get network tcp/ip port                                               | r tcp/ip port!              | tcp/ip port:8000                                                                                                                                                                        |                 |
| s telnet port x!              | Set network telnet port(x=1~65535)                                    | s telnet port 23!           | set telnet port:23                                                                                                                                                                      |                 |
| r telnet port!                | Get network telnet port                                               | r telnet port!              | telnet port:23                                                                                                                                                                          |                 |
| s net reboot!                 | Reboot network modules                                                | s net reboot!               | network reboot...<br>ip mode: static<br>ip: 192.168.0.100<br>subnet mask: 255.255.255.0<br>gateway: 192.168.0.1<br>tcp/ip port=8000<br>telnet port=10<br>mac address: 00:1c:91:03:80:01 |                 |

## 12. Application Example



**HDMI™**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

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