User Manual

SW-H411A

HDMI 2.0 4x1 Presentation Switcher with Audio Extraction

HW REV 2

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Version: SW-H411A_REV2_2021V1.3

Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated by November, 2021. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

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 ensure 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 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. Product Introduction

Thanks for choosing the HDMI 2.0 4x1 Presentation Switcher. The switcher allows selection of four different sources (three HDMI inputs and one DisplayPort input) and will switch the selected video to HDMI output. It supports video resolution up to 4K@60Hz 4:4:4 8bit, 1080P, and 3D. In addition, there is the smart built-in EDID setting can be selected by the 4-pin DIP switch on the rear panel.

The switcher supports stereo and multichannel audio on the HDMI inputs. In addition to the audio embedded in the HDMI output stream, the audio is simultaneously de-embedded to an optical digital audio output and a balanced analog audio output.

The switcher features multiple methods of control. When in the AUTO mode, the switcher will automatically switch to the first detected source device. When the active source is removed, the switcher will switch from input 1 to 4. The switcher can be manually controlled by the front panel buttons, IR remote, WEB UI, RS232 commands and TCP/IP commands. CEC allows the display device can be controlled by the front panel buttons and RS232/IP CEC commands.

1.1 Features

- Supports HDMI 2.0 and video resolution up to 4K@60Hz 4:4:4 8bit, 1080P, and 3D.
- 18Gbps bandwidth and supports HDR10, HDR10+, Dolby Vision.
- HDCP 2.3 compliant.
- Supports automatic switching.
- CEC control for display volume and ON/OFF.
- Controllable via RS232 and IR.
- Optical and balanced analog audio for audio de-embedding.
- Smart EDID management for various applications and customized setting.
- HDCP management

1.2 Package List

- 1x SW-H411A HDMI 2.0 4x1 Presentation Switcher
- 2x Mounting Ears with 4 Screws
- 4x Plastic Cushions
- 1x IR Receiver
- 1x IR Remote
- 1x 3-pin Terminal Block
- 1x 5-pin Terminal Block
- 1x RS232 Cable (3-pin terminal block to DB9)
- 1x Power Adapter (12V DC, 1A)
- 1x User Manual

1.3 Customer Service

We provide limited warranty for the product within **five years** counting from date of purchase (The purchase invoice shall prevail).

Note: *Please contact your distributor immediately if any damage or defect in the components is found.*

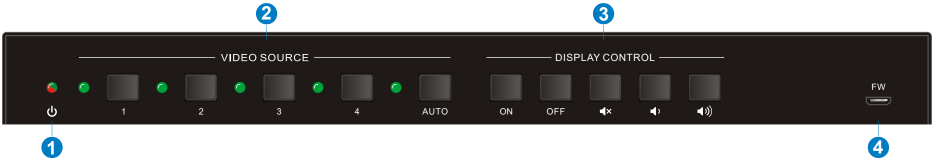
2. Specification

Video	
Video Input	(1) HDMI/MHL, (2) HDMI, (1) DP
Video Input Connector	(3) Type-A female HDMI, (1) DisplayPort
HDMI Input Resolution	Up to 4K@60Hz 4:4:4 8bit
MHL Input Resolution	Up to 1080P@60Hz
DP Input Resolution	Up to 4K@60Hz 4:4:4 8bit
Video Output	(1) HDMI
Video Output Connector	(1) Type-A female HDMI
HDMI Output Resolution	Up to 4K@60Hz 4:4:4 8bit
HDMI Version	2.0b
HDCP Version	2.3 (backwards compatible)
MHL Version	2.2
DP Version	1.2
HDR 10	Supported
CEC	Supported
HPD	Supported
Audio	
Audio Output	(1) OPTICAL, (1) Stereo balanced L/R
Audio Output Connector	(1) Toslink connector, (1) 5-pin terminal block
HDMI Audio Format	LPCM 7.1 audio, Dolby Atmos®, Dolby® TrueHD, Dolby Digital® Plus, DTS: X™, and DTS-HD® Master Audio™ pass-through.
Stereo analog L/R audio Format	PCM
Toslink Digital Audio Format	PCM, Dolby Digital, DTS, DTS-HD
Max Output Level	2.0Vrms ± 0.5dB. 2V = 16dB headroom above -10dBV (316mV) nominal consumer line level signal
THD+N	<0.05% (-80dB), 20Hz ~ 20KHz bandwidth, 1KHz sine at 0dBFS level (or max level)
SNR	>80dB, 20Hz ~ 20KHz bandwidth
Crosstalk Isolation	>70dB, 10KHz sine at 0dBFS level (or max level before clipping)
L-R Level Deviation	< 0.3dB, 1KHz sine at 0dBFS level (or max level before clipping)
Frequency Response Deviation	<± 0.5dB 20Hz ~ 20KHz
Output Load Capability	1KΩ and higher (supports 10x paralleled 10KΩ loads)
Stereo Channel Separation	>70dB@1KHz
Control	

Control	(1) FW, (1) EDID, (1) IR IN, (1) RS232, (1) TCP/IP
Control Connector	(1) Micro-USB, (1) 4-pin DIP switch, (1) 3.5mm mini jack, (1) 3-pin terminal block, (1) RJ45
General	
HDMI 2.0 Cable Length	4K@60Hz 4:4:4 ≤ 5m, 4K@60Hz 4:2:0 ≤ 10m, 1080P ≤ 15m
Bandwidth	18Gbps
Operation Temperature	-5 to +55℃ (+23° to +131°F)
Storage Temperature	-25 to +70℃ (-13° to +158°F)
Relative Humility	10% to 90%, Non-condensing
External Power Supply	Input: AC 100~240V, 50/60Hz, Output: 12V DC 1A
Power Consumption	5W (Max)
Dimension (W*H*D)	262mm x 26mm x 84mm
Net Weight	320g

3. Panel Description

3.1 Front Panel



① **Power LED:** The LED illuminates red when the device is in standby, or illuminates green when the device is power on.

② **VIDEO SOURCE:**

- Press **1~4** button to select input source respectively, and its corresponding LED illuminates green.
- Press and hold the **AUTO** button at least three seconds to enable automatic switching mode, and its LED illuminates green.

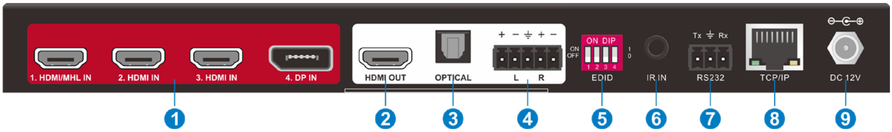
③ **DISPLAY CONTROL:**

- Press **ON** to turn on the display.
- Press **OFF** to turn off the display.
- Press 🔇 to mute/unmute display audio.
- Press 🔉 to decrease the audio volume gradually or press and hold it to decrease the audio volume constantly.
- Press 🔊 to increase the audio volume gradually or press and hold it to increase the audio volume constantly.
- The factory default IP mode is Static IP, it can be switched to DHCP IP mode by pressing 🔉 and 🔊 simultaneously and hold for 3 sec.

  Note: When switching from Static IP mode to DHCP IP mode please allow a couple of minutes for the change to take effect.

④ **FW:** Micro-USB port for firmware upgrade.

3.2 Rear Panel


1. HDMI/MHL IN
2. HDMI IN
3. HDMI IN
4. DP IN
HDMI OUT
OPTICAL
+ − ⏚ + −
L R
ON DIP
ON
OFF
1 2 3 4
EDID
IR IN
Tx ⏚ Rx
RS232
TCP/IP
DC 12V
1
2
3
4
5
6
7
8
9

① **VIDEO SOURCE:**

- Three HDMI ports to connect HDMI video sources.
- One DisplayPort port to connect DisplayPort video source.

② **HDMI OUT:** Connects to video display.

③ **OPTICAL:** Toslink connector for digital audio output.

④ **L/R:** 5-pin terminal block for balanced audio output.

⑤ **EDID:** 4-pin DIP switch for EDID setting.

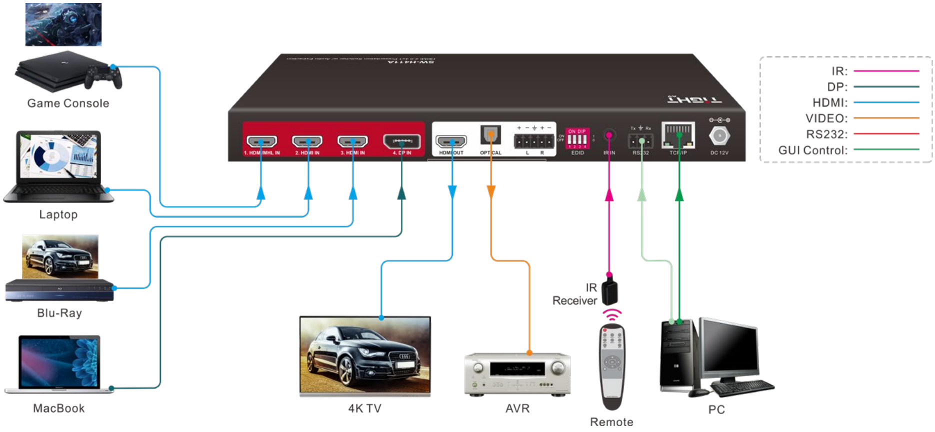
⑥ **IR IN:** Connects to IR receiver to control the switcher by the included IR remote.

⑦ **RS232:** Connects to RS232 control device (PC) or a device to be controlled by RS232 commands.

⑧ **TCP/IP:** Connects to control device (e.g. PC) to control the switcher via GUI.

⑨ **DC 12V:** DC barrel port for power adapter connection.

4. System Connection


Game Console
Laptop
Blu-Ray
MacBook
4K TV
AVR
IR
Receiver
Remote
PC
IR:
DP:
HDMI:
VIDEO:
RS232:
GUI Control:

5. Button Control

5.1 Manual Switching

When the switcher is in the manual switching mode, the Auto Mode LED goes out. If need to change the input source, please directly press the **1**, **2**, **3** or **4** buttons, and the corresponding LED illuminates green immediately.

5.2 Automatic Switching

Press and hold the **AUTO** button at least three seconds to enable automatic switching, and the Auto mode LED will light.

When in the Auto mode, the switcher will switch according to the following rules:

- *The switcher will switch to the first available active input starting at input 1 to 4.*
- *New input: The switcher will automatically select the new input once detecting a new input.*
- *Reboot: If power is restored to the switcher, it will automatically reconnect the input before powered off.*
- *Source removed: When an active source is removed, the switcher will switch to the first available active input starting at 1-HDMI/MHL input.*
- *Press the Video Source button (**1**, **2**, **3** or **4**) can directly change the input source. If the corresponding source device is active, it will be switched as input source; otherwise, the switcher will switch to the first available active input starting at 1-HDMI/MHL input.*
- *Press and hold the **AUTO** button at least three seconds again can exit AUTO mode, but the input source will remain the current setting.*

5.3 Display Control

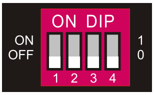
The switcher supports CEC, and the **DISPLAY CONTROL** buttons on the front panel are designed for Display On/Off and volume adjustment.

- ***ON:** Display On.*
- ***OFF:** Display Off.*
- 🔇 ***:** Mute/unmute display audio.*
- 🔉 ***:** Volume down display audio.*
- 🔊 ***:** Volume up display audio.*

5.4 EDID Setting

The Extended Display Identification Data (EDID) is used for the source device to match its video resolution with the connected display. By default, the source device obtains its EDID from the first connected display. Meanwhile, since the displays with different capabilities are connected to the switcher, the 4-pin DIP switch on the rear panel can be used to set the EDID to a built-in fixed value. Use the following table to determine the setting for the 4-pin DIP switch for specific video resolution and audio capabilities.

The switch represents “**0**” when in the lower (**OFF**) position, and it represents “**1**” while putting the switch in the upper (**ON**) position.



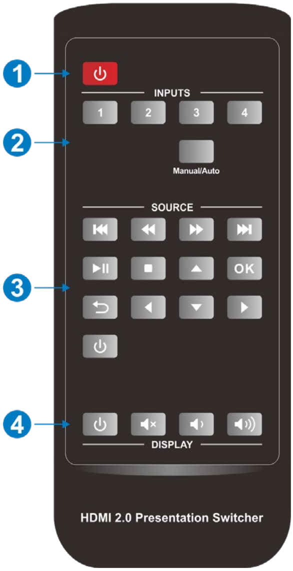
Switch Status	Video Resolution	Audio Format
0000 (Default)	EDID pass-through	
0001	1920x1080@60Hz RGB 4:4:4 8bit	Stereo Audio
0010	1920x1080@60Hz RGB 4:4:4 8bit	High Definition Audio
0011	1920x1080@60Hz RGB 4:4:4 12bit	Stereo Audio
0100	1920x1080@60Hz RGB 4:4:4 12bit	High Definition Audio
0101	3840x2160@60Hz RGB 4:2:0 12bit	Stereo Audio
0110	3840x2160@60Hz RGB 4:2:0 12bit	High Definition Audio
0111	3840x2160@60Hz HDR	Stereo Audio
1000	3840x2160@60Hz HDR	High Definition Audio
1001	1280x800@60Hz RGB 4:4:4 8bit	Stereo Audio
1010	1920x1200@60Hz RGB 4:4:4 8bit	Stereo Audio
1011	User-defined 1	
1100	User-defined 2	
1101	User-defined 3	
1110	User-defined 4	
1111	Enable GUI or RS232 EDID management.	

Note:

- *Stereo Audio: LPCM 2Ch*
- *High Definition Audio: LPCM 8Ch, AC-3 6Ch, DTS 5.1, Dolby Digital5.1.*

6. IR Remote Control

Connect the **IR IN** port to an IR receiver, the switcher can be controlled by the below IR remote.


1
2
3
4
INPUTS
1
2
3
4
Manual/Auto
SOURCE
OK
DISPLAY
HDMI 2.0 Presentation Switcher

① Enter or exit standby mode.

② Video input selection buttons (1~4) and AUTO mode button.

③ Source device CEC control buttons.

⏮	Page Up	⏭	Page Down
⏪	Rewind	⏩	Fast Forward
⏯	Pause/Play	⏹	Stop
↶	Exit	OK	Enter
▲	Up	▼	Down
◀	Left	▶	Right
⏻	Power On/Off		

④ Display device CEC/RS232 control buttons.

⏻	Power On/Off	🔇	Mute/Unmute
🔉	Volume Down	🔊	Volume Up

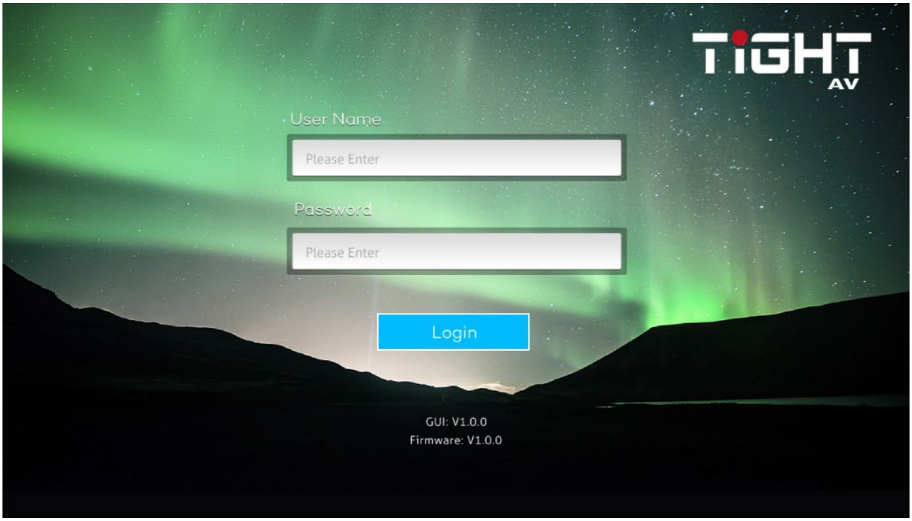
7. GUI Control

The switcher also be controlled via TCP/IP, and the default static IP setting is:

IP Address: 192.168.0.178

Subnet Mask: 255.255.255.0

Please type ***192.168.0.178*** in the internet browser, and it will enter the below log-in webpage:

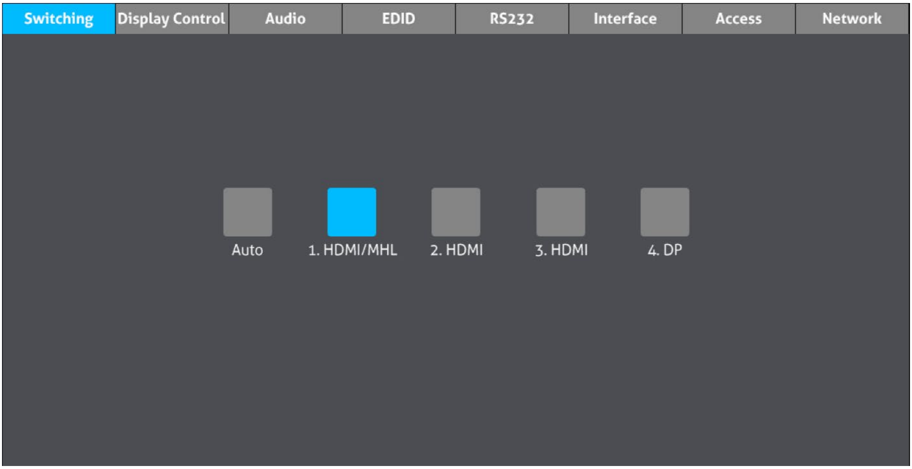

User Name
Please Enter
Password
Please Enter
Login
GUI: V1.0.0
Firmware: V1.0.0

Username: admin

Password: admin

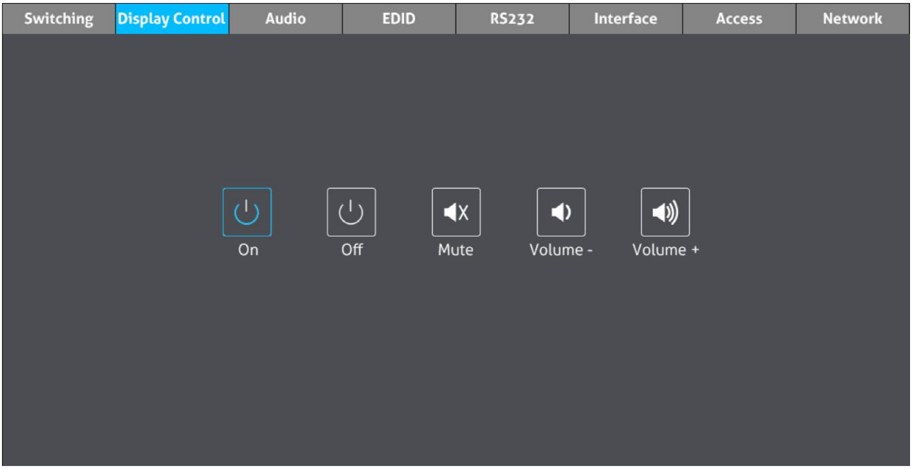
Please type the user name and password, and then click **Login** to enter the section for video switching.

7.1 Switching Tab


Switching
Display Control
Audio
EDID
RS232
Interface
Access
Network
Auto
1. HDMI/MHL
2. HDMI
3. HDMI
4. DP

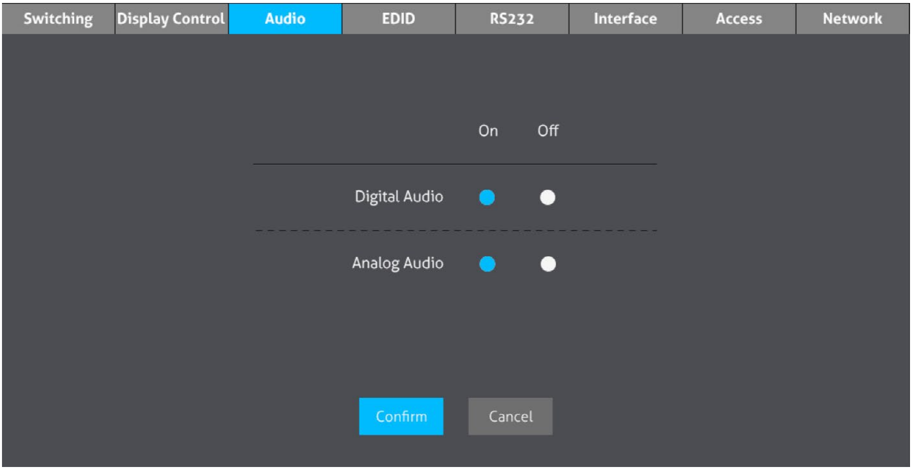
- Click the **AUTO** button to enable automatic switching mode.
- Click **1~4** button to select input source respectively.

7.2 Display Control Tab


Switching
Display Control
Audio
EDID
RS232
Interface
Access
Network
On
Off
Mute
Volume -
Volume +

- **ON:** Display On.
- **OFF:** Display Off.
- 🔇 **:** Mute/unmute display audio.
- 🔉 **:** Volume down display audio.
- 🔊 **:** Volume up display audio.

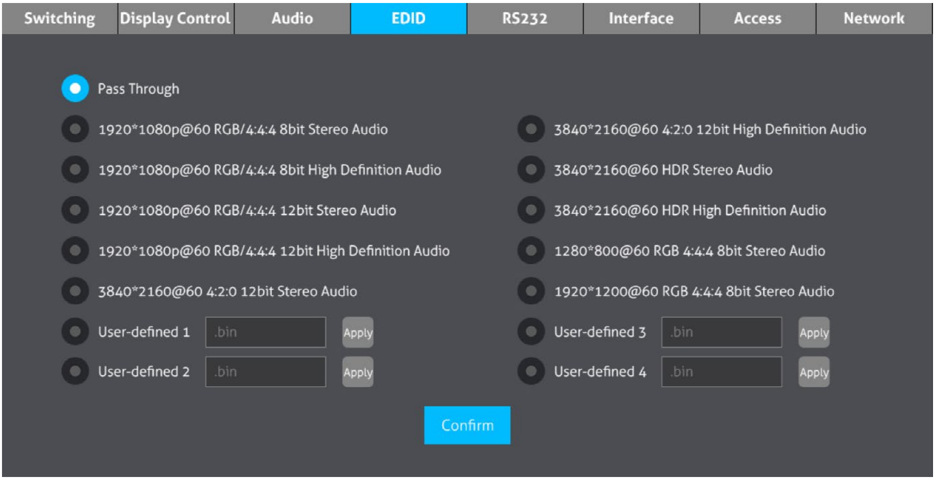
7.3 Audio Tab


Switching
Display Control
Audio
EDID
RS232
Interface
Access
Network
Confirm
Cancel

	On	Off
Digital Audio	●	○
Analog Audio	●	○

- Turn on or turn off the digital audio output.
- Turn on or turn off the analog audio output.

7.4 EDID Tab



● Pass Through
○ 1920*1080p@60 RGB/4:4:4 8bit Stereo Audio
○ 1920*1080p@60 RGB/4:4:4 8bit High Definition Audio
○ 1920*1080p@60 RGB/4:4:4 12bit Stereo Audio
○ 1920*1080p@60 RGB/4:4:4 12bit High Definition Audio
○ 3840*2160@60 4:2:0 12bit Stereo Audio
○ User-defined 1 .bin
○ User-defined 2 .bin
○ 3840*2160@60 4:2:0 12bit High Definition Audio
○ 3840*2160@60 HDR Stereo Audio
○ 3840*2160@60 HDR High Definition Audio
○ 1280*800@60 RGB 4:4:4 8bit Stereo Audio
○ 1920*1200@60 RGB 4:4:4 8bit Stereo Audio
○ User-defined 3 .bin
○ User-defined 4 .bin

***Note:** Before select EDID in this tab, please ensure the 4-pin DIP switch on the rear panel is on the "1111" position.*

- **Built-in EDID:** There are ten built-in EDID values can be selected by this tab.
- **User-defined EDID:** There are four EDID values can be customized by the below steps:

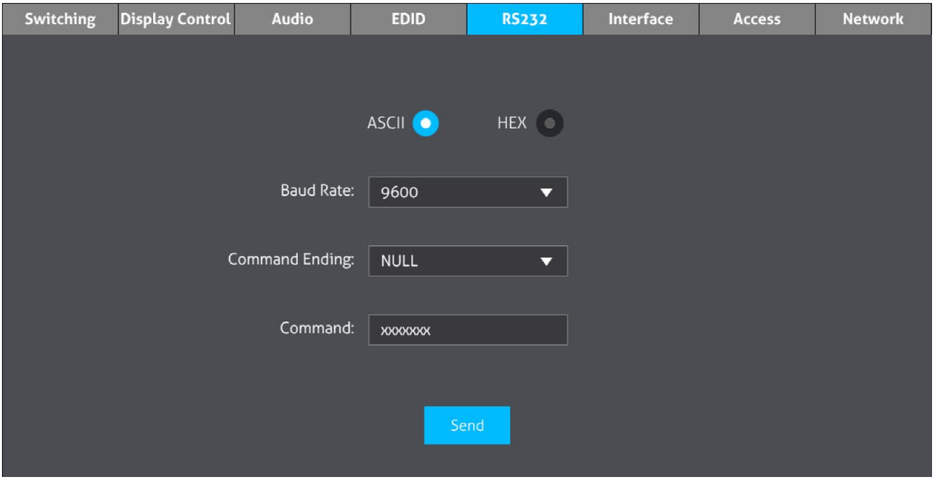
Step 1: Prepare the EDID file (.bin) on the control PC.

Step 2: Select the user-defined.

Step 3: Click the black box .bin, and then select the EDID file (.bin)

Step 4: Click **Apply** to upload the user-defined EDID.

7.5 RS232 Tab


Switching
Display Control
Audio
EDID
RS232
Interface
Access
Network
Send

ASCII ● HEX ○

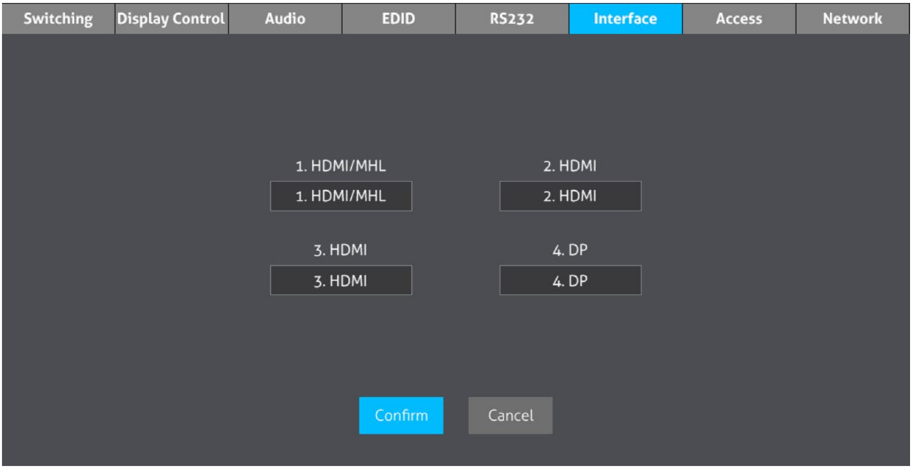
Baud Rate: 9600

Command Ending: NULL

Command: xxxxxxx

- **Baud Rate:** Supports 2400, 4800, 9600, 19200, 38400, 57600 or 115200.
- **Command Ending:** NULL, CR, LF or CR+LF can be chosen.
- **Command:** Type the command in this box to control the third-party device which is connected to the RS232 port of the switcher.

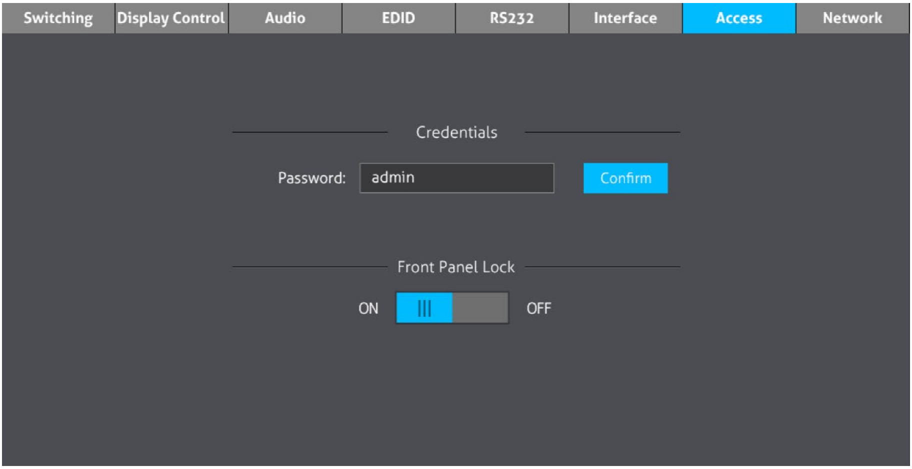
7.6 Interface Tab


Switching
Display Control
Audio
EDID
RS232
Interface
Access
Network
Confirm
Cancel

1. HDMI/MHL: 1. HDMI/MHL
2. HDMI: 2. HDMI
3. HDMI: 3. HDMI
4. DP: 4. DP

- Modify the button labels.

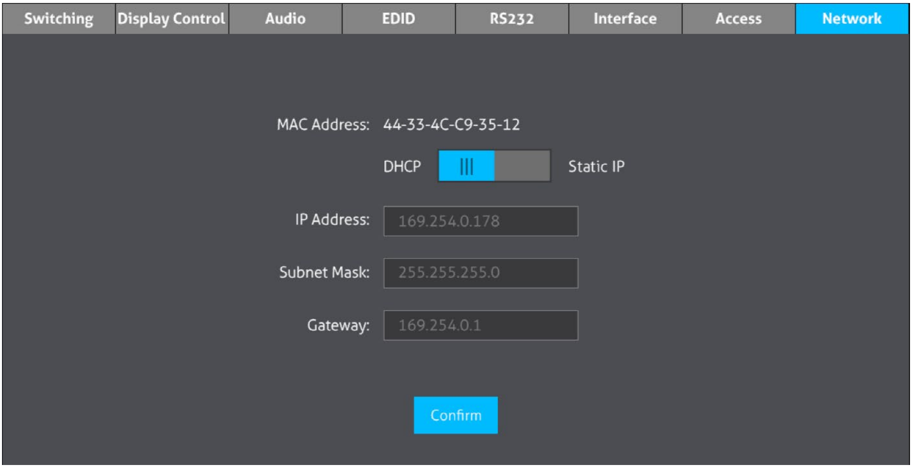
7.7 Access Tab


Switching
Display Control
Audio
EDID
RS232
Interface
Access
Network
Credentials
Confirm
Front Panel Lock
ON
OFF

Password: admin

- Modify the login password.
- Lock or unlock the front panel buttons.

7.8 Network Tab


Switching
Display Control
Audio
EDID
RS232
Interface
Access
Network
DHCP
Static IP
Confirm

MAC Address: 44-33-4C-C9-35-12

IP Address: 169.254.0.178

Subnet Mask: 255.255.255.0

Gateway: 169.254.0.1

- Set Static IP or Dynamic Host Configuration Protocol (DHCP).

  The default IP mode is Static IP, and the default Static IP address is 192.168.0.178.
- Modify the static IP Address, Subnet Mask, and Gateway and click **Confirm** to apply.

8. Device Control

8.1 RS232 Control

Connect the RS232 port to control device (e.g. PC) with RS232 cable. The switcher can be controlled by sending RS232 commands.

The list of command is used to control the switcher. The RS232 control software (e.g. docklight) needs to be installed on the control PC to send RS232 commands.

After installing the RS232 control software, please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly, and then you are able to send command in command sending area.

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

8.2 TCP/IP Control

The system can be controlled over a network connection. A TCP/IP communication software (e.g. TCP&UDP) needs to be installed on the control PC. After installing the control software, create a connection according the below parameters:

Default IP-Address: 192.168.0.178

Default Subnet Mask: 255.255.255.0

Default Gateway: 192.168.0.1

TCP Port Number: 4001

Note:

- *Command ending symbol <CR>*
- *Feedback ending with symbols <CR><LF>*
- *Delimiter symbol "!"*
- *Please type the command carefully due to case sensitivity.*

8.3 RS232 Commands

Command	Function	Example and Feedback
set:x	Switch to HDMI input [x]. x=1~4.	set:1
		set:1 ok
getInputstatus	Get the connection status of input source.	IN 1 2 3 4 LINK N N N N TMDS N N N N
autoswitchon	Enable auto switching mode.	autoswitchon ok
autoswitchoff	Enable manual switching mode.	autoswitchoff ok
poweron	Exit system standby.	poweron ok
poweroff	Enter system standby.	poweroff ok
fplockon	Lock front panel buttons.	fplock:on ok
fplockoff	Unlock front panel buttons.	fplock:off ok
reset	Factory reset.	reset ok
getstatus	Report system status.	SW-H411A! V1.0.0! POWON! Front Panel UnLock! Local RS232 Baudrate Is 9600! GUI IP DHCP:ON! GUI_IP:192.168.0.178! HDMI Out Switch Manual Mode! HDMI Out Switch To 01! DIP1001! DIPEDID1001! ByPass off! IIS_OUT_ON! SPDIF_OUT_ON! Volume of Output Volume 20! Volume of Mute! IN 1 2 3 4 LINK N N N N TMDS N N N N HDCP BYPASS!
analogon	Turn on the stereo analog L/R audio output.	analog:on ok
analogoff	Turn off the stereo analog L/R audio output.	analog:off ok
spdifon	Turn on the Toslink digital audio output.	spdif:on ok

Command	Function	Example and Feedback
spdifoff	Turn off the Toslink digital audio output.	spdif:off ok
displayon	Power on the display.	displayon ok
displayoff	Power off the display.	displayoff ok
displayaudioInc	Volume up the display.	displayaudioinc ok
displayaudiodec	Volume down the display.	displayaudiodec ok
displayaudiomute	Mute/unmute the display.	displayaudiomute ok
lovol:x	Set volume of analog L/R audio output to [x]. [x]=0~100	lovol:10 ok
lovolinc	Volume up the analog L/R audio output.	lovol:65 ok
lovoldec	Volume down the analog L/R audio output.	lovol:64 ok
unmute	Unmute the analog L/R audio output.	mute:off ok
mute	Mute the analog L/R audio output.	mute:on ok
bypassaudioon	Enable audio bypass.	bypassaudio:on ok
bypassaudiooff	Disable audio bypass.	bypassaudio:off ok
getip	Report GUI IP.	ip:192.168.1.10
setipdhcp	Set the IP mode to DHCP.	setipdhcp ok
setip:xxx.xxx.xxx.xxx	Set GUI IP to xxx.xxx.xxx.xxx.	setip:xxx.xxx.xxx.xxx ok
getdip	Read the EDID DIP switch status.	dip:0101
setdip:xxxx	Invoke the preset EDID. xxxx represents the 4-pin DIP switch status. Please refer to the ***5.4 EDID Setting***. ***Note:*** *When invoke the preset EDID, the 4-pin EDID DIP switch on the rear panel must be in the "1111" status.*	setdip:0001 ok error: (any other error then wrong dip) if dip is wrong send error message of "Please Set DIP 1111 First!
setedid:xxxx	User-defined EDID. xxxx = 1011, 1100, 1101 or 1110. **Operation:** **Step 1:** Prepare the EDID file (.bin). **Step 2:** Set the 4-pin DIP switch to "1111" status.	setedid:xxxx ok

Command	Function	Example and Feedback
	Step 3: Send the command "EDIDW1101.", and the feedback is "Please Send The EDID File!". **Step 4:** Send the EDID file (.bin). If successfully upload, the feedback is: "Received The File! Length=256! EDID1101 Update OK!"	error: (any other error then wrong dip) if dip is wrong send error message of "Please Set DIP 1111 First!
gethdcp	Shows the current HDCP mode on output	HDCP BYPASS!
hdcpon	Sets the HDCP to ON for the output	hdcpon ok
hdcpbypass	Sets the HDCP to Bypass for the output	hdcpbypass ok
switchstable	Adds a delay to the switching to make a more stable switch when needed for compatibility.	hdmi out switch stable mode ok
switchfast	Switch as fast as possible (default)	hdmi out switch fast mode ok
setbaudrate:x	Set RS-232 baudrate, x = 1 - 7 1 = 2400, 2 = 4800, 3 = 9600 (default), 4 = 19200, 5 = 38400, 6 = 57600 and 7 =115200	baudrate:1 ok
sendascii,y,z:xxx	Send Ascii command out using specified baud rate, xxx is the ascii command, y is baudrate (1-7, see baudrate command), z is delay in 1/10 seconds,(Values in the 1 ~ 255)	sendAscii,3,0:POW_ON No feedback for this command. The ASCII command is sent out by itself.
sendhex,y,z:xx xx xx	Send hex command out using specified baud rate, xx xx is the hex command, y is baudrate (1-7, see baudrate command), z is delay in 1/10 seconds,(Values in the 1 ~ 255)	sendHex,3,10:50 4F 57 52 5F 4F 4E No feedback for this command. The HEX command is sent out by itself.
sendasciion,y,z:xxx	Send Ascii command out using specified baud rate when device is powered on or display is pressed, xxx is the ascii command, y is	sendAsciiOn,3,0:POW_ON sendasciion,3,0:POW_ON ok

Command	Function	Example and Feedback
	baudrate (1-7, see baudrate command), z is delay in 1/10 seconds,(Values in the 1 ~ 255)	
sendhexon,y,z:xx xx xx xx	Send hex command out using specified baud rate when device is powered on or display is pressed, xx xx is the hex command, y is baudrate (1-7, see baudrate command), z is delay in 1/10 seconds, (Values in the 1 ~ 255)	sendHexOn,3,10:50 4F 57 52 5F 4F 4E
		sendhexon,50 4F 57 52 5F 4F 4E ok
sendasciioff,y,z:xxx	Send Ascii command out using specified baud rate when device is powered off or display off is pressed, xxx is the ascii command, y is baudrate (1-7, see baudrate command), z is delay in 1/10 ,seconds(Values in the 1 ~ 255).	sendAsciiOff,3,0:POW_OFF
		sendasciioff,3,0:POW_OFF ok
sendhexoff,y,z:xx xx xx	Send hex command out using specified baud rate when device is powered off or display off is pressed, xx xx is the hex command, y is baudrate (1-7, see baudrate command), z is delay in 1/10 seconds,(Values in the 1 ~ 255)	sendHexOff,3,10:50 4F 57 52 5F 4F 4E
		sendhexoff,50 4F 57 52 5F 4F 4E ok
cecin,x:[command]	Send CEC command to control the source device ● The **x** represents the input ports. ● The input ports supported are 1-3 ● The "**[command]**" represents the specific command from the table below.	Send CEC_RC_PLAY on input 1 cecin,1:44
		cecin,1:44 ok
cecout,y:[command]	Send CEC command to control the source device ● The **y** represents the output port. ● The output ports are 1 ● The "**[command]**" represents the specific command from the table below.	Send CEC_RC_POWER_OFF_FUNCTION on output 1 cecout,1:6C
		cecout,1:6C ok

CEC Function	Command
CEC_RC_SELECT	00
CEC_RC_UP	01
CEC_RC_DOWN	02
CEC_RC_LEFT	03
CEC_RC_RIGHT	04
CEC_RC_RIGHT_UP	05
CEC_RC_RIGHT_DOWN	06
CEC_RC_LEFT_UP	07
CEC_RC_LEFT_DOWN	08
CEC_RC_ROOT_MENU	09
CEC_RC_SETUP_MENU	0A
CEC_RC_CONTENTS_MENU	0B
CEC_RC_FAVORITE_MENU	0C
CEC_RC_EXIT	0D
//	0E - 1F Reserved
CEC_RC_0	20
CEC_RC_1	21
CEC_RC_2	22
CEC_RC_3	23
CEC_RC_4	24
CEC_RC_5	25
CEC_RC_6	26
CEC_RC_7	27
CEC_RC_8	28
CEC_RC_9	29
CEC_RC_DOT	2A
CEC_RC_ENTER	2B
CEC_RC_CLEAR	2C
//	2D - 2F Reserved

CEC_RC_CHANNEL_UP	30
CEC_RC_CHANNEL_DOWN	31
CEC_RC_PREVIOUS_CHANNEL	32
CEC_RC_SOUND_SELECT	33
CEC_RC_INPUT_SELECT	34
CEC_RC_DISPLAY_INFORMATION	35
CEC_RC_HELP	36
CEC_RC_PAGE_UP	37
CEC_RC_PAGE_DOWN	38
//	39 - 3F Reserved
CEC_RC_POWER	40
CEC_RC_VOLUME_UP	41
CEC_RC_VOLUME_DOWN	42
CEC_RC_MUTE	43
CEC_RC_PLAY	44
CEC_RC_STOP	45
CEC_RC_PAUSE	46
CEC_RC_RECORD	47
CEC_RC_REWIND	48
CEC_RC_FAST_FORWARD	49
CEC_RC_EJECT	4A
CEC_RC_FORWARD	4B
CEC_RC_BACKWARD	4C
CEC_RC_STOP_RECORD	4D
CEC_RC_PAUSE_RECORD	4E
//	4F Reserved
CEC_RC_ANGLE	50
CEC_RC_SUB_PICTURE	51
CEC_RC_VIDEO_ON_DEMAND	52
CEC_RC_ELECTRONIC_PROGRAM_GUIDE	53

CEC_RC_TIMER_PGRMING	54
CEC_RC_INITIAL_CONFIGURATION	55
CEC_RC_SELECT_BROADCAST_TYPE	56
CEC_RC_SELECT_SOUND_PRESENTATION	57
//	58 - 5F Reserved
CEC_RC_PLAY_FUNCTION	60
CEC_RC_PAUSE_PLAY_FUNCTION	61
CEC_RC_RECORD_FUNCTION	62
CEC_RC_PAUSE_RECORD_FUNCTION	63
CEC_RC_STOP_FUNCTION	64
CEC_RC_MUTE_FUNCTION	65
CEC_RC_RESTORE_VOLUME_FUNCTION	66
CEC_RC_TUNE_FUNCTION	67
CEC_RC_SELECT_DISK_FUNCTION	68
CEC_RC_SELECT_AV_INPUT_FUNCTION	69
CEC_RC_SELECT_AUDIO_INPUT_FUNCTION	6A
CEC_RC_POWER_TOGGLE_FUNCTION	6B
CEC_RC_POWER_OFF_FUNCTION	6C

9. Firmware Upgrade

9.1 MCU Upgrade

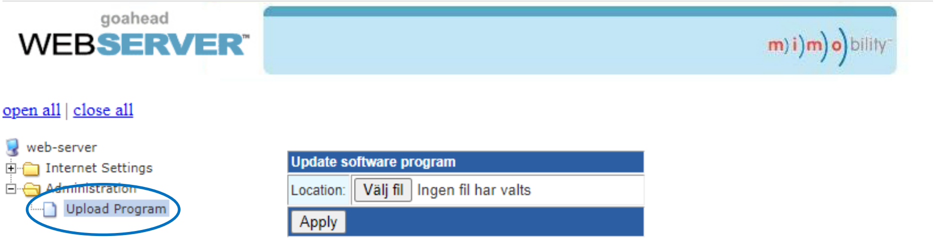
Please follow the steps as below to upgrade firmware by the **FW** port on the front panel:

1) Prepare the latest upgrade file (.bin) and rename it as “USERAPP.bin” on PC.
2) Power off the switcher, and connect the **FW** port of switcher to the PC with USB cable.
3) Power on the switcher, and then the PC will automatically detect a U-disk named of “BOOTDISK”.
4) Double-click the U-disk, a file named of “READY.TXT” would be showed.
5) Directly copy the latest upgrade file (.bin) to the “BOOTDISK” U-disk.
6) Reopen the U-disk to check the filename “READY.TXT” whether automatically becomes “SUCCESS.TXT”, if yes, the firmware was updated successfully, otherwise, the firmware updating is fail, the name of upgrade file (.bin) should be confirm again, and then follow the above steps to update again.
7) Remove the USB cable after firmware upgrade.
8) After firmware upgrade, the switcher should be restored to factory default by sending command.

9.2 GUI Upgrade

Please visit http://192.168.0.178:100 for GUI online upgrade.

Type the username and password (the same as the GUI log-in setting, modified password will be available only after rebooting of the unit) to login the configuration interface. After that, click **Administration** in the source menu to get to **Upload Program** as shown below:


goahead
WEBSERVER™
m)i)m)o)bility™
open all | close all
web-server
Internet Settings
Administration
Upload Program
Update software program
Location:
Välj fil
Ingen fil har valts
Apply

Select the update file and click **Apply** button, and then it will start upgrade process.