KanexPro®

Ultra-Fast 4x4 HDMI Matrix Switcher with

4K/60Hz & HDCP2.2

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Version: HDMX44-4K_2015V1.0

Preface

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

This manual is designed for 4x4 HDMI Matrix Switcher with TCP/IP port.

This manual is only for operation instruction only, not for any maintenance usage. The functions described in this version are updated till September 2015. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

All product function is valid till 2015-9-2.

KanexPro Trademarks

KanexPro Product model and 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 prior written consent.

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 this 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.

Contents

1. Introduction

1.1 The 4x4 HDMI Matrix Switcher

The KanexPro HDMX44-4K is a professional 4-input, 4-output HDMI matrix featuring HDCP 2.2 with the latest HDMI 2.0 specifications supporting ultra HD resolutions up to 4K @60Hz. This matrix switcher supports switching speeds to less then 0.2 seconds and also provides 4-additional audio ports via S/PDIF connectors to support audio de-embedding from HDMI. It can be fully controlled via RS-232, IR and Web based GUI using Ethernet where end-users can switch, control and manage the matrix using graphical and visual indicators right from the computer or touch-panel.

1.2 Features

- 4x4 HDMI matrix with 4 de-embedded HDMI audio ports;
- HDMI input ports: support HDMI 2.0, support signal up to 4Kx2K@60Hz & 1080p 3D, compliant with lower HDMI standards; HDCP2.2 compatible;
- HDMI output ports: support HDMI 1.4, capable to transmit 2560x1080 (60Hz) signal, compliant with lower HDMI standards; HDCP1.4 compatible
- Transmit 4Kx2K@60Hz signal up to 15m;
- SPDIF ports for de-embedded HDMI audio output;
- Powerful EDID management;
- Controllable via front panel button, IR, RS232& optional TCP/IP;
- 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 4x4 HDMI Matrix Switcher
- ✓ 6 x Screws
- ✓ 1 x IR receiver
- ✓ 4 x Plastic cushions
- ✓ 1 x User manual

- ✓ 2 x Mounting ears
- ✓ 1 x Pluggable Terminal Block
- ✓ 1 x Power adaptor (DC 12V/2A)
- ✓ 1 x IR remote

📖 Confirm if the product and the accessories are all included, if not, please contact your AV dealer.

2. Product Appearance of the Matrix Switcher

2.1 Front Panel
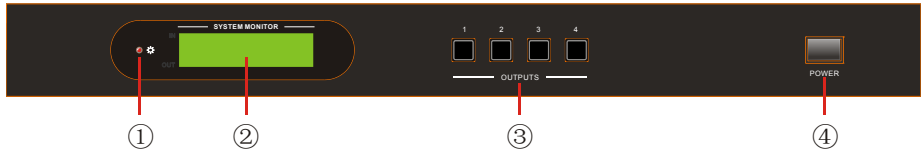
Figure 2- 1 Front Panel of 4x4 HDMI Matrix Switcher

No.	Name	Description
	Power Indicator	Illuminate red when power on; Turn green in standby mode; Blink red when upgrading.
	LCD Screen	Display real-time operation status.
	OUTPUTS	Output selection buttons, press the buttons to switch input cycle for the output
	Power Trigger	Press to power on/off the switcher
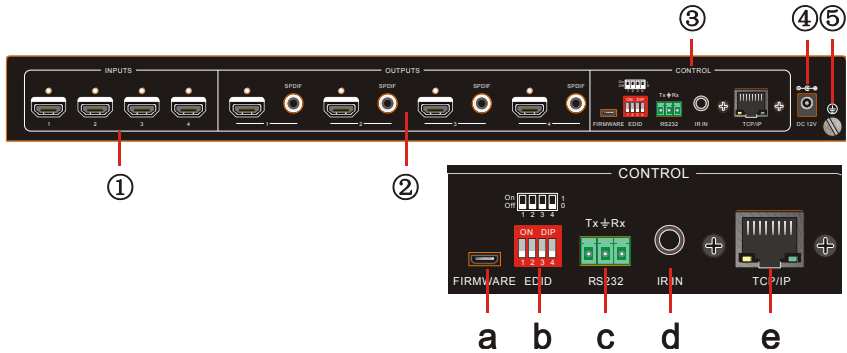
2.2 Rear Panel

Figure 2- 2 Rear Panel of 4x4 HDMI Matrix Switcher

No.	Name	Description
	INPUTS	HDMI input ports, 4 in total, connect with HDMI sources
	OUTPUTS	**SPDIF**: audio output ports for de-embedded HDMI audio, 4 in total
		HDMI: 4 in total, connect with HDMI displays
	Control	a) **Firmware**: Micro USB port for firmware upgrade
		b) **EDID Switcher:** 4-pin EDID DIP switchers to set EDID data, "1" stands for "On", "0" stands for "Off". Refer to *4.4 EDID Management* for more detials.
		c) **RS232:** Serial control port, connect with control device
		d) **IR IN:** input port for IR control signal, connect with IR receiver
		e) **TCP/IP:** (optional) TCP/IP port for unit control
	DC 12V	Connect with DC 12V 2A power adaptor
	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.
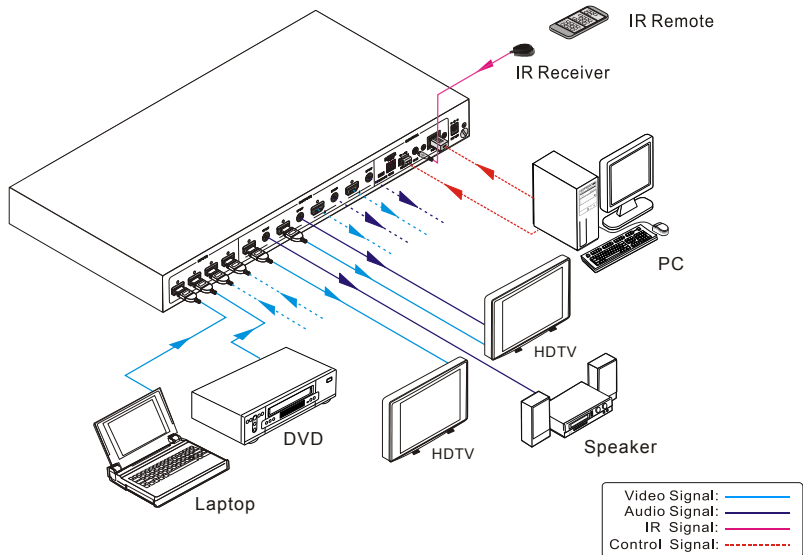
3.2 Application Diagram

Figure 3- 1 Connection diagram

3.3 Connection Process

Step1. Connect HDMI sources (e.g. DVD) to HDMI INPUTs with HDMI cables.

Step2. Connect HDMI displays (e.g. HDTV) to HDMI OUTPUTs with HDMI cables;

Step3. Connect speakers/ amplifiers to the AUDIO OUTPUTs with audio cables;

Step4. Connect the RS232 ports of control device (e.g. a PC) and 4x4 HDMI Matrix to enable serial control.

Step5. Connect the TCP/IP ports of control device (e.g. a PC) and 4x4 HDMI Matrix to enable IP control.

Step6. Insert an IR receiver to the IR IN port to enable IR control.

Step7. Plug a DC 12V power adapter to the power port of 4x4 HDMI Matrix.

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

The KanexPro HDMX44-4K matrix switcher is ideal for numerous commercial applications such as military, medical and government audio-video environments, where swift, reliable switching and distribution of high-resolution HDMI signal is critical to meet pixel-by-pixel needs.

4. System Operations

4.1 IR Control

Connect an IR receiver to the IR IN port of the switcher, users can control it through the included IR remote. Here is a brief introduction to the IR remote:
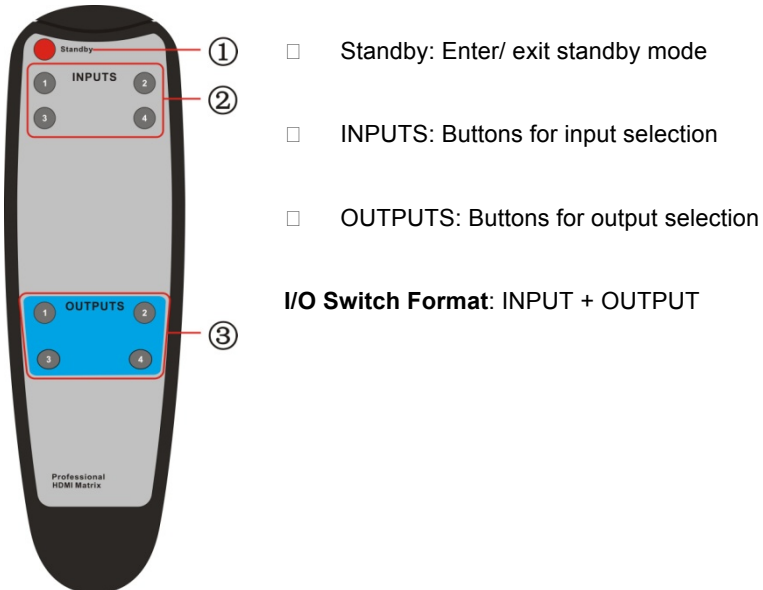
Standby: Enter/ exit standby mode

INPUTS: Buttons for input selection

OUTPUTS: Buttons for output selection

I/O Switch Format: INPUT + OUTPUT

Figure 3- 2 IR Remote

4.2 RS232 Control

4.2.1 Installation/uninstallation of RS232 Control Software

● **Installation** Copy the control software file to the computer connected with 4x4 HDMI Matrix.

● **Uninstallation** Delete all the control software files in corresponding file path.

4.2.2 Basic Settings

Firstly, connect 4x4 HDMI Matrix 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 4- 1 Icon of CommWatch

The interface of the control software is showed as below:
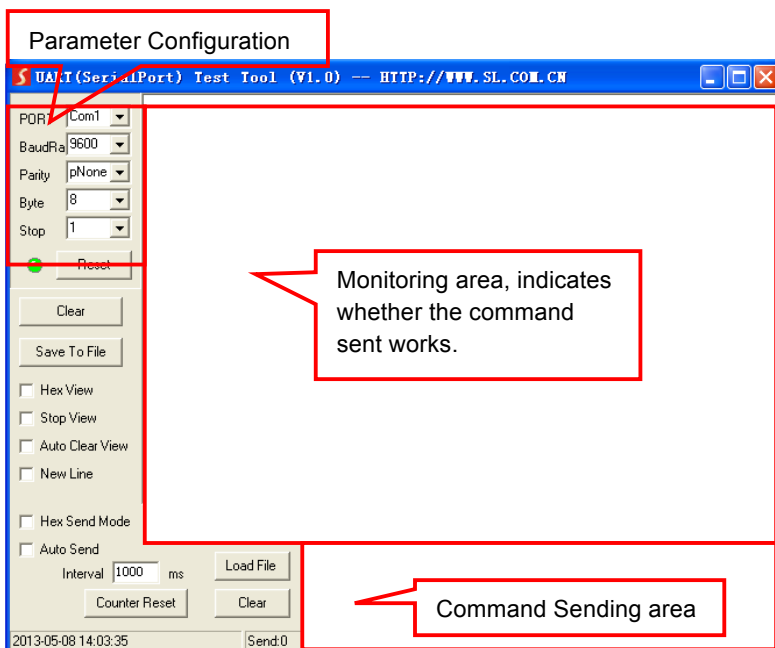

Figure 4- 2 Control Interface of CommWatch

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

4.2.3 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). Refer to *4.4 EDID Management* for detailed information.

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

Command	Function	Feedback Example
System Commands		
/%Lock;	Lock the front panel buttons.	System Locked!
/%Unlock;	Unlock the front panel buttons.	System Unlock!
/^Version;	Inquire the firmware version	VX.X.X
/:MessageOff;	Turn off command feedback from the com port. It will only show simple words like "SWITCH OK!".	/:MessageOff;
/:MessageOn;	Turn on command feedback from the com port.	/:MessageOn;
/:FeedbackON;	Enable command feedback on LCD monitor on the front panel (default).	/:FeedbackON;
/:FeedbackOFF;	Disable command feedback on LCD monitor on the front panel (default).	/:FeedbackOFF;
Operation Commands		
Undo.	Cancel the previous operation.	Undo Ok!
Demo.	Switch to the "demo" mode, convert input and output in turn like 1B1, 1B2, …4B3, 4B4, 1B1… and so on .The switching interval is 2 seconds. Switch to normal mode by pressing any front panel button or sending any other command	Demo Mode
[x]All.	Transfer signal from input x to all outputs	1 To All.

Command	Function	Feedback Example
All#.	Transfer all inputs to corresponding outputs, like 1->1, 2->2…	All Through.
[x]#.	Transfer signal from input x to output x.	1 Through.
All@.	Switch on all outputs.	All Open.
[x]@.	Switch on output x.	1 Open.
All$.	Switch off all outputs, but except coaxial outputs for digital audio.	All Closed.
[x]$.	Switch off output x.	1 Closed.
[x]B[y1],[y2],[y3].	Transfer AV signal from input x to output y1, y2, y3	1B2
BlackscreenON[x].	Switch on input x.	BlackscreenON1.
BlackscreenOFF[x].	Switch off input x.	BlackscreenOFF1.
Save[y].	Save the present operation status to preset command y, y=0~11.	Save To F1
Recall[y].	Recall preset command y, y=0~11.	Recall From F1
Clear[y].	Clear preset command y, y=0~11.	Clear F1
EDIDG[x].	Get EDID data from output x and display it on com port.	
EDIDM[X]B[y].	Enable input x to learn the EDID data from output y. If the EDID data is not available, the matrix will set it to initial EDID data.	EDIDM3B1
EDIDC[x]B[y].	Capture the EDID data of output x and save it as No.y EDID, y=1~15	EDIDC3B1
EDIDExtract[x][y].	Invoke No.y EDID data saved through COM port to input x, y=1~15	Pick up success
UpgradeSoftwareEDID[y].	Save the EDID data to No.y EDID, invoke the EDID by sending command EDIDExtract[x][y].	Please send the EDID file Upgrade success
EDIDUpgrade[x].	Upgrade the EDID data of input x (x=1~4: upgrade the EDID of single input; x=9: upgrade the EDID of all inputs) Send EDID file (.bin) within 10 seconds.	Please send the EDID file Upgrade success

Command	Function	Feedback Example
UpgradeIntEDID[x].	Upgrade embedded EDID data No.x, x=1~10. (Refer to *4.4 EDID Management* for detailed information of embedded EDID data) Send EDID file (.bin) within 10 seconds.	Please send the EDID file
EDID/[x]/[y].	Invoke embedded EDID data No.y to input x, y=1~10 <table><tr><td>**y=1~10**</td><td>**EDID information**</td></tr><tr><td>1</td><td>720P 2D 5.1CH</td></tr><tr><td>2</td><td>720P 3D 5.1CH</td></tr><tr><td>3</td><td>720P 2D 2CH</td></tr><tr><td>4</td><td>720P 3D 2CH</td></tr><tr><td>5</td><td>1080P 3D 5.1CH</td></tr><tr><td>6</td><td>1080P 2D 5.1CH</td></tr><tr><td>7</td><td>1080P 3D 2CH</td></tr><tr><td>8</td><td>1080P 2D 2CH</td></tr><tr><td>9</td><td>2016P 2D 5.1CH</td></tr><tr><td>10</td><td>2016P 2D 2CH</td></tr></table>	EDID/4/3
EDIDPCM[x].	Set the audio of input x to PCM in EDID database.	EDIDPCM1
EDIDH[x]B[y].	Copy the EDID data from output x to input y If the EDID data is available and the audio part supports not only PCM format, then force-set it to only support PCM. If the EDID data is not available, it will set to initial EDID.	EDIDH1B1
PWON.	Work normally.	PWON
STANDBY.	Enter standby mode. (Return to normal mode via front panel buttons/ any other command/ IR remote)	STANDBY
/%[x]:[y].	Manage HDCP status of outputs "x" stands for output port, can be 1~4 or ALL. When x=ALL, it means manage HDCP status of all outputs. "y" stands for HDCP status, can be 1 (with HDCP) or 0 (not with HDCP).	/%ALL:0.

Command	Function	Feedback Example
%0801.	Enable auto HDCP management (HDCP Active)	%0801.
%0911.	Reset to factory default. (Switch mode: all through; scene/ HDCP status remains the same)	Factory Default
DigitAudioON[x].	Enable the SPDIF audio output of output x. ● x=1~4, enable the SPDIF audio output of single output port. ● x=9, enable the SPDIF audio output of all output ports.	DigitAudio ON with Output 4
DigitAudioOFF[x].	Disable the SPDIF audio output of output x. ● x=1~4, disable the SPDIF audio output of single output port. ● x=9, disable the SPDIF audio output of all output ports.	DigitAudio OFF with Output 4
Inquiry Commands		
Status [x].	Check the input channel for output x	AV: 1->1
Status.	Check the input channel for all outputs	AV:1->1 … AV: 4-> 4
%9961.	Return the key lock status.	System Unlock!/System Locked!
%9962.	Check the power status	PWON
%9963.	Check the audio format of EDID database for input x	IN1: PCM … IN4: PCM
%9964.	Check the IP and subnet mask of the switcher.	IP 192.168.0.178 SB 255.255.255.0 DHCP 0
%9971.	Inquire connection status for all inputs, N means there is no source, Y means there is connected source.	In 1 2 3 4 Connect N Y Y N
%9972.	Inquire connection status for all outputs, N means there is no display, Y means there is connected display.	Out 1 2 3 4 Connect Y Y N N

Command	Function	Feedback Example
%9973.	Check the inputs HDCP status, N means it's not with HDCP, Y means it's with HDCP.	In 1 2 3 4 HDCP N Y Y N
%9974.	Check the outputs HDCP status, N means it's not with HDCP, Y means it's with HDCP.	Out 1 2 3 4 HDCP N Y Y N
%9975.	Check the I/O switch status.	In 1 2 3 4 Out 1 2 3 4
%9977.	Check the status of digital audio of all outputs, N is for "off", Y is for "on".	Out 1 2 3 4 Audio N N Y Y

4.2.4 EDID Management

The KanexPro HDMX44-4K provides a convenient EDID management scheme to create effective communication between the display and sources.

In factory default status (Status: 0000), the Matrix passes through the signals directly, input & output device process the signal automatically. You can invoke other saved EDID data by adjusting the 4-pin EDID DIP switcher or sending corresponding RS232 command.

4.2.4.1 Via RS232 commands

Dial the switchers to "1111" to enable software EDID management.

➢ **Invoking embedded EDID data:**
Send command "**EDID[X]B[y].**" to enable input to invoke embedded EDID data of 4x4 HDMI Matrix Switcher-N . For example, send "**EDID[4]B[3]**" , the INPUT device (4) will gain embedded EDID data is that **720P 2D 2CH.**

➢ **EDID Copy**:
Send command "**EDIDM[X]B[y].**" to enable input to copy the EDID data of a display. For example, send "**EDIDM[1]B[4]**" , the INPUT device (1) will gain EDID data from OUTPUT device(4).

➢ **Program Custom EDID data**:

Copy custom EDID data (.bin) to the control device (e.g. a PC) and program the data into the device by sending command **EDIDUpgrade[x].**

Refer to *4.2.3 RS232 Communication Commands* for more EDID management commands (with grey background).

4.2.4.2 Via 4-pin EDID DIP switcher

Beside EDID can be managed via RS232 commands, the matrix switcher boasts a 4-pin EDID DIP switcher to manage EDID. DIP switcher to manage EDID. Dial the switchers to invoke demanded EDID data

➢ **Embedded EDID data**: 10 sets in total, the chart below illustrate the 10 Embedded EDID data.

➢ **Custom EDID data**: max at 3 sets

The chart below shows switcher status for custom EDID No.12~14.

No.	Switcher Status	EDID information
Embedded EDID data		
1	0001	720P 2D 5.1CH
2	0010	720P 3D 5.1CH
3	0011	720P 2D 2CH
4	0100	720P 3D 2CH
5	0101	1080P 3D 5.1CH

6	0110	1080P 2D 5.1CH
7	0111	1080P 3D 2CH
8	1000	1080P 2D 2CH
9	1001	2016P 2D 5.1CH
10	1010	2016P 2D 2CH
Custom EDID data		
12	1100	Customizable
13	1101	Customizable
14	1110	Customizable

Note:

1) EDID information listed in the above chart is factory default data. Embedded EDID data can be updated by sending command **UpgradeIntEDID[x].**.

2) Embedded EDID data can also be invoked via command **EDID/[x]/[y].**.

4.3 TCP/IP Control

4.3.1 Control Modes

TCP/IP default settings: IP is 192.168.0.178, Gateway is 192.168.0.1, and Serial Port is 8080. 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 4x4 HDMI Matrix Switcher-N, and set its network segment to the same as the default IP of the HDMI Matrix Switcher (192.168.0.178).
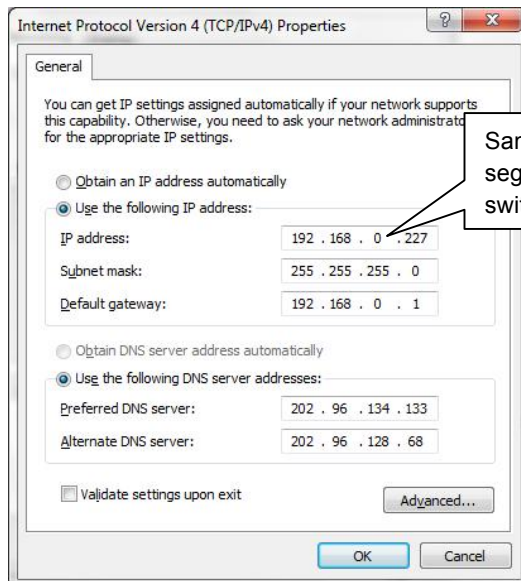
Figure 4- 3 modifying the IP of PC

• **Controlled by PC(s) in LAN**

The HDMX44-4K can be connected to a router to make up a LAN with the PC(s); this makes it capable to be controlled in a LAN. When in control, please make sure the Matrix Switcher's network segment is the same with the router. Please connect as the following figure for LAN control.
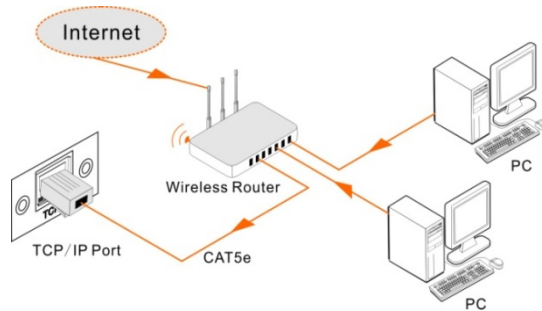

Figure 4- 4 Connecting to LAN

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

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

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

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

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

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

4.3.2 Control the HDMX44-4K via TCP/IP communication software

(Exampled by TCP/UDP software)

1) Connect a computer with TCPUDP software to the Matrix Switcher. Open the TCPUDP software (or any other TCP/IP communication software) and create a connection, enter the IP address and port from the Matrix Switcher (default IP: 192.168.0.178, port: 8080):
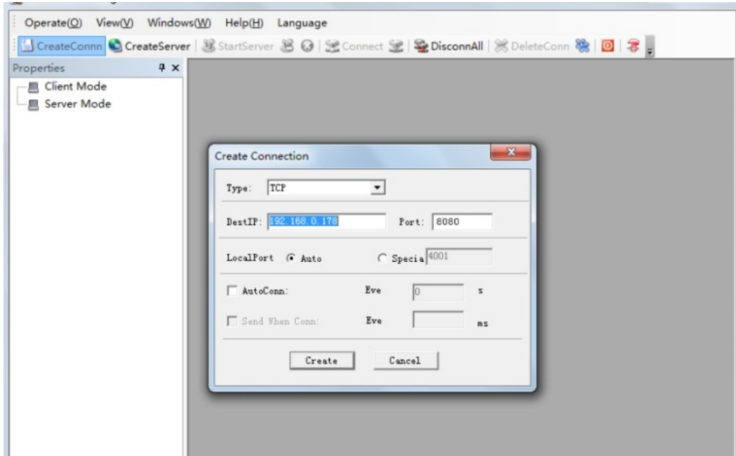
Figure 4- 5 Connect to TCPUDP

2) Enter commands in designed area to control the Matrix Switcher, see below:
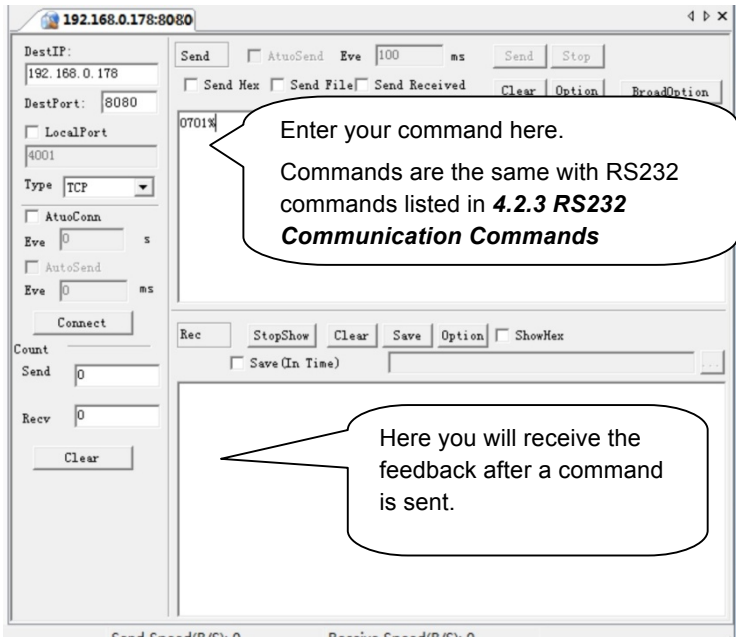

Figure 4- 6 Control interface of TCPUDP

4.3.3 Control the HDMX44-4K via web-based GUI

Additionally, the matrix can also be controlled via web-based GUI, which allows users to interact with Matrix switcher through graphical icons and visual indicators.

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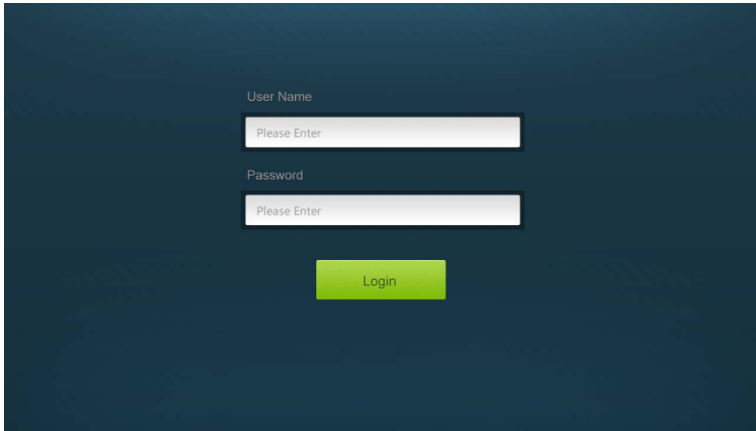

Figure 4- 7 Login GUI

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 will be able to access more configuration interfaces than user. Here is a brief introduction to the interfaces.

4.3.3.1 Scene Menu

Type the user name: admin, password: admin, and then click **LOGIN**, it will show the Scene menu as shown below:
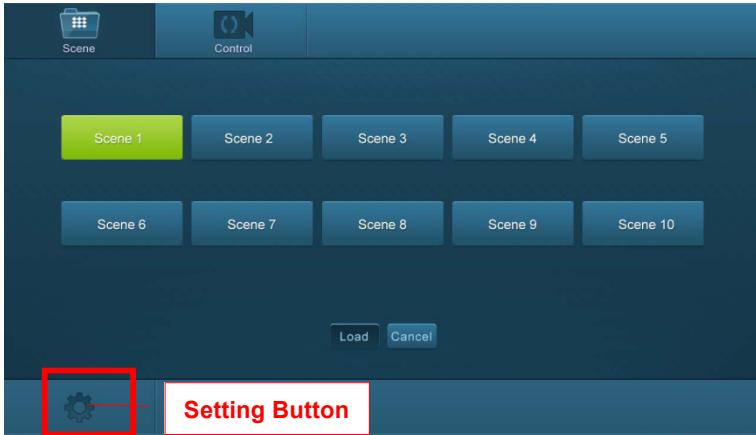
Figure 4- 8 Scene Menu

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.

4.3.3.2 Control Menu

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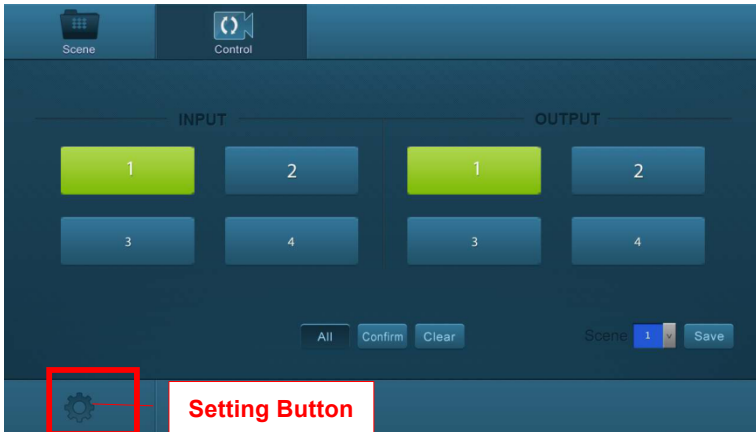

Figure 4- 9 Control Menu

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

Buttons 1~4 at the right-bottom corner provides quick saving and recall for overall connection status. For example:

Step1: Select button1 at INPUT column

Step2: Step2: Select button 1 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.

4.3.3.3 Configuration Properties

1. Configuration:

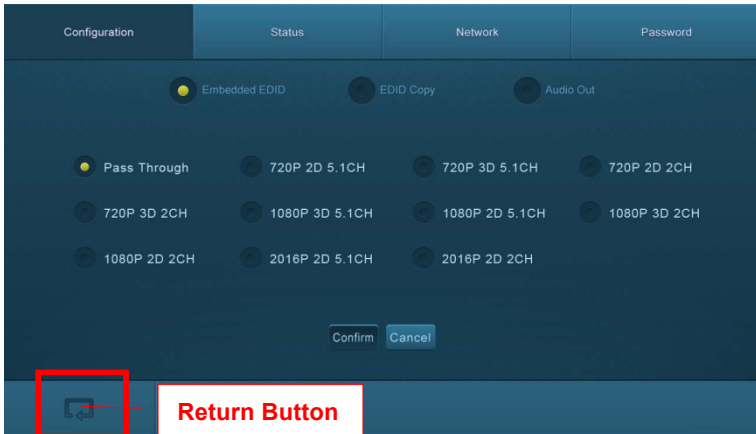1) Click setting button ⚙ to enter configuration interfaces.

Figure 4- 10 Embedded EDID

Every embedded EDID from the Matrix Switcher is shown in the above interface. User can select EDID in accordance with actual needs.

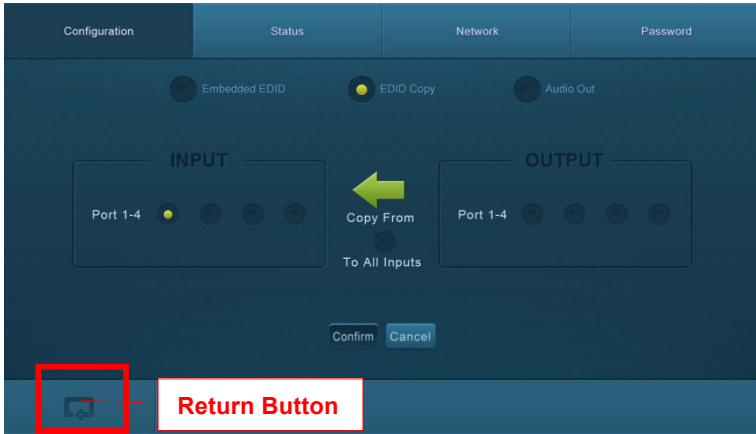2) Select "**EDID Copy"** to enter the following interface:

Figure 4- 11 Copy EDID

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

Step1: Select one INPUT port

Step2: Select one OUTPUT port that you want to copy its EDID.

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

3) Select "**Audio Out**" to enter the following interface to turn on/off the Audio Output passage.
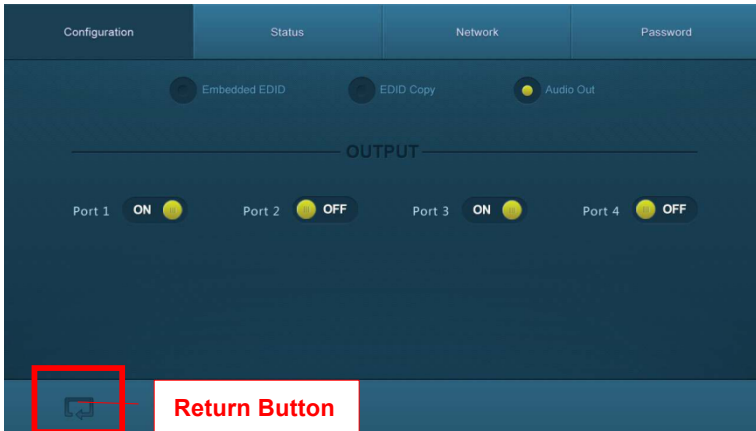

Figure 4- 12 Audio EDID

2. Status:

1) From the top of the interface, 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.
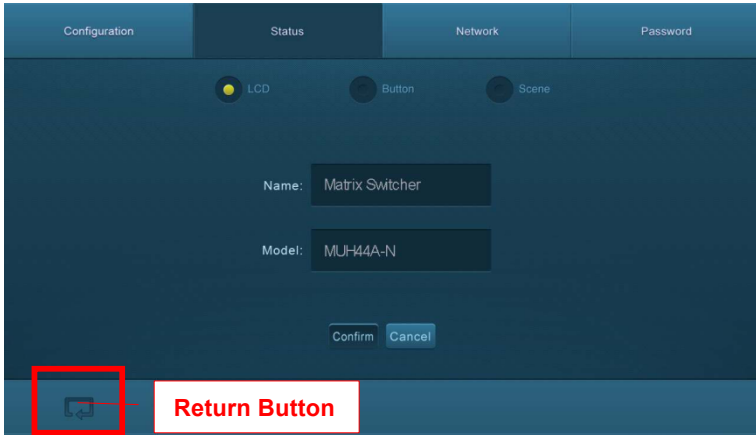

Figure 4- 13 Status- LCD

2) Select "**Button**" to enter the following interface to modify the name of buttons.
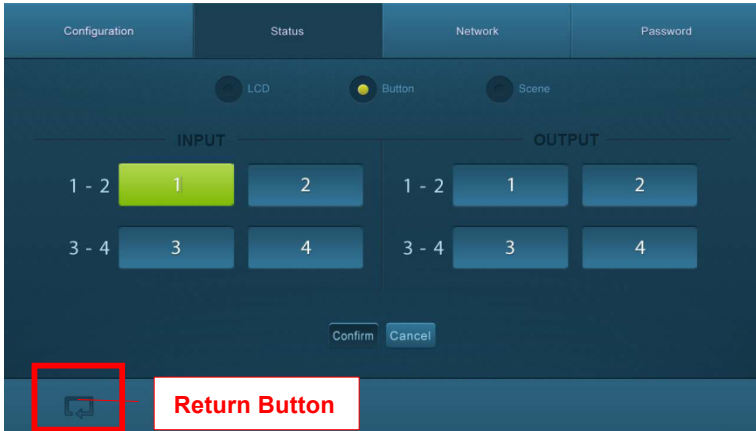

Figure 4- 14 Status- Button

3) Select "**Scene**" to enter the following interface to modify the name of scenes.

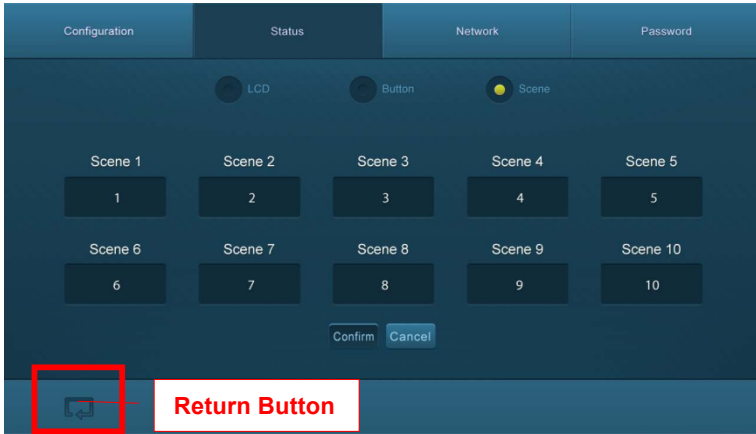**Figure 4- 15 Status-Scene**

3. Network:

At the top of the interface, click "**Network**" to enter the following interface to inquire and configure network settings including MAC address, IP address, subnet mask, and Gateway.
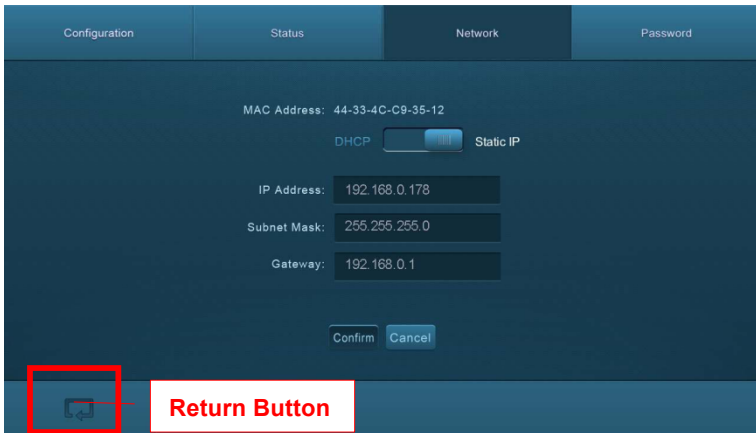

Figure 4- 16 Network

5. Password

At the top of the interface, click "**Password**" to enter the following interface to inquire and modify the admin or user password.
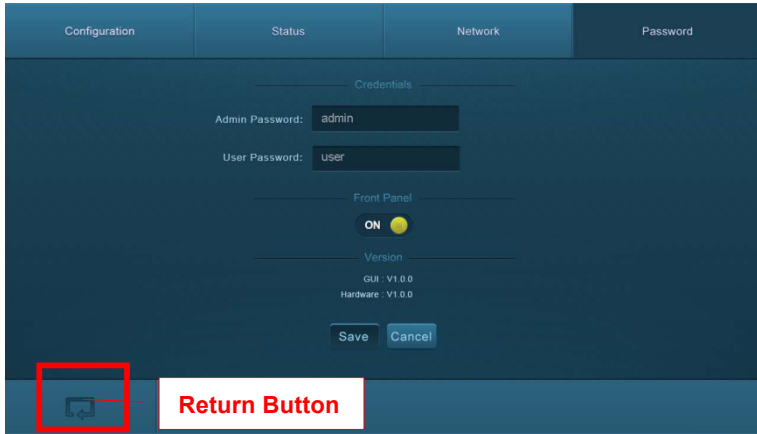
Figure 4- 17 Password

From the above interface, turn on the Front Panel to lock all buttons of the matrix, and they will be locked to restrict any operation.

4.3.4 TCP/IP Configuration

IP address, subnet mask, and Gateway of the Matrix 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 from 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:
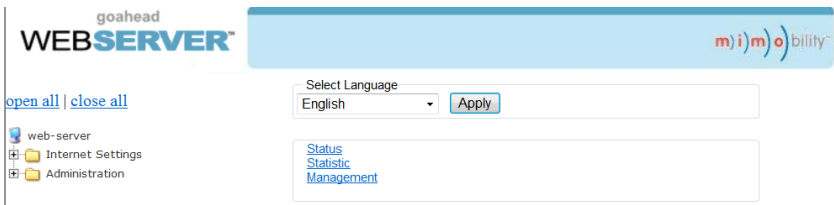
Figure 4- 18 TCP/IP Configuration

4.3.5 GUI Update

GUI on the switcher can be updated online by going 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:

KanexPro **4x4 HDMI Matrix Switcher with 4K/60 & HDCP2.2**

Figure 4- 19 GUI Update

4.4 Firmware Upgrade through USB port

The HDMX44-4K houses 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 the Matrix Switcher.

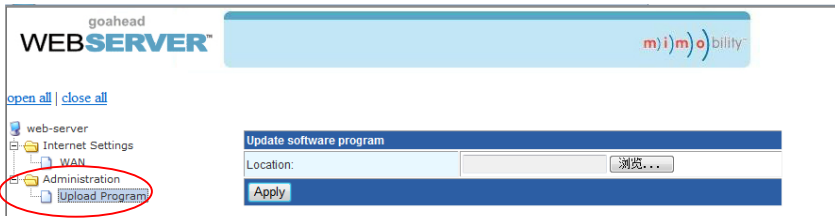**Step2.** Reboot the Matrix Switcher to enter upgrade mode. Press and hold button **2&3** when rebooting. The power indicator will keep blinking in upgrade mode.

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

Figure 4- 20 Icon of DfuSe Demonstration
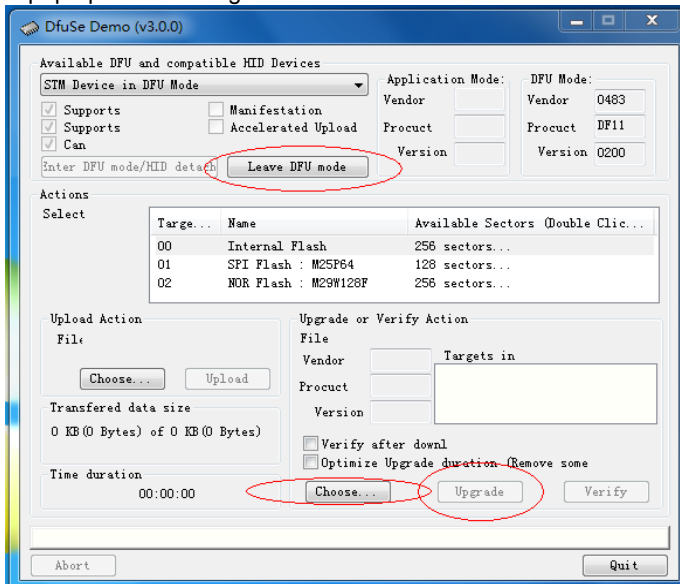
Will pop up the following window:

Figure 4- 21 Upgrade the 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 accessible for the PC and the Matrix Switcher to be connected successfully.

5. Specification

Input		Output	
Input	4 HDMI	Output	4 HDMI, 4 SPDIF audio
Input Connector	Female Type-A HDMI	Output Connector	Female Type-A HDMI 3.5mm RCA connector
Standards	HDMI2.0 & HDCP2.2	Standards	HDMI1.4& HDCP1.4
Control Ports			
Control Ports	1 IR IN (3.5mm jack) 1 TCP/IP (female RJ45) 1 RS232 (3-pin pluggable terminal block)		
General			
EDID Management	In-built EDID data and manual EDID management		
Audio Signal	Dolby Digital, DTS, DTS-HD		
Max Resolution	4Kx2K, 1080P 3D	Transmission Distance	4Kx2K@60Hz ≤15m
Power Supply	DC 12V 2A	Power Consumption	13.3W (Full Load) 4.4W (Standby)
Dimension (W*H*D)	436 x 44 x 235 mm	Weight	1.77Kg
Temperature	0 ~ 50℃	Reference Humidity	10% ~ 90%

📖 Recommend using quality HDMI cables in order to attain preferred transmission distance and effects.

5.1 Supported Resolution

Display Ratio	Resolutions
4K	4096x2160 (30,50,60 Hz), 3840x2160 (24,25,30 50 60 Hz)
21:9	2560x1080 (60Hz)
16:9	1920x1080(1080P 3D), 1600x900, 1366x768, 1280x720, 1024x576 (60Hz)
16:10	1920x1200, 1680x1050, 1440x900, 1360x768, 1280x800 (60Hz)
4:3	1600x1200, 1400x1050, 1280x1204, 1024x768, 800x600, 640x480 (60Hz)

6. Panel Drawing
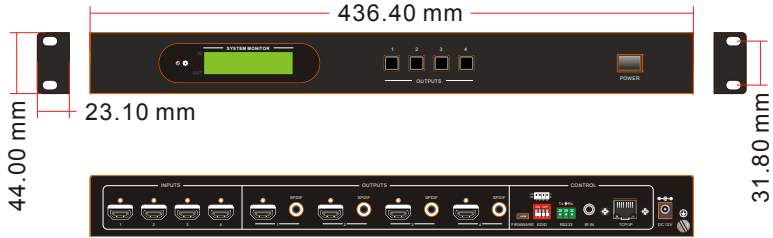
7. Troubleshooting & Maintenance

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	The battery has run off.	Change for new battery.

via IR remote	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 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.	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.

8. After-sales Service

If there appear some problems when running the device, please check and treat the problems referred to this user manual.

1) **Product Limited Warranty:** We warrants that our products will be free from defects in materials and workmanship for **three years,** which starts from the first day the product leaves warehouse (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's not covered under the Warranty:**
   - 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
   - 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 our Tech Support or call 888-975-1368, please notify us the following information about your case.
   - Product version and name.
   - Detailed failure situations.
   - The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local AV dealer, distributor or contact us at: support@kanexpro.com