USER MANUAL

AVS-HDMI2-8X8

VIDEO MATRIX SWITCHER 8X8 HDMI 2.0

24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT BLACKBOX.COM

BLACK BOX®

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SAFETY PRECAUTIONS

To ensure the best performance 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 product. This may cauase electrical shock or burn.
- Using supplies or parts not meeting the product's 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 location with proper ventilation to avoid damage caused by overheating.
- Keep the product 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 the housing, unplug the unit immediately.
- Do not twist or pull by force the ends of the 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. Treat the product as normal electrical waste.

CHAPTER 1: SPECIFICATIONS

TABLE 1-1. SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Input	
Input Signal	(8) HDMI
Input Connector	(8) HDMI Type A female
Output	
Output	(8) HDMI, (8) SPDIF audio
Output Connector	(8) HDMI Type A female, (8) coax
Control	
Control Signal	(1) IR IN, (1) TCP/IP, (1) RS-232
Control Connector	(1) 3.5-mm mini jack, (1) RJ-45 female, (1) 3-pin pluggable terminal block
Video Signal	HDMI 2.0 and HDCP 2.2
Audio Signal	Dolby Digital, DTS, DTS-HD
Power	
AC Adapter Input Power	100 to 240 VAC, 50/60 Hz
Input Power	24 VDC, 2.71 A
Power Consumption	21 W (max.)
General	
EDID Management	Built-in EDID data and manual EDID management
Resolution	640 x 480 @ 60 Hz, 4K x 2K@ 60 Hz 4:4:4, 1080p 3D
HDMI Cable Length	< or = 1.5 ft. (5 m)
Operating Temperature	14 to 131° F (-10 to 55° C)
Humidity	10 to 90% relative humidity
Dimensions	1.7" H x 17.2" W x 9.3 D (4.4 x 43.7 x 23.6 cm)
Weight	4.0 lb. (1.82 kg)

CHAPTER 2: OVERVIEW

2.1 INTRODUCTION

The Video Matrix Switcher 8 x8, HDMI 2.0, 4K 60 Hz 4:4:4, HDR, Audio is a professional 4K 8 x 8 HDMI2.0 Matrix Switcher with 8 HDMI inputs, 8 HDMI outputs, and 8 SPDIF audio outputs. It is designed for switching eight HDMI 2.0 and HDCP 2.2 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.

2.2 FEATURES

- Eight SPDIF ports provide de-embedded HDMI audio output
- Supports 4K x 2K @ 60 Hz 4:4:4 and 1080p 3D signals
- Supports HDMI 2.0, HDCP 2.2 compatible, and is backward compatible to the earlier versions
- Transmits 4K x 2K @ 60 Hz 4:4:4 signal up to 16.4 feet (5 m) via HDMI port
- Provides powerful EDID management, built-in EDID can be invoked via DIP switcher on rear panel, RS-232 command or web-based GUI
- Controllable via front panel button, IR, RS-232, 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 rackmounting design

2.3 WHAT'S INCLUDED

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 877-877-2269 or info@blackbox.com

- (1) Video Matrix Switcher 8 x 8, HDMI 2.0, 4K 60 Hz 4:4:4, HDR, Audio
- (6) screws
- (1) RS-232 cable (3-pin to DB9)
- (1) IR remote
- (2) mounting ears
- (4) plastic cushions
- (1) IR Receiver
- (1) Power Adapter (24 VDC, 2.71 A)

2.4 HARDWARE DESCRIPTION

Figures 2-1 and 2-2 show the front and back panels of the Switcher. Tables 2-1 and 2-2 describe their components.

2.4.1 FRONT PANEL

FIGURE 2-1. FRONT PANEL

TABLE 2-1. FRONT-PANEL COMPONENTS

NUMBER IN FIGURE 2-1	COMPONENT	DESCRIPTION
1	Firmware	USB port for firmware upgrading
2	Power LED	• Lights red when power is ON • Turns green in standby mode • Blinks red when upgrading
3	IR sensor	Built-in IR sensor, receives IR signal sent from IR remote
4	LCD screen	Displays real-time operation status
5	(8) INPUT selector buttons	Press one of these buttons to switch the input source
6	(8) OUTPUT selector buttons	Press one of these buttons to select the output channel

2.4.2 BACK PANEL

FIGURE 2-2. BACK PANEL

TABLE 2-2. BACK-PANEL COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Inputs	(8) HDMI Input ports connect the HDMI source device
2	Outputs	• SPDIF: (8) audio output ports for de-embedded HDMI audio • HDMI: (8) HDMI Output ports connect to HDMI displays
3	Control=	• EDID: 4-pin EDID DIP switches set EDID data (1 = ON, 0 = OFF) Refer to EDID Configuration for more details • RS-232: Serial control port, connect to control device • IR IN: Connect to external IR receiver to use the IR remote to control the switcher • TCP/IP: TCP/IP port for unit control
4	24-VDC connector	DC barrel connector for the included AC power adapter
5	Ground	Connect to ground

CHAPTER 3: SYSTEM CONNECTION

3.1 USAGE PRECAUTIONS

- Verify all components and accessories are included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets and power cords should be insulated.
- All devices should be connected before power on.

3.2 SYSTEM DIAGRAM

The following diagram illustrates typical input and output connections that can be used with the switcher.

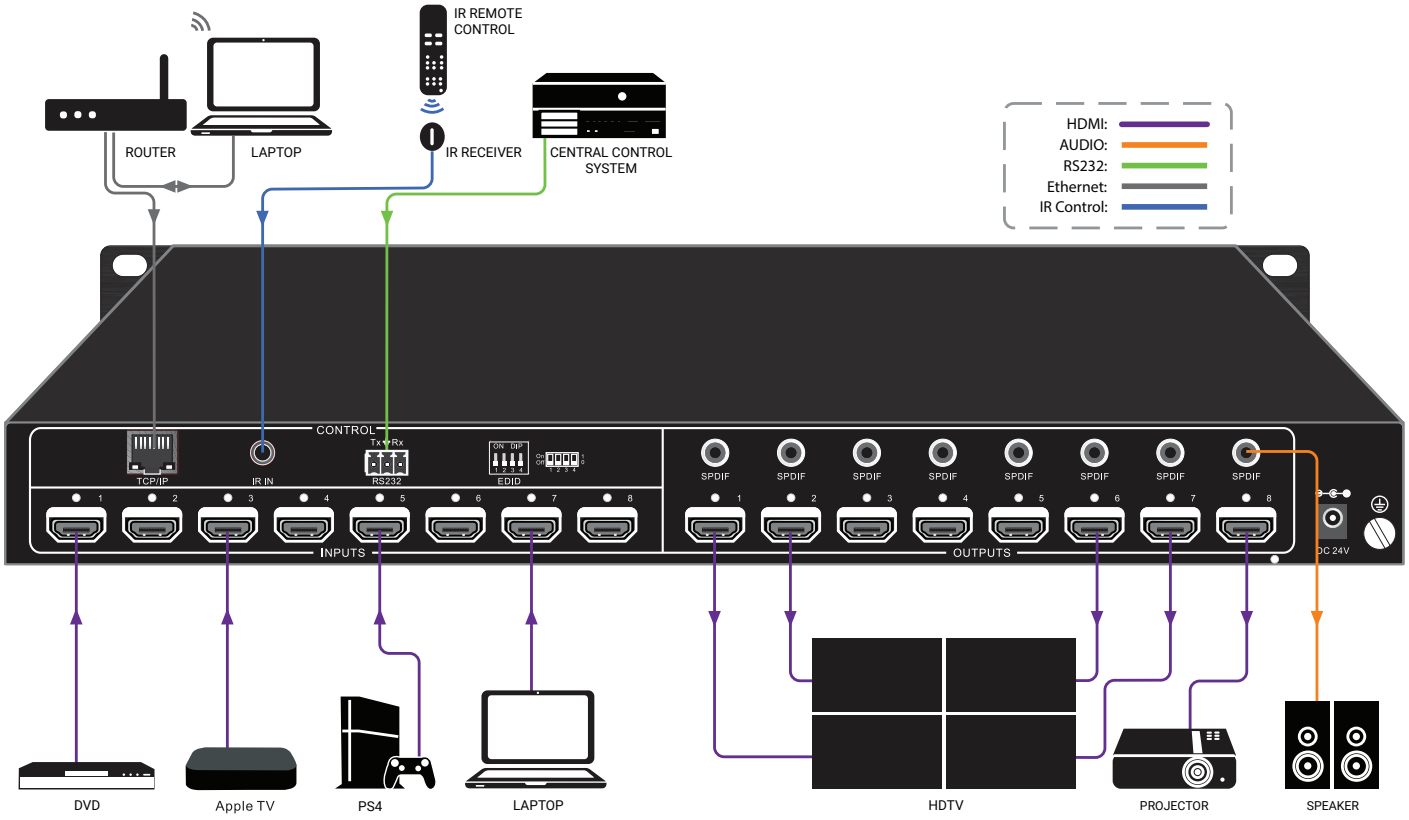


FIGURE 3-1. TYPICAL APPLICATION

CHAPTER 3: SYSTEM CONNECTION

3.3 CONNECTION PROCEDURE

STEP 1: Connect HDMI sources (e.g. DVD/PS4/Laptop) to HDMI input ports with HDMI cables.

STEP 2: Connect HDMI displays (e.g. HDTV/Projector) to HDMI output ports with HDMI cables.

STEP 3: Connect speakers/amplifiers to the SPDIF audio outputs with Toslink cables.

STEP 4: Connect the RS-232 ports of the control device (e.g. Central Control System, PC) and the switcher to enable serial control.

STEP 5: Insert an IR receiver to the IR IN port to control this switcher via IR Remote.

STEP 6: Connect the TCP/IP ports of control device (e.g. Laptop) and the switcher to enable TCP/IP control.

STEP 7: Plug a 24-VDC power adapter to the 24-VDC power port.

NOTES:

1. When connecting to HDMI 2.0 sources, make sure the HDMI cable is compliant with HDMI 2.0 to ensure reliable transmission.

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

3.4 SYSTEM APPLICATIONS

Ideal for use in control and transmission applications, you can use the switcher for monitoring, large screen displays, conference systems, television education and bank securities institutions, etc.

CHAPTER 4: PANEL BUTTON CONTROL

4.1 I/O CONNECTION SWITCHING

The front panel features eight input selection buttons and eight output selection buttons for switching the 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

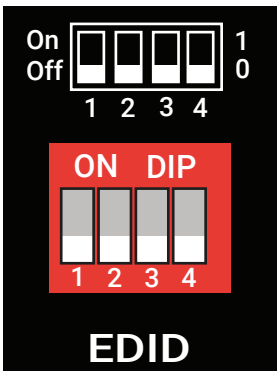
—> Press INPUTS 2 + OUTPUTS 3 + OUTPUTS 4

NOTE: Indicators for 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 has a 4-pin EDID DIP switcher to manage EDID. The EDID data and its corresponding DIP switcher status are shown in the next table.

TABLE 4-1. EDID DATA

DIP SWITCH	NUMBER	STATUS	EDID
	0	0000	Passthrough (default)
	1	0001	720p 2D passthrough CHo
	2	0010	720p 3D passthrough CH
	3	0011	1080p 2D passthrough CH
	4	0100	1080p 3D passthrough CH
	5	0101	4K @ 30 Hz passthrough CH
	6	0010	4K @ 30 Hz 2.0 CH
	7	0111	4K @ 30 Hz 7.1 CH
	8	1000	4K @ 60 Hz 4:2:0 passthrough CH
	9	1001	4K @ 60 Hz 4:2:0 7.1 CH
	10	1010	4K @ 60 Hz 4:4:4 passthrough CH
	11	1011	4K @ 60 Hz 4:4:4 7.1 CH
	–	1111	Enable Software EDID management mode: RS-232 control or Web-based GUI control

4.3 I/O CONNECTION INQUIRY

Press OUTPUT 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.

CHAPTER 5: IR CONTROL

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

1. Standby button: Press 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.

FIGURE 5-1. IR REMOTE CONTROL

CHAPTER 6: RS-232 CONTROL

6.1 INSTALLATION/UNINSTALLATION OF RS-232 CONTROL SOFTWARE

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

6.2 BASIC SETTINGS

Connect the splitter to the necessary input devices and output devices. Then, connect it with a PC installed RS-232 control software. Double-click the software icon to run this software.

Here we show an example using the software CommWatch.exe. The icon is shown next.

FIGURE 6-1. COMMWATCH ICON

The interface of the control software is shown next.

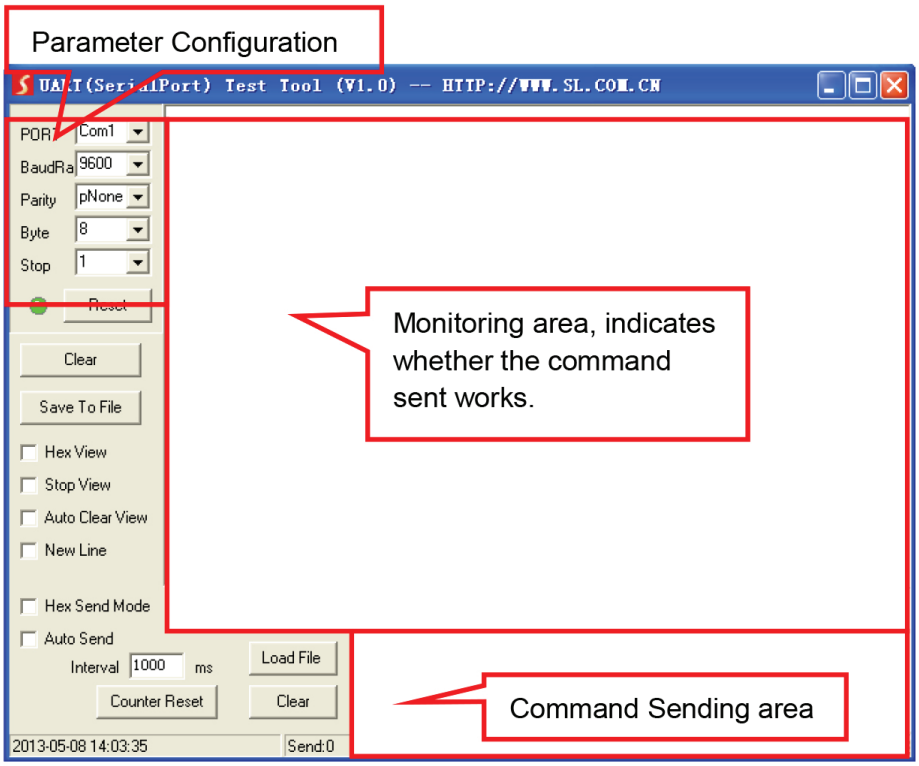


FIGURE 6-2. CONTROL INTERFACE

Set the parameters (baud rate = 9600, data bit = 8, stop bit = 1 and parity bit = none) correctly to ensure reliable RS-232 control.

6.3 RS-232 COMMUNICATION COMMANDS

Case-sensitive

- "[", "]"in the commands are for easy recognition only and not necessary in real operations. Other symbols including ".", ",", "/", "%", ";", "^".are parts of the commands
- Feedback listed in the column "Feedback Example" are only for reference, feedback may vary according to different operations
- Dial the EDID switcher to "1111"before sending commands pertaining to software EDID management (with gray background)

Baud rate: 9600

Data bit: 8

Stop bit: 1

Parity bit: None

6.3.1 SYSTEM COMMANDS

TABLE 6-1. SYSTEM COMMANDS

COMMAND	FUNCTION	FEEDBACK EXAMPLE
/*Type;	Query the model	AVS-HDMI2-8X8
/^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.	EDID: 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 start	STANDBY
%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

TABLE 6-2. 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

TABLE 6-3. SWITCHING COMMANDS

COMMAND	FUNCTION	FEEDBACK EXAMPLE
[x]All.	Transfer signals from the input channel [x] to all output channels. (x=1–8)	02 To All.
All#.	Transfer all input signals to the corresponding output channels respectively like 1->1, 2->2…	All Through.
All$.	Switch off all the output channels.	All Closed.
[x]#.	Transfer signals from the input channel [x] to the output channel [x]. (x=1–8)	04 Through.
[x]$.	Switch off the output channel [x]. (x=1–8)	02 Closed.
[x]@.	Switch on the output channel [x]. (x=1–8)	02 Open.
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). (x1/x2=01–08)	AV: X1-> X2 (AV: 02-> 04)
Status[x].	Query the I/O connection status of output [x]. (x=1–8, y=1–8)	AV: Y-> X (AV: 04-> 02)
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

TABLE 6-3 (CONTINUED). SWITCHING COMMANDS

COMMAND	FUNCTION	FEEDBACK EXAMPLE
%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

TABLE 6-4. SCENE COMMANDS

COMMAND	FUNCTION	FEEDBACK EXAMPLE
Save[Y].	Save the present operation to the preset command [Y], ranges from 1 to 10.	Save To F6
Recall[Y].	Recall the preset command [Y].	Recall From F2
Clear[Y].	Clear the preset command [Y].	Clear F8

6.3.5 HDCP COMPLIANCE

TABLE 6-5. HDCP COMPLIANCE COMMANDS

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 switch status should be set as 1111 to enable Software EDID management mode: RS-232 control or Web-based GUI control.

TABLE 6-6. EDID CONFIGURATION COMMANDS

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].	Switch 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 switch status	EDID RS232 GUI CONTROL 1111

6.3.7 ENABLE/DISABLE DIGITAL AUDIO

TABLE 6-7. ENABLE/DISABLE DIGITAL AUDIO COMMANDS

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

7.1 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 needed, Serial Port cannot be changed.

- Controlled by single PC: Connect a computer to the TCP/IP port of the switcher, and set its network segment to the same as the default IP of the switcher (192.168.0.178).

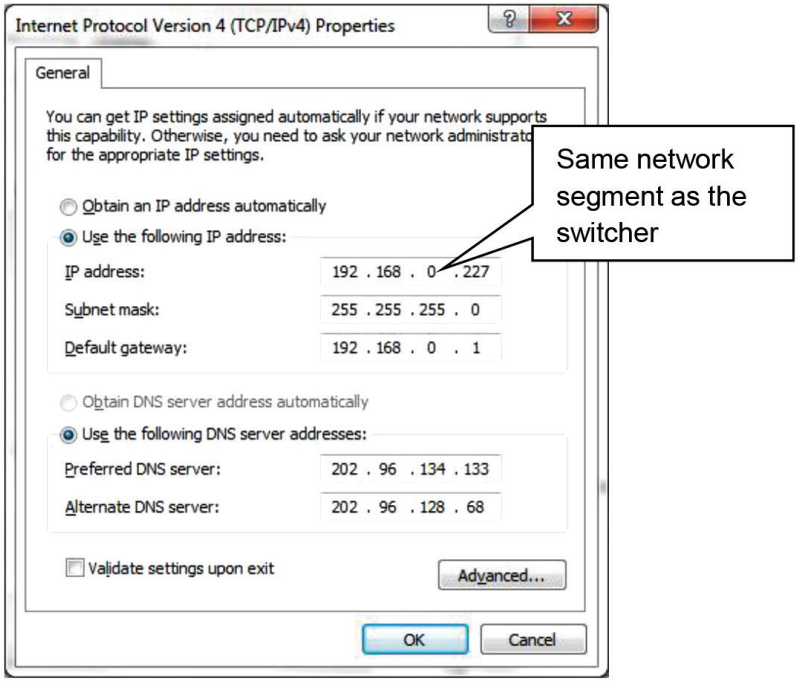


FIGURE 7-1. MODIFY THE IP OF PC

- Controlled by PC(s) in LAN: The switcher can be connected with a router to make up a LAN with the PC(s); this makes it able to be controlled in a LAN. Just make sure the switcher's network segment is the same as the router. Connect as shown in the following figure for LAN control.

CHAPTER 7: TCP/IP CONTROL

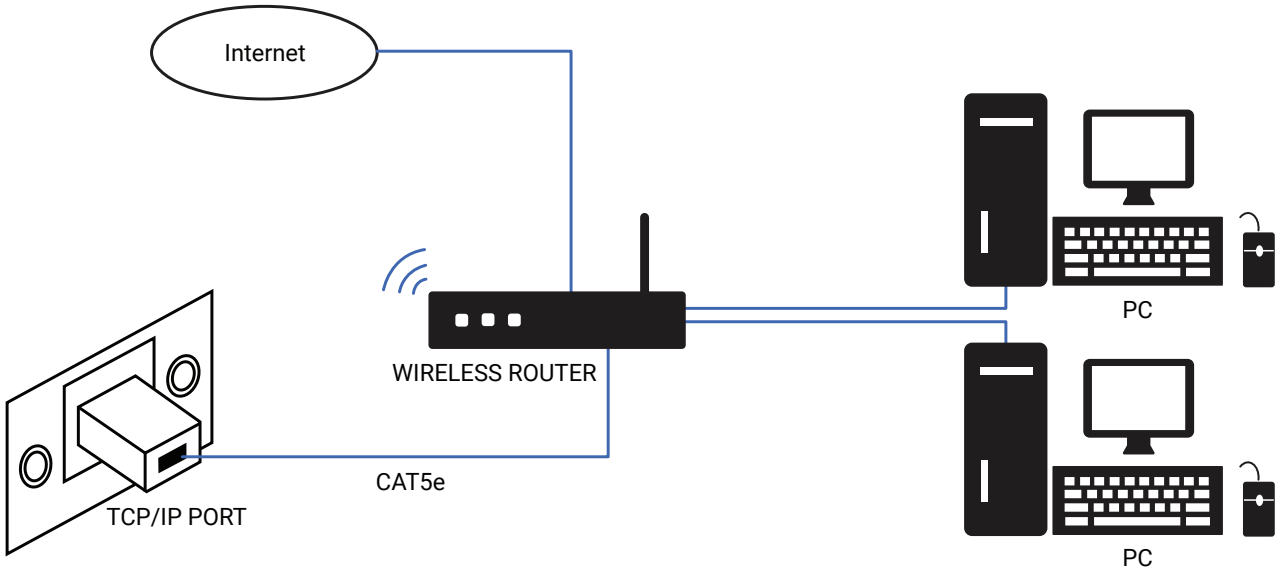


FIGURE 7-2. CONNECT TO LAN

STEP 1: Connect the TCP/IP port of the Switcher to the Ethernet port of the PC with twisted pair.

STEP 2: Set the PC's network segment to the same as the the Switcher. Remember the PC's original network segment.

STEP 3: Set the Switcher's network segment to the same as the router.

STEP 4: Set the PC's network segment to the original one.

STEP 5: Connect the Switcher and PC(s) to the router. In the same LAN, each PC is able to control the Switcher asynchronously. Then it's able to control the device via TCP/IP communication software.

7.2 TCP/IP COMMUNICATION SOFTWARE CONTROL

(Example of TCPUDP software)

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

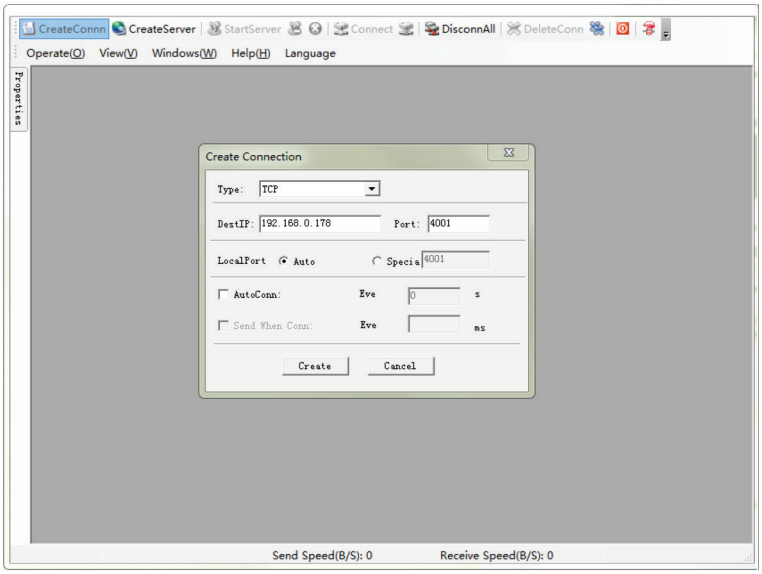


FIGURE 7-3. CONNECT TO TCPUDP

2. Enter commands in designed area to control the switcher.

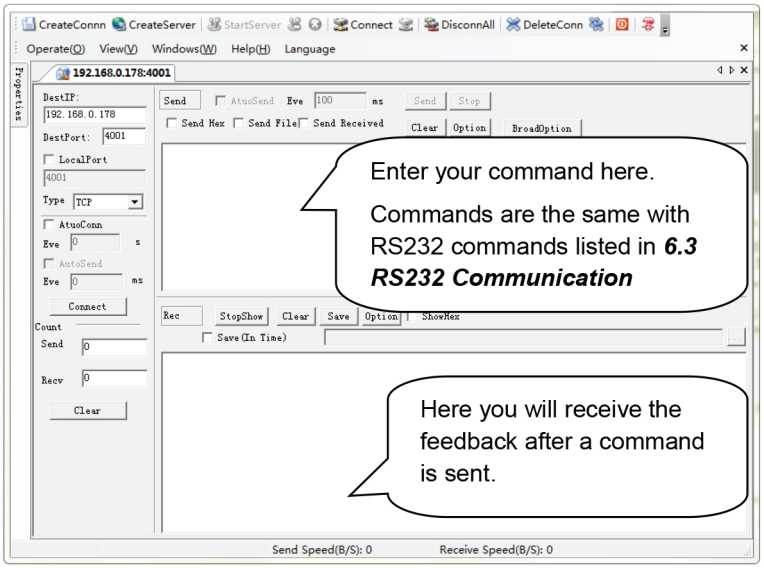


FIGURE 7-4. CONTROL INTERFACE OF TCPUDP

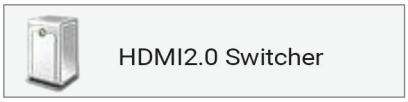
CHAPTER 7: TCP/IP CONTROL

7.3 WEB-BASED GUI CONTROL

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

Access the GUI interface through any one of the following methods:

- 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 RS-232 control software.
- Access through UPnP: Go to My Network Place in your PC, and click the icon as below:



PCs running Windows XP may have issues in finding the 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 Services 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 as shown below:

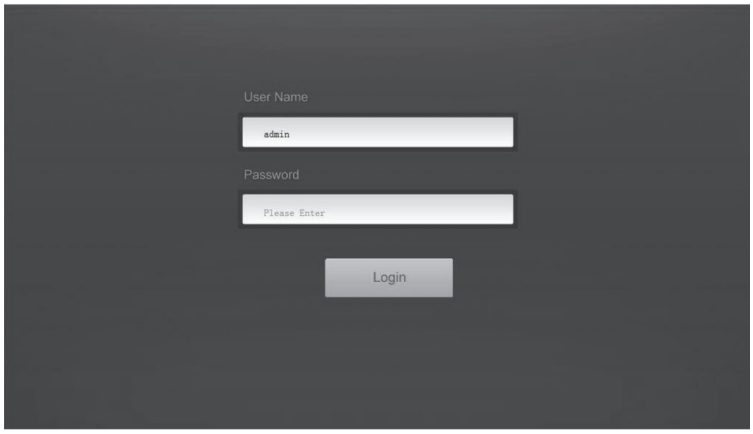


FIGURE 7-5. LOGIN TO GUI

CHAPTER 7: TCP/IP CONTROL

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.

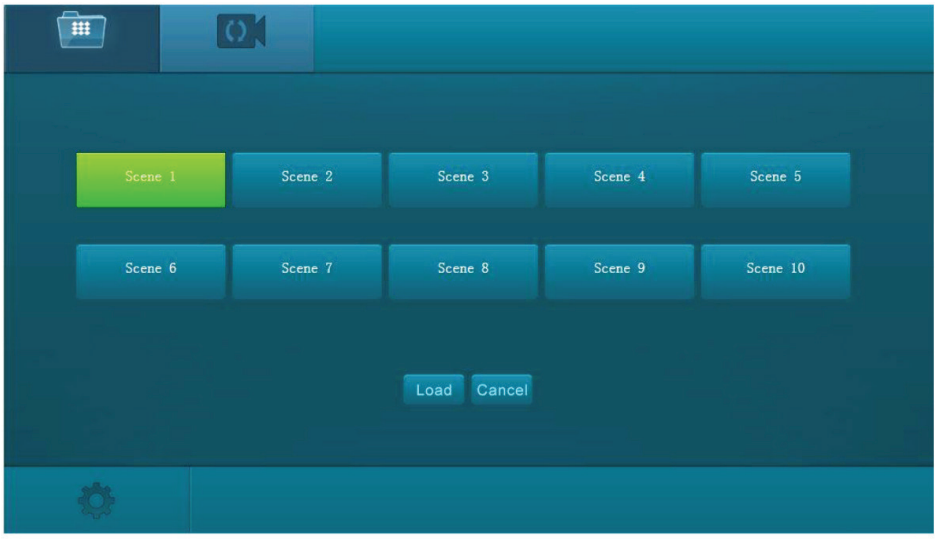


FIGURE 7-6. SCENE MENU

All ten scenes are shown in above interface.

Select a scene and then click “Load” to invoke the selected scene.

Click “Cancel” to cancel the current operation.

7.3.2 I/O CONNECTION SWITCHING

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

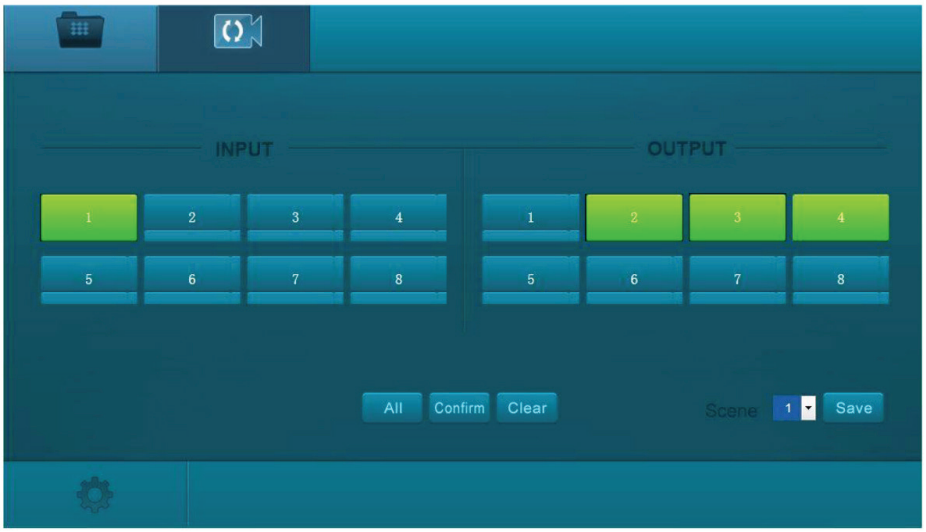


FIGURE 7-7. CONTROL MENU

The button matrix displays every possible connection between every input and output. Users can carry out the connections by clicking the corresponding button.

Buttons 1–8 at the bottom-right corner provide quick saving and recall for overall connection status.

For example:

STEP 1: Select button 1 in the INPUT column.

STEP 2: Select buttons 2, 3 and 4 in the OUTPUT column (If all OUTPUT ports are needed, you only need to click “All”)

STEP 3: Choose a scene that you want to save.

STEP 4: Click “Confirm” to save the setting or Click “Clear” to clear setup.

7.3.3 EDID CONFIGURATION

1. Click the Setting button to enter the configuration interface.

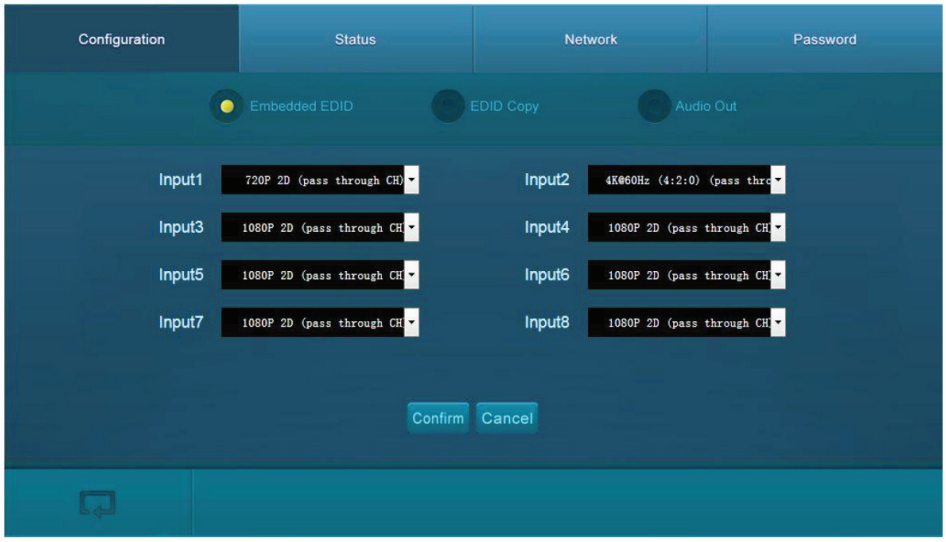


FIGURE 7-8. EMBEDDED EDID

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

2. Select “EDID Copy” to enter the following interface.

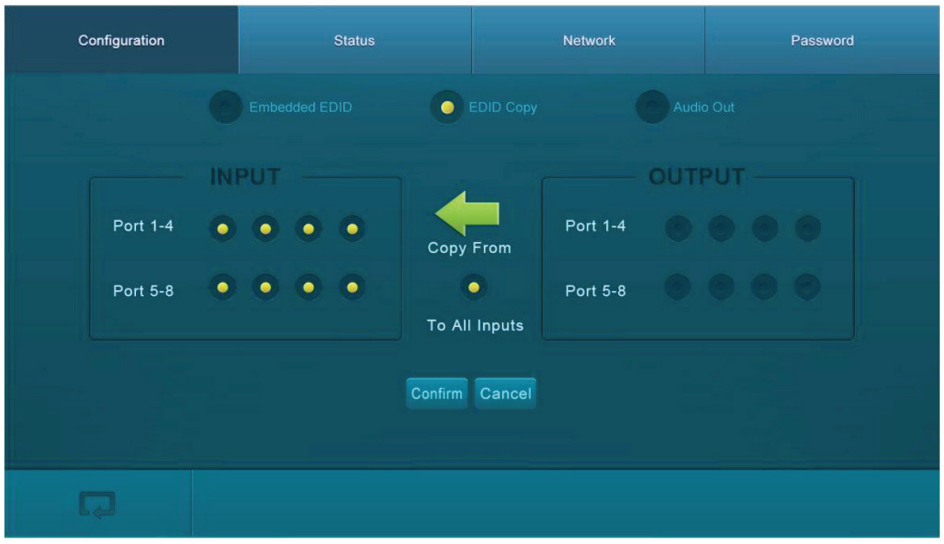


FIGURE 7-9. COPY EDID

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

STEP 1: Select one OUTPUT device to copy its EDID.

STEP 2: Select one or more input devices that need to add EDID. When To All inputs is selected, all input devices will copy the EDID from the output device.

STEP 3: Click “Confirm” to save the setting or click “Cancel” to cancel the operation.

7.3.4 AUDIO OUTPUT

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

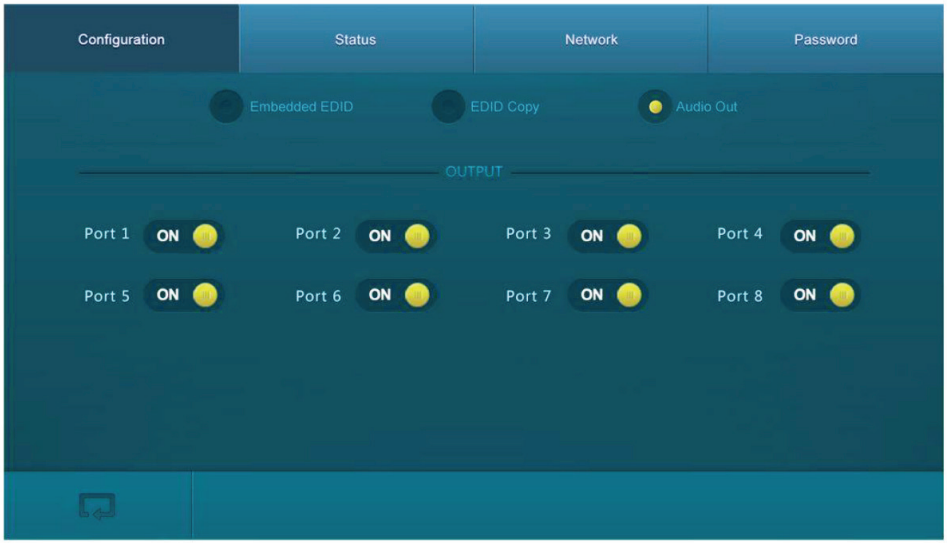


FIGURE 7-10. AUDIO OUT

7.3.5 STATUS SETTING

- Product Name and Model: Click “Status” to enter the following interface to modify the name and mode of this machine. This will display on the switcher’s LCD screen.

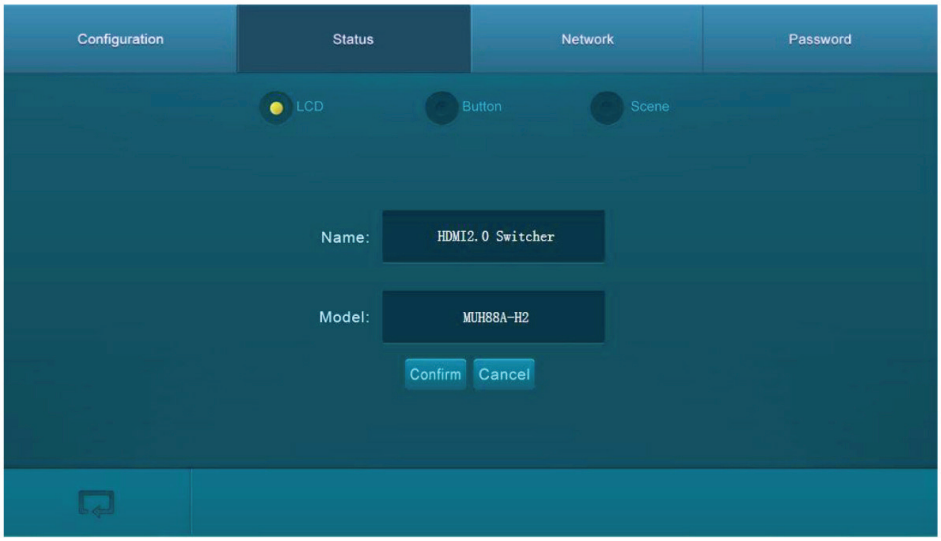


FIGURE 7-11. STATUS — LCD

- Button label: Select “Button” to enter the following interface to modify the name of buttons.

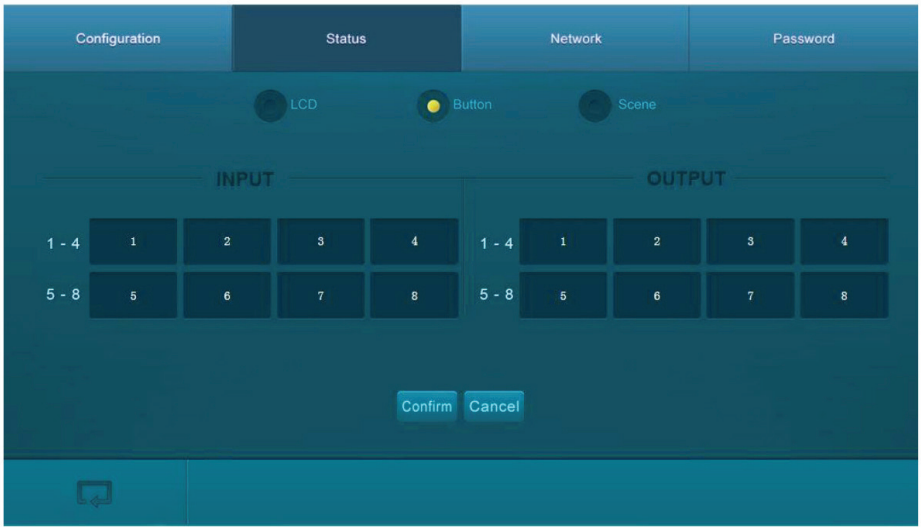


FIGURE 7-12. STATUS — BUTTON

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

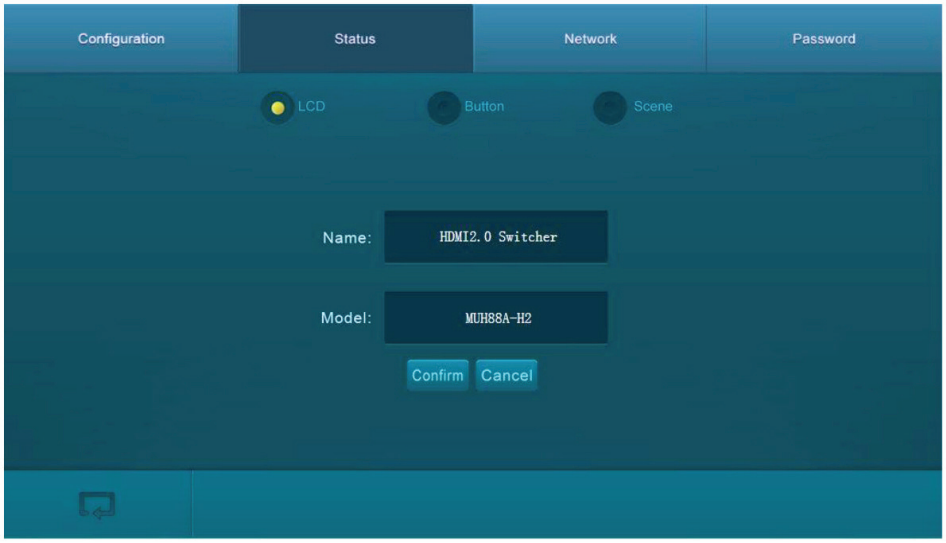


FIGURE 7-13. STATUS — SCENE

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.

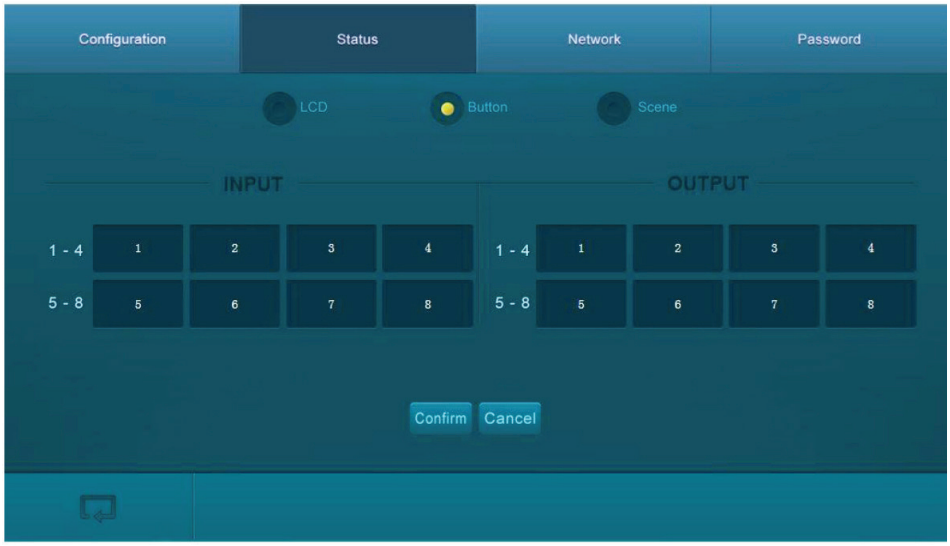


FIGURE 7-14. NETWORK

7.3.7 PASSWORD MODIFICATION

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

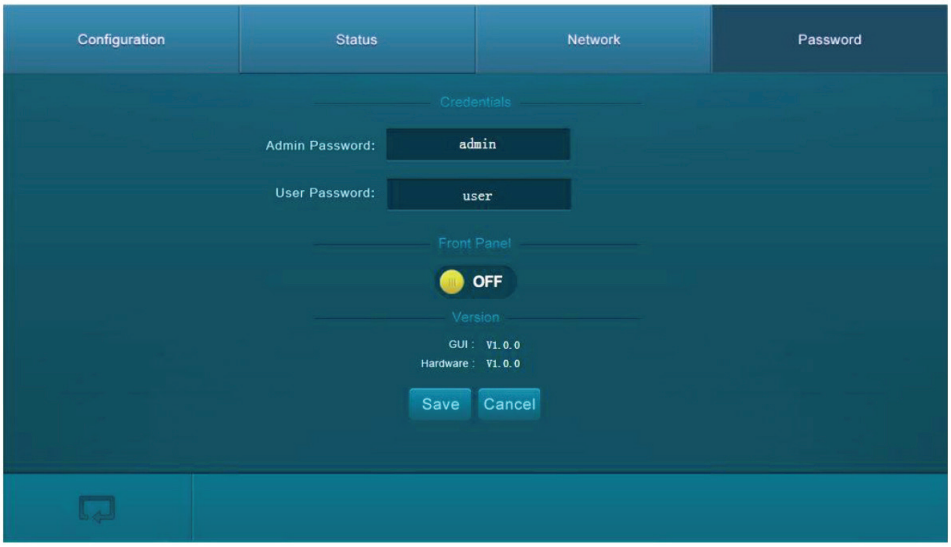


FIGURE 7-15. PASSWORD

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 the switcher 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.

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

   Username: admin; Password: admin

Here is the main configuration interface of the WebServer:

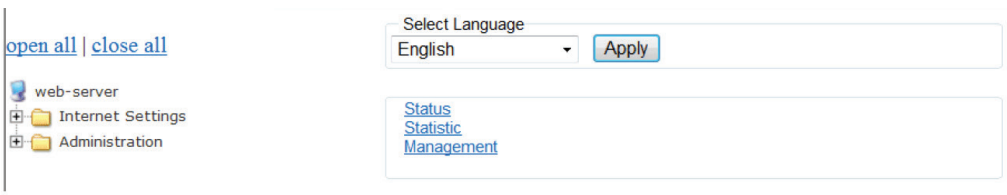


FIGURE 7-16. TCP/IP CONFIGURATION

7.5 GUI UPDATE

GUI for the switcher 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:

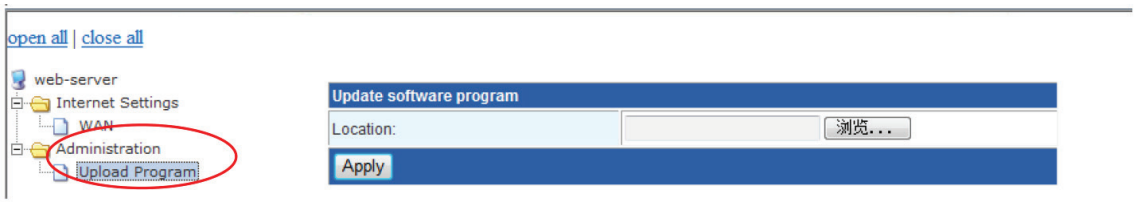


FIGURE 7-17. GUI UPDATE

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

CHAPTER 8: FIRMWARE UPGRADE THROUGH USB PORT

-The matrix switcher has a USB port for online firmware upgrade on the front panel.

Follow these steps to upgrade firmware:

STEP 1: Copy the upgrade software and the latest upgrade file (.bin) to PC.

STEP 2: Connect the USB ports of the matrix switcher and the PC via USB cable.

STEP 3: Double-click the update software icon (see below).

FIGURE 8-1. UPDATE SOFTWARE ICON

It will enter the upgrade interface shown below.

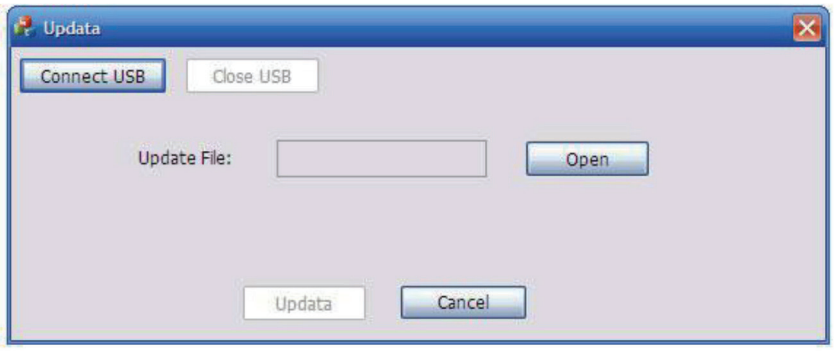


FIGURE 8-2. UPGRADE INTERFACE

STEP 4: Click Connect USB.

STEP 5: Click Open to load the upgrade file, then click Update to start firmware upgrading.

NOTE: To ensure available control, the COM number of the PC should be 1–9.

CHAPTER 9: DIMENSIONAL DRAWING

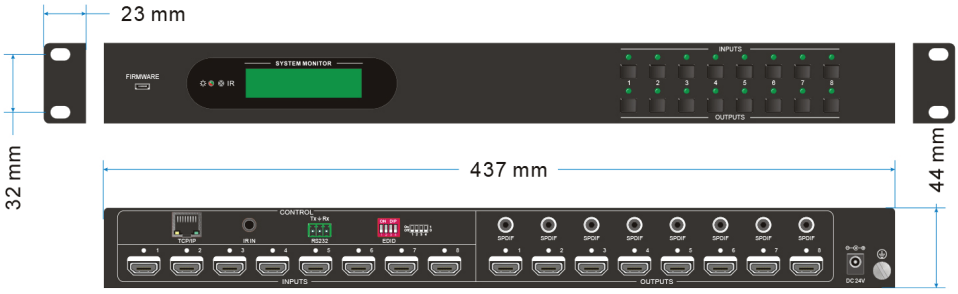


FIGURE 9-1. DIMENSIONAL DRAWING

TABLE 10-1. PROBLEMS/CAUSES/SOLUTIONS

PROBLEM	POTENTIAL CAUSE	SOLUTION
Losing color or no video signal output	1. The cables may not be connected correctly or may be broken. 2. Failed or loose connection.	1. Check whether the cables are connected correctly and are in working condition. 2. Make sure the connection is good.
No output image when switching	1. No signal at the input/output end. 2. Failed or loose connection. 3. Input source is HDCP but the HDCP compliance is switched off. 4. The display doesn't support the input resolution.	1. Check with oscilloscope or multimeter if there is any signal at the input/output end. 2. Make sure the connection is good. 3. Send command /%[x]:[1]. to change HDCP compliance status. 4. 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 can 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	1. The battery has run out. 2. The IR remote is broken. 3. Beyond the effective range of the IR signal or not pointing at the IR receiver.	1. Replace the battery. 2. Contact Black Box Technical Support at 877-877-2269 or info@blackbox.com 3. Adjust the distance and angle and point right at the IR receiver.
Power Indicator remains off when powered on	Failed 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.	Replace with another HDMI cable that 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.	1. Switch again. 2. 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 RS-232 port	1. Wrong connection. 2. Wrong RS-232 communication parameters. 3. Broken RS-232 port.	1. Check to ensure the connection between the control device and the unit. 2. Type in correct RS-232 communication parameters: Baud rate: 9600; Data bit: 8; Stop bit: 1; Parity bit: none 3. Contact Black Box Technical Support at 877-877-2269 or info@blackbox.com
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 RS-232/ IR remote/front panel buttons	The device is broken.	Contact Black Box Technical Support at 877-877-2269 or info@blackbox.com

NOTE: If the problem persists after following the above troubleshooting steps, contact Black Box Technical Support at 877-877-2269 or info@blackbox.com

APPENDIX A: REGULATORY INFORMATION

A.1 FCC STATEMENT

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. 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. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

A.2 CE AND ROHS2

This product complies with CE and ROHS2 certifications.

APPENDIX A: REGULATORY INFORMATION

A.3 NOM STATEMENT

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
    A: El cable de poder o el contacto ha sido dañado; u
    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o
    C: El aparato ha sido expuesto a la lluvia; o
    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
    E: El aparato ha sido tirado o su cubierta ha sido dañada.

APPENDIX B: DISCLAIMER/TRADEMARKS

B.1 DISCLAIMER

Black Box Corporation shall not be liable for damages of any kind, including, but not limited to, punitive, consequential or cost of cover damages, resulting from any errors in the product information or specifications set forth in this document and Black Box Corporation may revise this document at any time without notice.

B.2 TRADEMARKS USED IN THIS MANUAL

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