MUK88A-N

4K 8x8 HDMI 2.0 Matrix Switcher

User Manual

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Version: MUK88A-N_2017V1.0

Preface

Read this user manual carefully before using this product. Pictures shown in this manual are for reference only, different model and specifications are subject to real product.

This manual is only for operation instruction, not for any maintenance usage.

Trademarks

Product model, and its logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without the prior written.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

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1. Introduction

1.1 Brief Introduction

MUK88A is a professional 4K 8x8 HDMI2.0 Matrix Switcher with 8 HDMI inputs, 8 HDMI outputs, and 8 SPDIF audio outputs, which is designed for switching four HDMI2.0 and HDCP2.2 compliant signals. It also provides powerful EDID management to ensure reliable AV distribution and routing.

You can control the unit via the front panel, IR, RS232, TCP/IP and web-based GUI.

1.2 Features

- 8 SPDIF ports provide de-embedded HDMI audio output;
- Supports 4Kx2K@60Hz 4:4:4 & 1080p 3D signals;
- Supports HDMI 2.0, HDCP2.2 compatible, and is backward compatible to the earlier versions;
- Transmits 4Kx2K@60Hz 4:4:4 signal up to 16.4 feet (5m) via HDMI port;
- Provides powerful EDID management, built-in EDID can be invoked via DIP switcher on rear panel, RS232 command or web-based GUI;
- Controllable via front panel button, IR, RS232, TCP/IP or web-based GUI;
- LCD screen shows real-time I/O connection status;
- Convenient firmware upgrade through Micro USB port;
- Easy installation with rack-mounting design.

1.3 Package List

- 1 x MUK88A
- 6 x Screws
- 1 x RS232 cable (3-pin to DB9)
- 1 x IR remote
- 1 x User manual
- 2 x Mounting ears
- 4 x Plastic cushions
- 1 x IR receiver
- 1 x Power adaptor(DC 24V 2.71A)

📖 Confirm if the product and the accessories are all included, if not, please contact with the dealers.

2. Panel Description

2.1 Front Panel

Figure 2- 1 Front Panel

No.	Name	Description
①	FIRMWARE	Micro USB port for updating firmware.
②	Power Indicator	● Illuminates red when power on; ● Turns green in standby mode; ● Blinks red when upgrading.
③	IR sensor	Built-in IR sensor, receive IR signal sent from IR remote.
④	LCD Screen	Displays real-time operation status.
⑤	INPUT selector button	Total 8 input selector buttons, press one of buttons to switch input source.
⑥	OUTPUT selector button	Total 8 output selector buttons, press the buttons to select output channel.

Pictures shown in this manual are for reference only.

2.2 Rear Panel

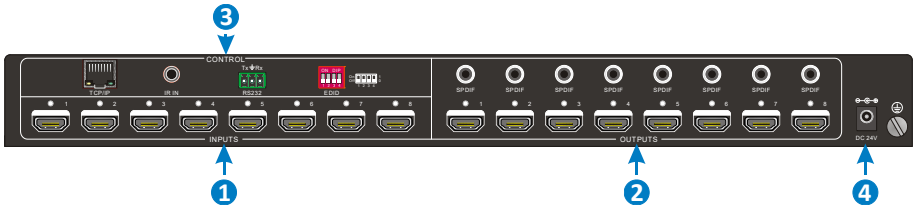


Figure 2- 2 Rear Panel

No.	Name	Description
①	INPUTS	HDMI input ports, 8 in total, connect with HDMI sources.
②	OUTPUTS	**SPDIF**: audio output ports for de-embedded HDMI audio, 8 in total.
		HDMI: 8 in total, connect with HDMI displays.
③	Control	**EDID:** 4-pin EDID DIP switchers to set EDID data, "1" stands for "On", "0" stands for "Off". Refer to *4. 2 EDID Configurarion* for more detials.
		RS232: Serial control port, connect with control device.
		IR IN: Connects with external IR receiver for using the IR remote to control the Matrix Switcher.
		TCP/IP: TCP/IP port for unit control.
④	DC 24V	Connect with 24VDC 2.71A power adaptor.
⑤	Ground	Connect to ground.

Pictures shown in this manual are for reference only.

3. System Connection

3.1 Usage Precautions

1) System should be installed in a clean environment with prop temperature and humidity.

2) All of the power switches, plugs, sockets and power cords should be insulated.

3) All devices should be connected before power on.

3.2 Connection Diagram

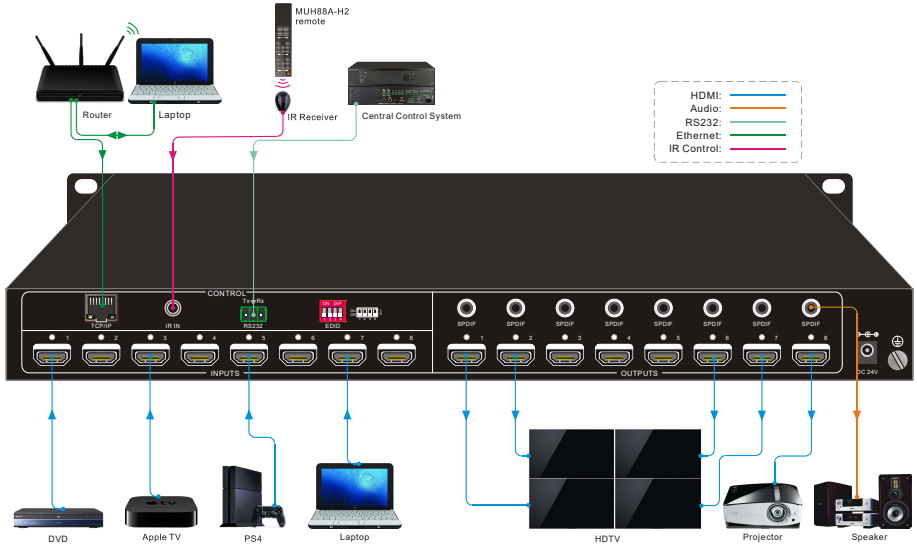


Figure 3- 1 Connection diagram

3.3 Connection Procedure

Step1. Connect HDMI sources (e.g. DVD/PS4/Laptop) to HDMI input ports with HDMI cables;

Step2. Connect HDMI displays (e.g. HDTV/Projector) to HDMI output ports with HDMI cables;

Step3. Connect speakers/ amplifiers to the SPDIF audio outputs with Toslink cables;

Step4. Connect the RS232 ports of control device (e.g. Central Control System, PC) and MUK88A to enable serial control.

Step5. Insert an IR receiver to the IR IN port to control this switcher via IR Remote.

Step6. Connect the TCP/IP ports of control device (e.g. Laptop) and MUK88A to enable

TCP/IP control.

Step7. Plug a 24VDC power adapter to the DC24V power port.

1) When connecting to HDMI2.0 sources, make sure the HDMI cable is compliant with HDMI2.0 to ensure reliable transmission;

2) Connect amplifiers that are capable to decode HDMI audio to the SPDIF ports, or there will be no output on the amplifiers.

3.4 System Applications

As its good performance in control and transmission, the MUK88A can be widely used in computer realm, monitoring, large screen displaying, conference system, television education and bank securities institutions etc.

4. Panel Button Control

4.1 I/O connection switching

The front panel features four input selection buttons and four output selection buttons for switching I/O connection.

1) **To convert one input to an output:**

   Example: Input 1 to Output 3

   → Press INPUTS 1 + OUTPUTS 3

2) **To convert an input to several outputs:**

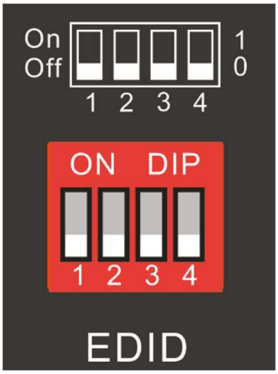
   Example: Convert Input 2 to Output 3 and 4

   → Press INPUTS 2 + OUTPUTS 3 + OUTPUTS 4

Note: Indicators of the pressed buttons will blink green for three times if the conversion is done, then it will be off. If the conversion failed, they will be off immediately.

4.2 EDID Configuration

The rear panel boasts a 4-pin EDID DIP switcher to manage EDID. The EDID data and its corresponding DIP switcher status are shown in the below list.



DIP Switcher

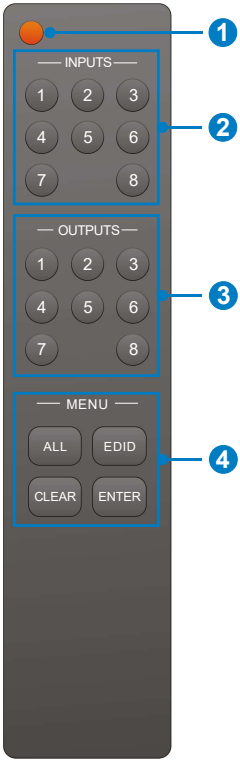
NO.	Status	EDID
0	0000	Pass though (default)
1	0001	720P 2D Pass-through CH
2	0010	720P 3D Pass-through CH
3	0011	1080P 2D Pass-through CH
4	0100	1080P 3D Pass-through CH
5	0101	4K@30HZ Pass-through CH
6	0110	4K@30HZ 2.0CH
7	0111	4K@30HZ 7.1CH
8	1000	4K@60HZ 4:2:0 Pass-through CH
9	1001	4K@60HZ 4:2:0 7.1CH
10	1010	4K@60HZ 4:4:4 Pass-through CH
11	1011	4K@60HZ 4:4:4 7.1CH
-	1111	Enable Software EDID management mode: RS232 control or Web-based GUI control.

4.3 I/O connection Inquiry

Press OUTPUTS button 1, 2, 3, 4,5,6,7 or 8 to inquiry its corresponding input, and then the indicator of the input button will turn green.

5. IR Control

The Matrix Switcher features one built-in IR receiver to receive IR signal from IR remote to enable IR control. If the external IR receiver or other IR control device need to be used, the IR IN port on rear panel can be connected.



① Standby button:

Press it to enter/ exit standby mode.

② INPUTS:
Input channel selection buttons, same with the corresponding front panel buttons

③ OUTPUTS:

Output channel selection buttons, same with the corresponding front panel buttons.

④ Menu buttons:

- **ALL**: Select all inputs/outputs.

To convert an input to all outputs:

Example: Input 1 to all Outputs:

→ Press INPUTS 1 + ALL + ENTER

- **EDID** management button:

1) One input port learns the EDID data from one output port.

Example: Input 2 learns EDID data from output 4:

→ Press EDID + INPUTS 2 + OUTPUTS 4+ ENTER

2) All input ports learn EDID data from one output port.

Example: All input ports learn EDID data from output 3:

→ Press EDID + ALL + OUTPUTS 3 + ENTER

- **CLEAR:** Withdraw button.
- **ENTER:** Confirm operation.

6. RS232 Control

6.1 Installation/uninstallation of RS232 Control Software

- **Installation** Copy the control software file to the computer connected with MUK88A.
- **Uninstallation** Delete all the control software files in corresponding file path.

6.2 Basic Settings

Firstly, connect MUK88A with necessary input devices and output devices. Then, connect it with a PC installed RS232 control software. Double-click the software icon to run this software.

Here we take the software **CommWatch.exe** as example. The icon is showed as below:

Figure 6-1 Icon of CommWatch

The interface of the control software is showed as below:

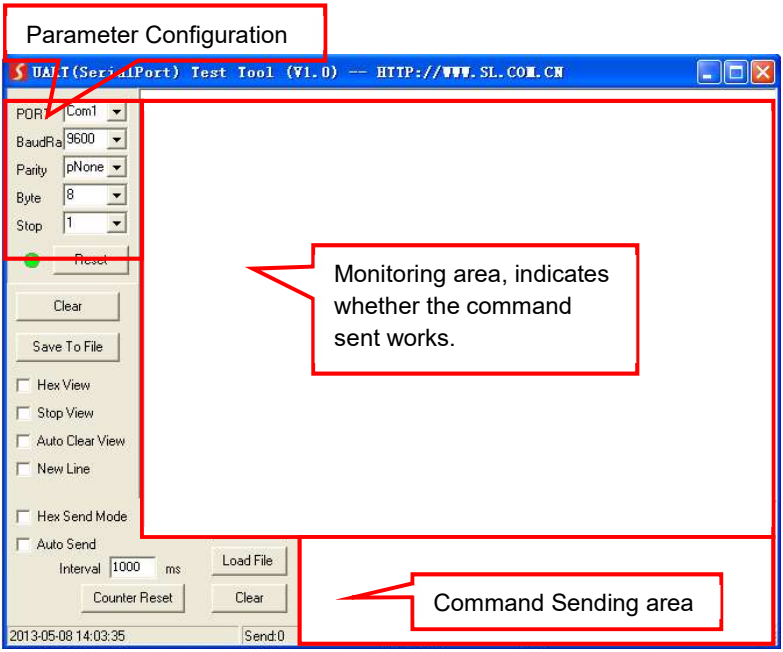


Figure 6-2 Control Interface of CommWatch

Set the parameters (baud rate, data bit, stop bit and parity bit) correctly to ensure reliable RS232 control.

6.3 RS232 Communication Commands

1) Case-sensitive.

2) "[", "]" in the commands are for easy recognition only and not necessary in real operations. Other symbols including ".", ",", "/", "%", ";", "^". are parts of the commands.

3) Feedbacks listed in the column "Feedback Example" are only for reference, feedbacks may vary according to different operations.

4) Dial the EDID switcher to "1111" before sending commands pertaining to software EDID management (with grey background)

Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

6.3.1 System Commands

Command	Function	Feedback Example
/*Type;	Query the model.	MUK88A
/^Version;	Query the version of firmware	VX.X.X
Demo.	Switch to the "demo" mode, convert input and output in turn like1B1, 1B2, …4B3, 4B4, 1B1… and so on .The switching interval is 2 seconds.	Demo Mode AV:01->01 AV:01->02 AV:01->03 AV:01->04 AV:02->01 … Normal Mode
Undo.	To cancel the current operation.	Undo Ok!
PWON.	Work in normal mode.	PWON
PWOFF.	Enter into standby mode, send the "PWON." to start.	PWOFF
STANDBY.	Enter into standby mode, press other buttons or send other commands to	STANDBY

	start.)	
%9962.	Query the power status	STANDBY/PWOFF/ PWON
%9964.	Query the IP address.	IP:XXX.XXX.X.XXX
%0911.	Reset to factory default.	Factory Default

6.3.2 Lock/unlock Commands

Command	Function	Feedback Example
/%Lock;	Lock the front panel buttons.	System Locked!
/%Unlock;	Unlock the front panel buttons.	System Unlock!
%9961.	Query the system locking status.	System Locked/ Unlock!

6.3.3 Switching Commands

Command	Function	Feedback Example
[x]All.	Transfer signals from the input channel [x] to all output channels	X To All. (X=01~08)
All#.	Transfer all input signals to the corresponding output channels respectively like 1->1, 2->2…	All Through.
All$.	Switch off all the output channels.	All Closed.
[x]#.	Transfer signals from the input channel [x] to the output channel [x].	X Through. (X=01~08)
[x]$.	Switch off the output channel [x].	X Closed. (X=01~08)
[x]@.	Switch on the output channel [x].	X Open. (X=01~08)
All@.	Switch on all output channels.	All Open. Out 01 02 03 04 In 01 01 01 01 Out 05 06 07 08 In 01 01 01 01
[x1]V[x2].	Switch the input channel [x1] to one or several output channels ([x2], separate output channels with comma).	AV: X1-> X2 (X1/X2=01~08)
Status[x].	Query the I/O connection status of output [x]	AV: Y-> X (X=01~08, Y=01~08)
Status.	Query the input channel to the output channels one by one.	AV:01->01

		AV:01->02 AV:01->03 AV:01->04 AV:01->05 AV:01->06 AV:01->07 AV:01->08
%9971.	Query the connection status of the inputs.	In 01 02 03 04 Connect Y N Y Y In 05 06 07 08 Connect Y Y Y N
%9972.	Query the connection status of the outputs.	Out 01 02 03 04 Connect Y Y Y Y Out 05 06 07 08 Connect Y Y Y Y
%9975.	Query the I/O connection status.	Out 01 02 03 04 In 03 03 03 03 Out 05 06 07 08 In 03 03 03 03
%9976.	Query the output resolution.	Resolution Out 1 3840x2160P Out 2 3840x2160P Out 3 3840x2160P Out 4 3840x2160P Out 5 3840x2160P Out 6 3840x2160P Out 7 3840x2160P Out 8 3840x2160P

6.3.4 Scene Commands

Command	Function	Feedback Example
Save[Y].	Save the present operation to the preset command [Y], ranges from 1 to 10.	Save To FY (Y=1-10)
Recall[Y].	Recall the preset command [Y].	Recall From FY (Y=1-10)
Clear[Y].	Clear the preset command [Y].	Clear FY (Y=1-10)

6.3.5 HDCP Compliance

Command	Function	Feedback Example
/%[Y]/[X]:[Z].	HDCP management command. Y=O is for output; X=1~8 is the number of the port, if the X=ALL, it means all ports; Z is for HDCP compliant status, the value may be 1 (HDCP compliant) or 0 (not HDCP compliant).	/%[Y]/[X]:[Z].
%0801.	Auto HDCP management, activate carrier native mode	%0801
%9973.	Query the HDCP status of the input signals.	In 01 02 03 04 HDCP Y N Y N In 05 06 07 08 HDCP Y Y Y N
%9974.	Query the HDCP status of the output signals.	Out 01 02 03 04 HDCP Y Y Y Y Out 05 06 07 08 HDCP Y Y Y Y

6.3.6 EDID Configuration

The DIP switcher status should be set as 1111 to enable Software EDID management mode: RS232 control or Web-based GUI control.

Command	Function	Feedback Example
EDIDH[x]B[y].	Input port [y] learns the EDID from output port [x]. If the EDID data is available and the audio part supports not only PCM mode, then force-set it to support PCM mode only. If the EDID data is not available, then set it as initialized EDID data.	EDIDH[x]B[y]
EDIDPCM[x].	Set the audio part of input port [x] to PCM format in EDID database.	EDIDPCM[x]
EDIDG[x].	Get EDID data from output [x] and display the output port number.	Hexadecimal EDID data and carriage return character
EDIDMInit.	Restore the factory default EDID data for each input.	EDIDMInit.
EDIDM[X]B[Y].	Manually EDID switching. Enable input [Y] to learn the EDID data of output [X]. If the EDID data is not available, then set it as initialized EDID data.	EDIDM[X]B[Y]
EDID/[x]/[y].	Set the EDID data of input port [x] to built-in EDID No. [y]. [y]=0~11, correspond to the 12 embedded EDID data separately	EDID/[x]/[y]
EDIDUpgrade[x].	Upgrade EDID data via the RS232 port. X represents the input port, and x=9 represents all input ports. When the switcher receives the command, it will show a message to prompt you to send EDID file (.bin file). Operations will be canceled after 10 seconds.	Please send the EDID file EDID Upgrade OK!
GetInPortEDID[X]	Get the EDID data of input [x], [x]=1~8	
%9979.	Get the DIP switcher status	EDID RS232 GUI CONTROL 1111

6.3.7 Enable/disable Digital Audio

Command	Function	Feedback Example
`DigitAudioON[x].`	Enable SPDIF audio output port x. ● X=1~8, enable the port x. ● X=9, enable all ports.	DigitAudio ON with [x]/ ALL Outputs
`DigitAudioOFF[x].`	Disable SPDIF audio output port x. ● X=1~8, disable the port x. ● X=9, disable all ports.	DigitAudio OFF with [x]/ ALL Outputs
`%9977.`	Query the status of digital audio of output channels.	Out 01 02 03 04 Audio Y Y Y Y Out 05 06 07 08 Audio Y Y Y Y

7. TCP/IP Control

7.1 Control Modes

TCP/IP default settings: IP is 192.168.0.178, Gateway is 192.168.0.1, and Serial Port is 4001. IP can be changed as you need, Serial Port cannot be changed.

- **Controlled by single PC**

Connect a computer to the TCP/IP port of the MUK88A, and set its network segment to the same as the default IP of the MUK88A (192.168.0.178).

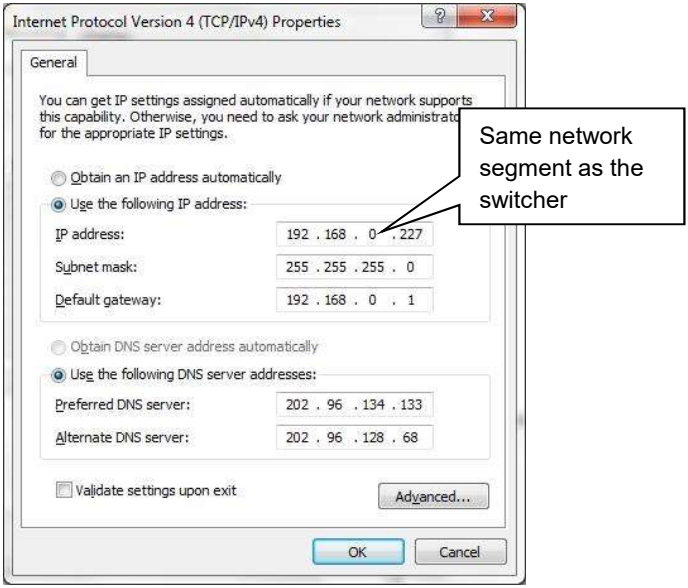


Figure 7-1 Modify the IP of PC

- **Controlled by PC(s) in LAN**

The MUK88A can be connected with a router to make up a LAN with the PC(s), this make it able to be controlled in a LAN. When control, just make sure the MUK88A's network segment is the same with the router. Please connect as the following figure for LAN control.

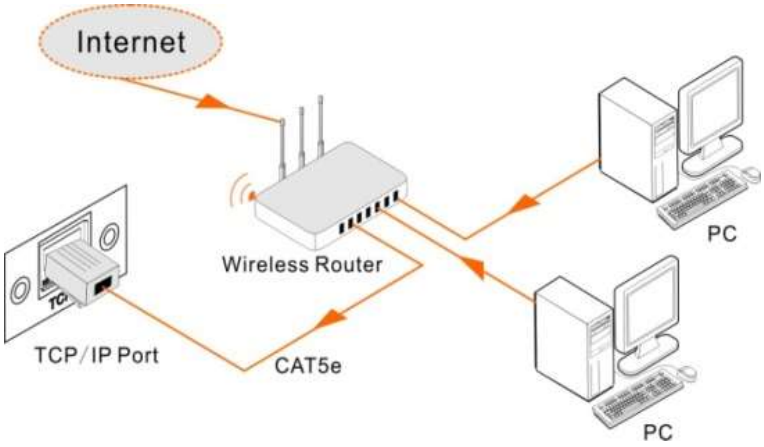


Figure 7-2 Connect to LAN

Step1. Connect the TCP/IP port of the MUK88A to Ethernet port of PC with twisted pair.

Step2. Set the PC's network segment to the same as the MUK88A. Do please remember the PC's original network segment.

Step3. Set the MUK88A's network segment to the same as the router.

Step4. Set the PC's network segment to the original one.

Step5. Connect the MUK88A and PC(s) to the router. In the same LAN, each PC is able to control the MUK88A asynchronously.

Then it's able to control the device via a TCP/IP communication software.

7.2 TCP/IP Communication Software Control

(Exampled by TCPUDP software)

1) Connect a computer with TCPUDP software to MUK88A. Open the TCPUDP software (or any other TCP/IP communication software) and create a connection, enter the IP address and port of MUK88A (default IP: 192.168.0.178, port:4001):

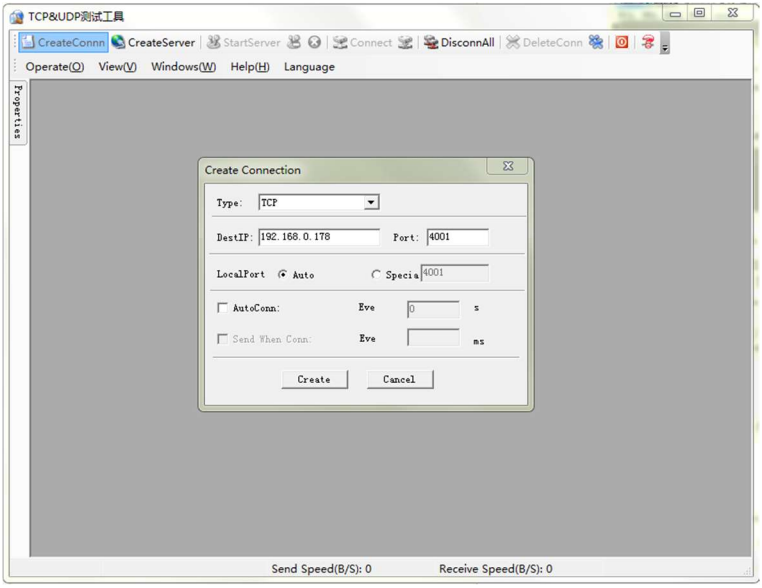


Figure 7-3 Connect to TCPUDP

2) Enter commands in designed area to control MUK88A, see as below:

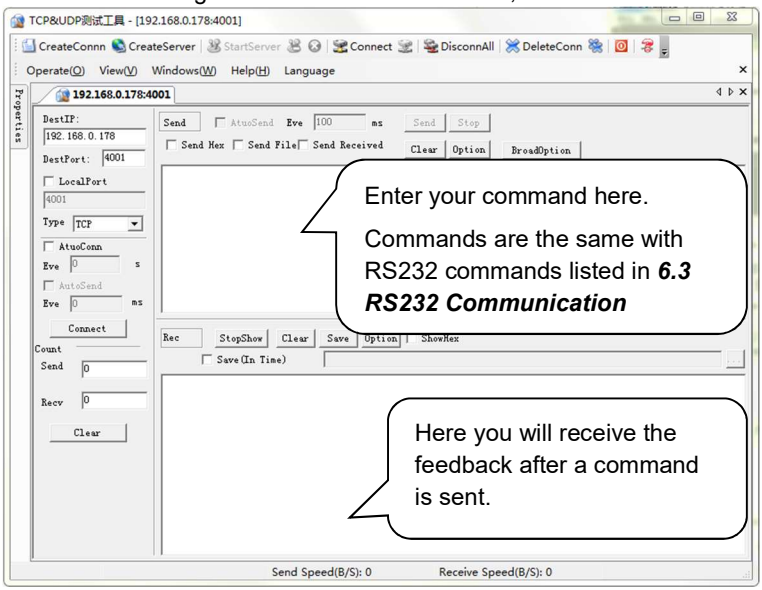


Figure 7-4 Control interface of TCPUDP

7.3 Web-based GUI Control

MUK88A can be controlled via web-based GUI It allows users to interact with MUK88A through graphical icons and visual indicators.

Access GUI interface through any one of the following methods:

1) Access through web browser: Type the default IP ***192.168.0.178*** in the browser at first login. The IP address also can be found via sending "%9964." on RS232 control software.

2) Access through UPnP: Go to My Network Place in your PC, and click the icon as below:

🕮 PCs running Windows XP system may occur issues in finding UPnP icon, follow these steps to switch on UPnP protocol:

1) Add UPnP component: go to "**Control Panel**" -> double-click "**Add/ Delete Programs**" -> double-click "Add/ Delete windows component" ->tick "UPnP" -> click "Next" -> click "OK"

2) Enable Windows Firewall: go to "**Control Panel**" -> double-click "**Windows Firewall**" -> click "Others" -> tick "UPnP framework"

3) Enable UPnP auto-starting: go to "**Control Panel**" -> double-click "**Administrative Tools** " -> double-click "Services" -> find and click **SSDP Discovery Servic** and **Universal Plug and Play Device Host** -> click "OK"

   UPnP will now automatically start when you turn on your computer.

4) Reboot the device.

Type **192.168.0.178** in your browser, it will enter the log-in interface shown as below:

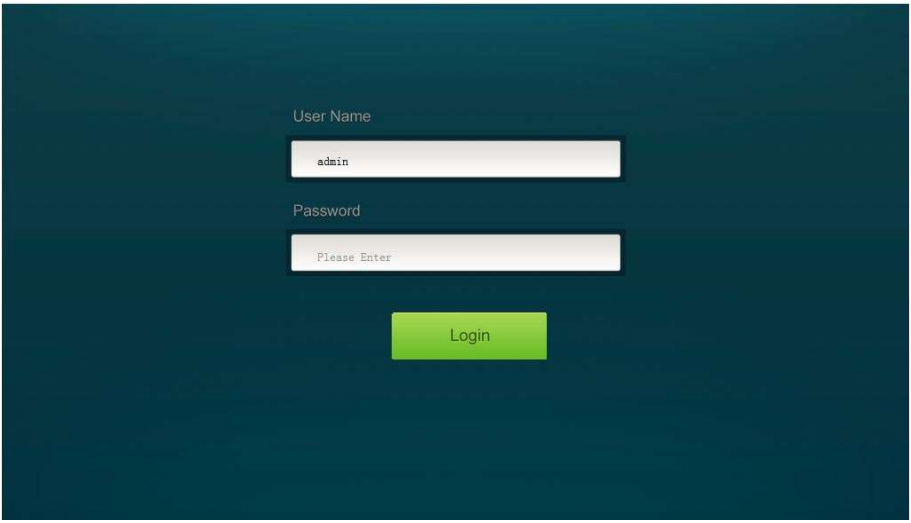


Figure 7-5 Login GUI

This system divides into administrator and user mode.

Administrator mode: User name: admin; Password: admin (default setting)

User mode: User name: user; Password: user (default setting)

NOTE: Log in as admin can access more configuration interfaces than user. Here is a brief introduction to the interfaces.

7.3.1 Scene Setting

Type the user name: **admin**, password: **admin**, and then click **LOGIN**, it will show the Scene menu as shown below:

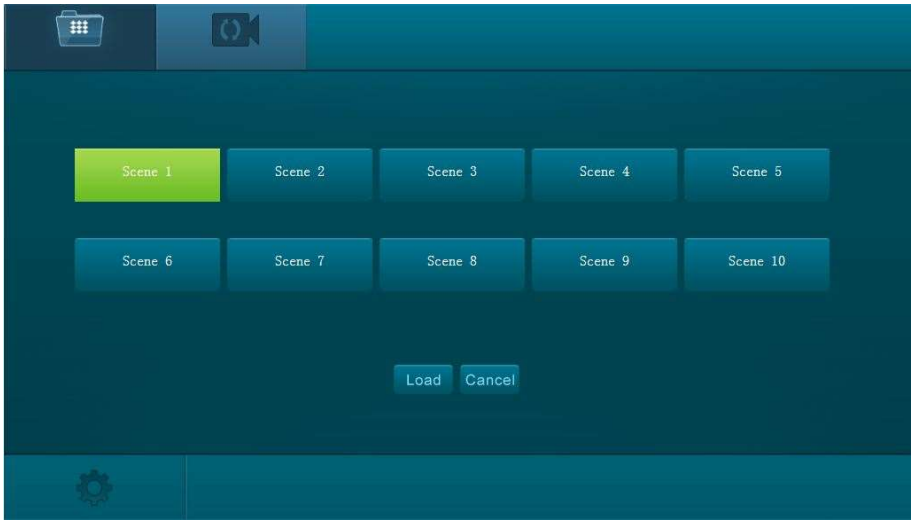


Figure 7-6 Scene Menu

All ten scenes are shown in above interface.

Select a scene and then click "**Load**" can invoke the selected scene.

Click "**Cancel**" to cancel the current operation.

7.3.2 I/O connection switching

Click to enter the following interface, it provide intuitive I/O connection switching.

Figure 7-7 Control Menu

The button matrix displays every possible connection between every input and output; users can carry on the connections by clicking corresponding button.

Buttons 1~8 at the right-bottom corner provides quick saving and recall for overall connection status. For example:

Step1: Select button1 at INPUT column

Step2: Select button 2, 3 and 4 at OUTPUT column (If all OUTPUT ports in needed, you only need to click “All”.)

Step3: Choose a scene that you want to save.

Step4: Click “**Confirm**” to save the setting or Click “**Clear**” to clear set up.

7.3.3 EDID Configuration

1) Click setting button to enter configuration interfaces.

Figure 7-8 Embedded EDID

All embedded EDID of MUK88A are shown in the above interface. User can select EDID in accordance with actual needs.

2) Select “**EDID Copy”** to enter the following interface:

Figure 7-9 Copy EDID

The EDID of INPUT device can be gained from OUTPUT devices.

Step1: Select one OUTPUT device that you want to copy its EDID.

Step2: Select one or more input devices that need to gain EDID. When select To All inputs, all input devices will copy the EDID from output device.

Step3: Click “**Confirm**” to save the setting or click “**Cancel**” to cancel operation.

7.3.4 Audio Output

Select “**Audio Out**” to enter the following interface to turn on/off the Audio Output.

Figure 7-10 Audio Out

7.3.5 Status Setting

- Product Name& Model:

Click “**Status**” to enter the following interface to modify the name and mode of this machine, and then they will be display in LCD screen.

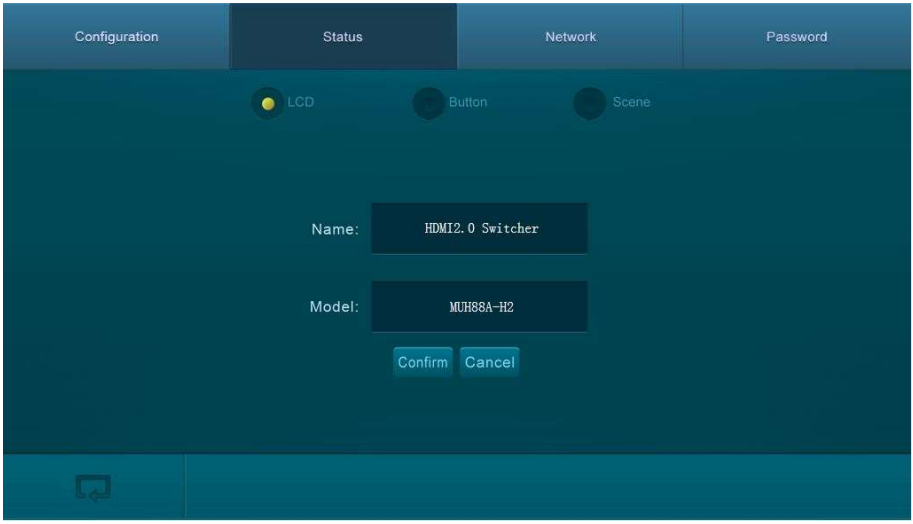


Figure 7-11 Status- LCD

- Button label:

Select “**Button**” to enter the following interface to modify the name of buttons.

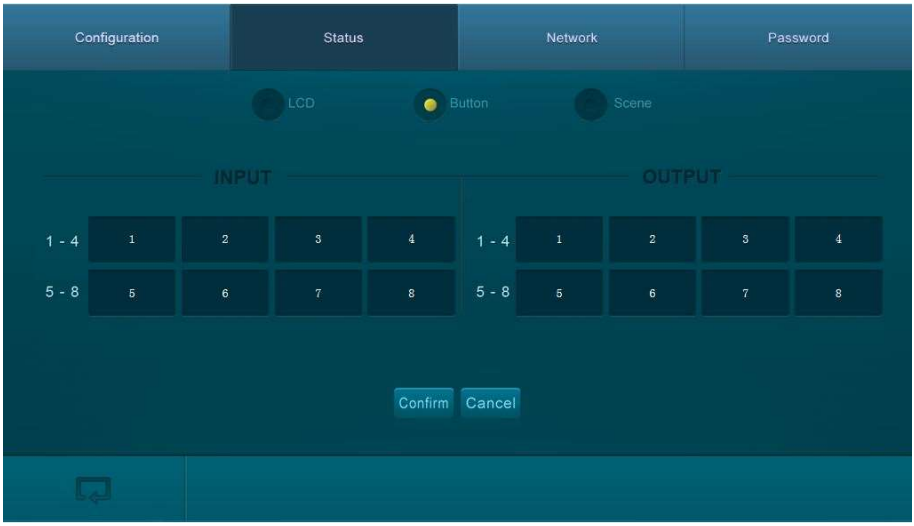


Figure 7-12 Status- Button

- Scene name:

Select “**Scene**” to enter the following interface to modify the name of scenes.

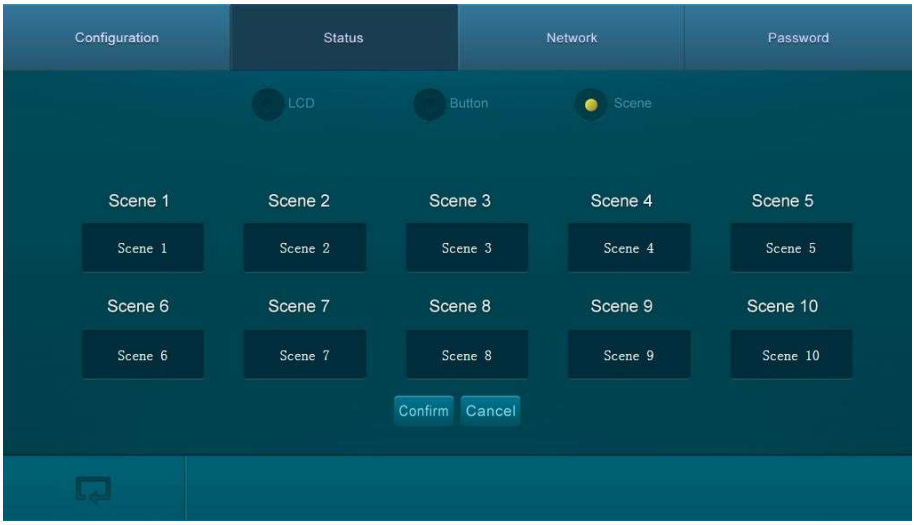


Figure 7-13 Status-Scene

7.3.6 Network Configuration

Click “**Network**” to enter the following interface to inquire and configure network settings including MAC address, IP address, subnet mask, and Gateway.

Figure 7-14 Network

7.3.7 Password Modification

Click “**Password**” to enter the following interface to inquire and modify the admin or user password.

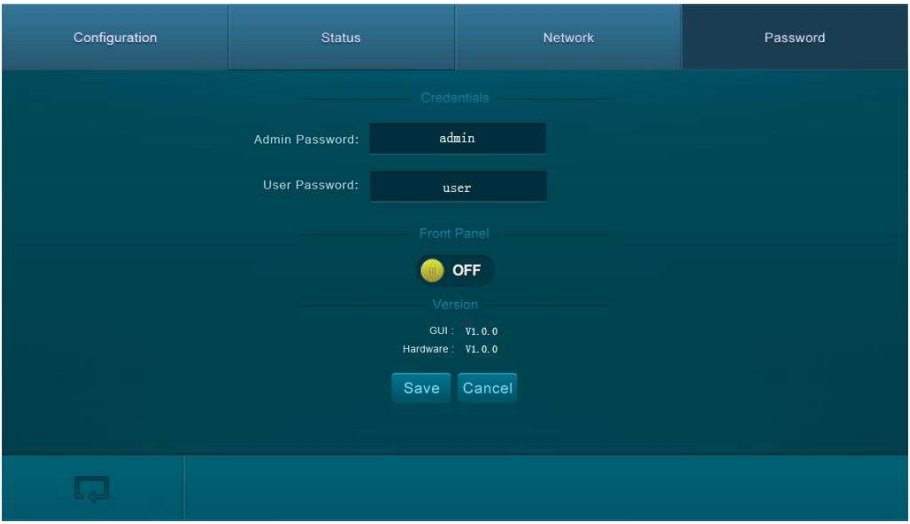


Figure 7-15 Password

In the above interface, turn on the Front Panel to lock all buttons of machine, they cannot be operated.

7.4 TCP/IP Configuration

IP address, subnet mask, and Gateway of MUK88A can be modified via GUI from the above description, but beyond that users can configure the IP port, including IP reset, password reset, and IP module firmware update on the WebServer.

Type the designed website (Default: 192.168.0.178:100, changeable) in your browser. Enter correct username and password to log in the WebServer:

Username: admin; **Password**: admin

Here is the main configuration interface of the WebServer:

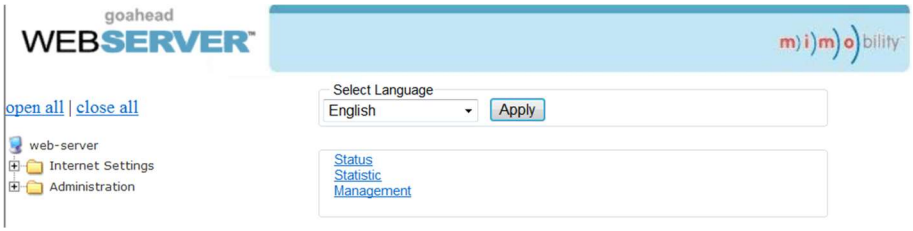


Figure 7-16 TCP/IP Configuration

7.5 GUI Update

GUI for MUK88A supports online update in http://192.168.0.178:100. Type the username and password (the same as the GUI log-in settings, modified password will be available only after rebooting) to log in the configuration interface. After that, click **Administration** at the source menu to get to **Upload Program** as shown below:

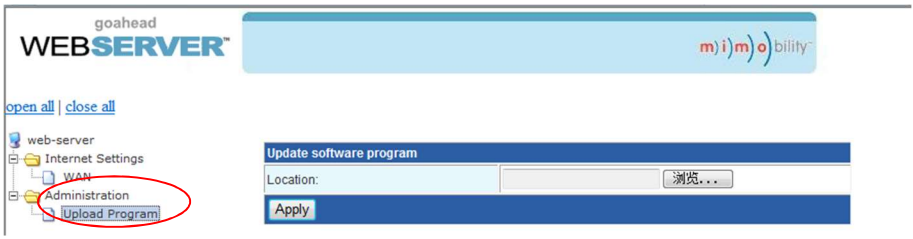


Figure 7-17 GUI Update

Select the desired update file and press Apply, it will start upgrading then.

8. Firmware Upgrade through USB port

MUK88A boasts a USB port for firmware upgrade on the rear panel.

Preparation: copy the upgrade software DfuSe Demonstration& upgrade file (.dfu) to control PC.

Steps to upgrade the device:

Step1. Connect the control PC to the USB port of MUK88A.

Step2. Reboot MUK88A to enter upgrade mode. Press and hold button **2**& **3** when rebooting. The power indicator will keep blinking in upgrade mode.

Step3. Double-click the icon of upgrade software DfuSe Demonstration (see the figure below).

Figure 8-1 Icon of DfuSe Demonstration

It will pop up the following window:

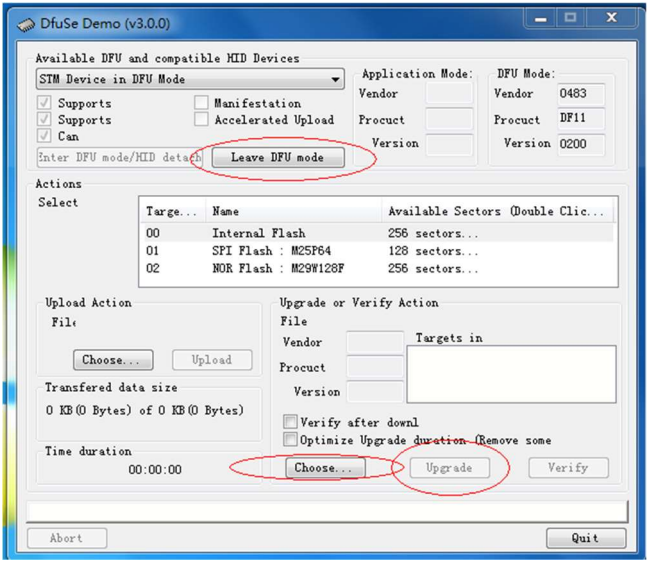


Figure 8-2 Upgrade firmware via DfuSe Demonstration

Step4. Click **Choose…** to load desired upgrade file (.dfu).

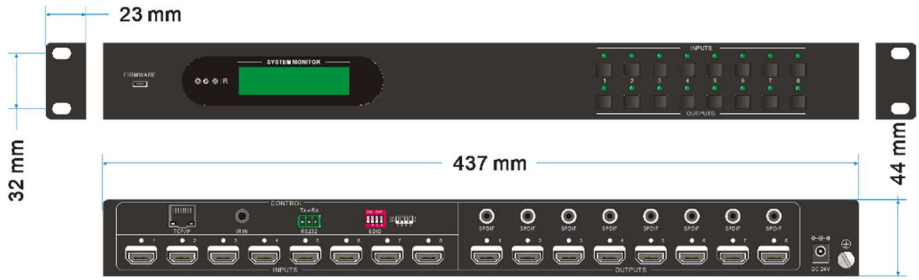
Step5. Click **Upgrade** to start.

Make sure the button **Leave DFU mode** is available to ensure control PC and MUK88A are connected successfully.

9. Specification

Input Signal	8 HDMI
Input Connector	Female Type-A HDMI
Output Signal	8 HDMI; 8 SPDIF audio
Output Connector	Female Type-A HDMI; COAX connector
Control Signal	1 IR IN; 1 TCP/IP; 1 RS232
Control Connector	3.5mm mini jack; female RJ45; 3-pin pluggable terminal block
Video Signal	HDMI2.0& HDCP2.2
Audio Signal	Dolby Digital, DTS, DTS-HD
General	
EDID Management	In-built EDID data and manual EDID management
Resolution Range	640x480@60Hz ~ 4Kx2K@60Hz 4:4:4, 1080P 3D
HDMI Cable Length	≤5m
Power Supply	24VDC, 2.71A
Power Consumption	21W
Dimension (W*H*D)	437mm × 44mm × 236.5mm
Weight	1.82Kg
Temperature	-10℃~ 55℃
Reference Humidity	10% ~ 90%

10. Panel Drawing



11. Troubleshooting & Maintenance

Problems	Causes	Solutions
Color losing or no video signal output	The connecting cables may not be connected correctly or it may be broken.	Check whether the cables are connected correctly and in working condition.
	Fail or loose connection	Make sure the connection is good.
No output image when switching	No signal at the input / output end	Check with oscilloscope or multimeter if there is any signal at the input/ output end.
	Fail or loose connection	Make sure the connection is good.
	Input source is with HDCP while the HDCP compliance is switched off.	Send command /%[x]:[1]. to change HDCP compliance status.
	The display doesn't support the input resolution.	Switch for another input source or enable the display to learn the EDID data of the input.
No output on the amplifiers connected to audio output ports	The amplifiers are not able to decode HDMI audio.	Change for amplifiers that are capable to decode HDMI audio.
Cannot control the device via front panel buttons	Front panel buttons are locked.	Send command /%Unlock; to unlock.
Cannot control the device via IR remote	The battery has run off.	Change for new battery.
	The IR remote is broken.	Send it to authorized dealer for repairing.
	Beyond the effective range of the IR signal or not pointing at the IR receiver	Adjust the distance and angle and point right at the IR receiver.
Power Indicator remains off when powered on	Fail or loose power connection	Check whether the cables are connected correctly

EDID management does not work normally	The HDMI cable is broken at the output end.	Change for another HDMI cable which is in good working condition.
There is a blank screen on the display when switching	The display does not support the resolution of the video source.	Switch again.
		Manage the EDID data manually to make the resolution of the video source automatically compliant with the output resolution.
Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong connection	Check to ensure the connection between the control device and the unit
	Wrong RS232 communication parameters	Type in correct RS232 communication parameters: Baud rate:9600; Data bit: 8; Stop bit: 1; Parity bit: none
	Broken RS232 port	Send it to authorized dealer for checking.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.
Cannot control the device by RS232 / IR remote / front panel buttons	The device has already been broken.	Send it to authorized dealer for repairing.

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.

12. After-Sales Service

If there are some problems when running the device, please check and deal with the problems reference to this user manual.

1) **Product Limited Warranty:** ALFATRON warrants that its products will be free from defects in materials and workmanship for **Seven years** (check the SN mark on the product).

   Proof of purchase in the form of a bill of sale or receipted invoice must be presented to obtain warranty service.

2) **What the warranty does not cover:**
   - Warranty expiration.
   - Factory applied serial number has been altered or removed from the product.
   - Damage, deterioration or malfunction caused by:
     - Normal wear and tear
     - Use of supplies or parts not meeting our specifications
     - No certificate or invoice as the proof of warranty.
     - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
     - Damage caused by force majeure.
     - Servicing not authorized by ALFAtron
     - Other causes which does not relate to a product defect
   - Delivery, installation or labor charges for installation or setup of the product

3) **Technical Support:** Email to our after-sales department or make a call, please inform us the following information about your cases.
   - Product version and name.
   - Detailed failure situations.
   - The formation of the cases.

Limited warranty in respect of ALFAtron Products Only

1.1 This limited warranty covers defects in materials and workmanship in this product.

1.2 Should warranty service be required, proof of purchase must be presented to the Company. The serial number on the product must be clearly visible and not have been tampered with in any way whatsoever.

1.3 This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by the Company to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover equipment enclosures, cables or accessories used in conjunction with this product.

This limited warranty does not cover the cost of normal maintenance. Failure of the product due to insufficient or improper maintenance is not covered.

1.4 The Company does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

1.5 Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

1.6 Unless otherwise specified, the goods are warranted in accordance with the manufacturer’s product specific warranties against any defect attributable to faulty workmanship or materials, fair wear and tear being excluded.

1.7 This limited warranty only covers the cost of faulty goods and does not include the cost of labour and travel to return the goods to the Company’s premises.

1.8 In the event of any improper maintenance, repair or service being carried out by any third persons during the warranty period without the Company's written authorization, the limited warranty shall be void.

1.9 A 7 (seven) year limited warranty is given on the aforesaid product where used correctly according to the Company's instructions, and only with the use of the Company's components.

1.10 The Company will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1.10.1 Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labour to complete the repair and restore this product to its proper operating condition.; or

1.10.2 Replace this product with a direct replacement or with a similar product deemed by the Company to perform substantially the same function as the original product; or

1.10.3 Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

1.11 The Company is not obligated to provide the Customer with a substitute unit during the limited warranty period or at any time thereafter.

1.12 If this product is returned to the Company this product must be insured during shipment, with the insurance and shipping charges prepaid by the Customer. If this product is returned uninsured, the Customer assumes all risks of loss or damage during shipment. The Company will not be responsible for any costs related to the removal or reinstallation of this product from or into any installation. The Company will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

1.13 Please be aware that the Company's products and components have not been tested with competitor's products and therefore the Company cannot warrant products and/or components used in conjunction with competitor's products.

1.14 The appropriateness of the goods for the purpose intended is only warranted to the extent that the goods are used in accordance with the Company's installation, classification and usage instructions.

1.15 Any claim by the Customer which is based on any defect in the quality or condition of the goods or their failure to correspond with specification shall be notified in writing to the Company within 7 days of deliver or (where the defect or failure was not apparent on reasonable inspection by the Customer) within a reasonable time after discovery of the defect or failure, but, in any event, within 6 months of delivery.

1.16 If delivery is not refused, and the Customer does not notify the Company accordingly, the Customer may not reject the goods and the Company shall have no liability and the Customer shall pay the price as if the goods had been delivered in accordance with the Agreement.

1.17 THE MAXIMUM LIABILITY OF THE COMPANY UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT.