EL-8400VA

6x2 Presentation Seamless Matrix with USB

OPERATION MANUAL

HIGH-DEFINITION MULTIMEDIA INTERFACE

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. CYP (UK) Ltd assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

CYP (UK) Ltd assumes no responsibility for any inaccuracies that may be contained in this document. CYP (UK) Ltd also makes no commitment to update or to keep current the information contained in this document.

CYP (UK) Ltd reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

Version 1.1

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.
- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
v1.00	2024/8/23	Initial Release

CONTENTS

1. INTRODUCTION

The EL-8400VA Presentation Matrix is a multi-format switching matrix with integrated scaling featuring HDMI, DisplayPort, USB Type-C, and HDBaseT I/O. The selected source (video & audio) can be transmitted with HDMI or HDBaseT2 technology over Cat.6A cable up to 100 metres along with bi-directional Ethernet, RS-232, USB, and IR as well as providing 48V PoH power to compatible HDBaseT2 transmitter (PUV-2606TX) and receiver (PUV-2010RX) .

The HDMI, DisplayPort and USB-C ports support resolutions up to 4K@60 (4:4:4, 8-bit) while the HDBaseT output supports automatic down-conversion of 4K60(4:4:4) sources to 4K60(4:2:0).

The EL-8400VA also includes multiple analogue stereo audio inputs and two microphone inputs, a stereo 20W per channel amplifier and balanced stereo audio output complete the audio I/O. The built-in DSP audio mixer function allows the user to mix audio from any analogue input with the microphone input for presentation or lecture usage. The ability to switch back and forth between mixed and non-mixed audio greatly simplifies the presentation experience. Standard control is available via front panel buttons with selectable volume control knob. Standard On-Screen Display(OSD), RS-232, Telnet, and WebGUI control is available making it exceptionally versatile.

2. APPLICATIONS

- Lecture room display and control
- Showroom display and control
- Meeting room presentation and control
- Classroom display and control

3. PACKAGE CONTENTS

- 4K60 6X2 Multi-Format to HDMI/HDBaseT Seamless Switch Matrix
- 1× Power Cord
- 1× Shockproof Feet (Set of 4)
- 2× 2-Pin Phoenix Connector
- 2× 4-Pin Phoenix Connector
- 4× 5-Pin Phoenix Connector
- 1× 6-Pin Phoenix Connector
- 1× 10-Pin Phoenix Connector
- 1× Operation Manual

4. SYSTEM REQUIREMENTS

- HDMI, DisplayPort, or USB-C source equipment such as media players, video game consoles , PCs, or set-top boxes
- HDMI receiving equipment such as an HDTV, monitor or audio amplifier
- Compatible HDBaseT transmitters and receiver with PoH support is recommended.
- Analog audio receiving equipment such as audio amplifiers or powered speakers
- The use of Premium High Speed HDMI cables, and industry standard Cat.6, Cat.6A or Cat.7, is highly recommended

5. FEATURES

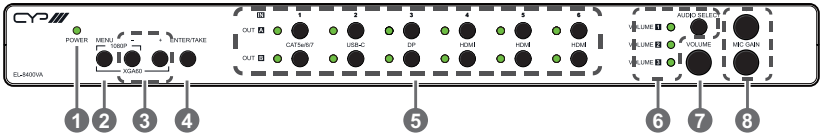
- Supports standard PoH (PSE) from both HDBaseT input and output to the connected HDBaseT (PD) transmitter and receiver (compatible transmitter/receiver only)
- HDBaseT output transmits video and audio over a single Cat.5e cable of 1080p up to 90m/295ft for input and 70m/230ft for output,Cat.6a cable 100m/328ft at 4K@30
- Supports HDBaseT feature set: HD Video & Audio, 100BaseT Ethernet, 48V PoH, and Control(Bidirection IR/RS-232/USB pass through)
- Controllable via front panel controls with OSD, RS-232, Telnet, WebGUI, and triggers
- USB Type-C port provides up to 60W of power to connected device
- High performance and efficient Class-D amplifier (20W per channel)
- Microphone input supports optional 48V or 5V phantom power
- 6 video inputs (1×USB-C, 1×HDBaseT, 3×HDMI, 1×DisplayPort) and 2 video outputs(HDMI & HDBaseT)
- 15 audio sources(10 audio inputs and 5 mixers) can be routed independently to any of the 5 audio outputs
- Audio mixer function allows the mixing of audio from any 4 LPCM 2.0 audio sources, including the microphone inputs with auto-gain functionality
- Adjustable gain control for individual audio sources and volume control for any outputs
- Multiple USB hosts may be connected at once (up to 4 total, between the unit and compatible Tx/Rx) with a single selected host active at a time
- Supports manual input selection or automatic input selection for video and USB, with hot plug detection and "Last Memory" feature
- Seamless switching (no loss of sync to display)
- Comprehensive EDID and HDCP management
- Trigger Control Keypad support for easy, single-button and function activation (Optional)
- HDBaseT output supports resolutions up to 4K@60Hz (4:2:0, 8-bit) or 4K@30Hz (4:4:4, 8-bit). 4K@50/60Hz (4:4:4, 8-bit) or 4K@any (10/12-bit)

sources will be automatically colour space converted to fit within the available bandwidth

- Supports up to 4K UHD (18Gbps, 4K@50/60Hz 4:4:4, 8-bit) digital video input (HDMI, USB-C, DP) and output (HDMI)
- HDBaseT 2.0 compatible
- HDMI 2.0, DisplayPort 1.4 compliant
- HDCP 1.x and 2.2 compliant

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



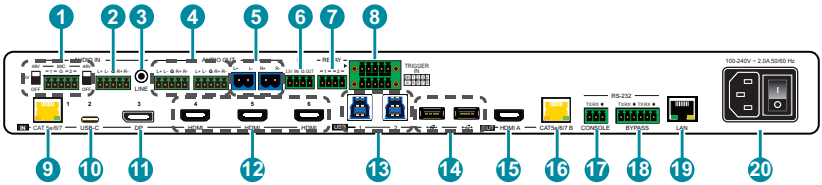
1. **POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.
2. **MENU:** Press to enter the OSD menu, or to back out from menu items.

   Note: Pressing "MENU" and "+" together will reset the output resolution to XGA (1024×768@60Hz). Pressing "MENU" and "–" together will reset the output resolution to 1080p@60Hz.
3. **PLUS/MINUS(-/+):** Press to navigate or to adjust selections within the OSD menu.
4. **ENTER:** Press to confirm a selection within the OSD or to go deeper into a menu item.
5. **INPUTS & LEDs:** Press any of these buttons to switch immediately to the corresponding input of the two outputs. The OUT A/B LEDs will illuminate to indicate which source is currently selected for each output.
6. **AUDIO SELECT Button & LEDs:** Press this button to select which audio output's volume is controlled by the volume knob. The LED will illuminate to indicate which source is currently selected.
7. **VOLUME Knob:** Turn this knob to increase or decrease the audio volume level of for the selected audio source.

   Note: Press to toggle between muting or unmuting for the selected audio output.
8. **MIC GAIN 1~2 Knobs:** Turn these knobs to manually set the microphone input's gain level.

   Note: Press to toggle between muting or unmuting for the selected microphone input.

6.2 Rear Panel



1. **MIC IN 1~2 Ports & 48V/5V/OFF Switches:** Connect to standard microphones using a 5-pin terminal block adapter cable. Set the switches based on the phantom power requirements of the connected microphones.

   Note: If no phantom power is required, this switch should remain in the"Off" position to avoid potential damage to connected equipment.

2. **AUDIO IN 5-pin Terminal Block:** Connect to the analog stereo output of a device such as an audio player or PC.

3. **LINE IN Port:** Connect to the analog stereo output of a device such as an audio player or PC.

4. **AUDIO OUT 5-pin Terminal Blocks:** Connect to powered speakers or an amplifiers for analog stereo audio output.

5. **AUDIO OUT L/R 2-pin Terminal Blocks:** Connect to unpowered 4Ω speakers for analog stereo audio output. Up to 20W of power is provided to each speaker.

6. **IR IN Port 2-pin Terminal Block (Left):** Connect to an IR Extender to receive local IR control signals and extend them to devices connected to the other end of the HDBaseT connection. Ensure that the remote being used is within direct line-of sight of the IR Extender.

   IR OUT Port 2-pin Terminal Block (Right): Connect to an IR Blaster to transmit IR signals from the other end of the HDBaseT connection to devices within direct line-of sight of the IR Blaster.

   Note: IR signals can only be routed across a single HDBaseT connection at a time. The HDBaseT connection to use is defined within the WebGUI or OSD menu.

7. **RELAY 1~2 2-pin Terminal Blocks:** Connect to devices that can be powered and controlled via a DC 0~24V/5A relay connection such as a curtain, projection screen, or lights.

8. **TRIGGER IN 10-pin Terminal Block:** Connect to the Trigger Control Keypad (Optional) or any device with trigger switch functionality such as window security alarms, motion detectors, door switches, etc. Each of the 8 triggers will activate an assigned unit function when triggered.

   Note: A minimum of 5V DC is required to activate a trigger.

9. **CAT 5e/6/7 IN Port:** Connect to compatible HDBaseT transmitters with a single Cat.5e/6/7 cable for reception of all data signals. PoH will also be supplied to connected compatible PD transmitters.

10. **USB-C IN Port:** Connect to USB Type-C host or video source equipment such as a PC or laptop. When the USB-C port has "Super Speed" support active, this port can support 4K30 A/V and USB simultaneously.

    Note: Not all devices with USB Type-C ports can support video output. Please verify that the device supports video output from the USB Type-C port before attempting to use it as a video source.

11. **DP IN Port:** Connect to DisplayPort source equipment such as a media player, PC, or set-top box.

12. **HDMI IN 4~6 Ports:** Connect to HDMI source equipment such as media players, game consoles, or set-top boxes. DVI source are supported with the use of an HDMI to DVI adapter.

13. **USB 3.0 Host 1~2 Ports (Type-B):** Connect directly to a standard USB hosts such as a PC or laptop to extend their USB functionality to all currently connected USB devices.

14. **USB 3.0 Device Ports (Type-A):** Connect directly to standard USB devices such as a mouse, keyboard or flash drive to extend their USB functionality to the host connected to the USB 3.0 Host Port.

15. **HDMI OUT A Port:** Connect to HDMI TV, monitor, or amplifier for digital video and audio output.

16. **CAT5e/6/7 OUT Port:** Connect to a compatible HDBaseT receiver with a single Cat.5e/6/7 cable for transmission of all data signals. PoH will also be supplied to a connected compatible PD receiver.

17. **RS-232 CONSOLE 3-pin Terminal Block:** Connect directly to a PC, laptop, or other serial control device with a 3-pin adapter cable to send RS-232 commands to control the unit.

18. **RS-232 1 3-pin Terminal Block (Left):** Connect to a PC, laptop, or serial controllable device with a 3-pin adapter cable for the extension

of RS-232 signals between this unit and the designated HDBaseT connection.

RS-232 2 3-pin Terminal Block (Right): Connect to a PC, laptop, or serial controllable device with a 3-pin adapter cable for the extension of RS-232 signals between this unit and the designated HDBaseT connection.

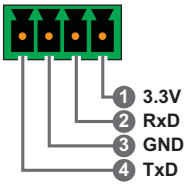
Note: RS-232 signals can be routed to both HDBaseT connections or bypassed between them. The connection to use is defined within the WebGUI or OSD menu.

19. **LAN Port:** Connect directly, or through a network switch, to your PC/laptop to control the unit via Telnet/WebGUI and to extend the network across the HDBaseT connection.
20. **100-240V~2.0A 50/60 Hz Power Port:** Plug AC power cord into the unit and connect it to an AC wall outlet for power.

6.3 IR Cable Pinouts

IR Blaster + IR Extender

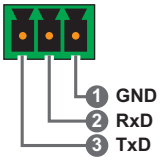
4-pin Terminal Block



6.4 Serial Pinout and Defaults

Serial Port Default Settings	
Baud Rate	19200
Data Bits	8
Parity Bits	None
Stop Bits	1
Flow Control	None

3-pin Terminal Block



6.5 OSD Menu

All functions of this unit can be controlled by using the OSD (On Screen Display) which is activated by pressing the MENU button on the front of the unit. Use the + (PLUS), – (MINUS), and ENTER buttons to navigate the OSD menu. Press the MENU button to back out from any menu item and then press it again to close the menu.

MAIN MENU
Video Route
Video Settings
Picture
Audio
Pre-gain
Input EDID
HDCP Mode
Output Resolution
OSD Settings
Other Interface
Ethernet
Preset
Setup
Information

The individual functions of the OSD will be introduced in the following section. Items marked in **BOLD** are the factory default settings.

VIDEO MODE	
2ND LEVEL	**3RD LEVEL**
Fade In Out	On
	OFF
OUT A Source	In 1~6 **(IN 1)**
OUT B Source	In 1~6 **(IN 2)**
Auto Switch	
OUT Select	Out A
	Out B
OUT AutoSW EN	**Enable**
	Disable
OUT AutoSW IN1	**ON**
	Off
OUT AutoSW IN2	**ON**
	Off
OUT AutoSW IN3	**ON**
	Off
OUT AutoSW IN4	**ON**
	Off
OUT AutoSW IN5	**ON**
	Off
OUT AutoSW IN6	**ON**
	Off

1) **Fade In/Out:** Enable or disable crossfading between sources.
2) **OUT A/B Source:** Select the video source for the specified output.
3) **OUT Select:** Select the output to modify.

Note: All settings below are individually saved, per-output

4) **OUT AutoSW EN:** Enable or disable automatically switching to any newly detected source for each output.

5) **OUT AutoSW IN1~6:** Enable or disable the input source that will be available for auto-switching for each output.

VIDEO SETTINGS	
2ND LEVEL	**3RD LEVEL**
Input Select	In 1~6 **(IN 1)**
Aspect Ratio	**FULL**
	16:9
	16:10
	4:3
	Best Fit
Freeze	On
	OFF
Mirror	On
	OFF
Rotate	On
	OFF
Border On/Off	On
	OFF

VIDEO SETTINGS	
2ND LEVEL	**3RD LEVEL**
Border Colour	Black
	Red
	GREEN
	Blue
	Yellow
	Magenta
	Cyan
	White
	Dark Red
	Dark Green
	Dark Blue
	Dark Yellow
	Dark Magenta
	Dark Cyan
	Gray
Window Reset	**NO**
	Ok

1) **Input Select:** Select the input to modify.

   Note: All settings are individually saved, per-input.

2) **Aspect Ratio:** Select a fixed aspect ratio for the currently selected input. The aspect ratio will be based on the input's current height. Selecting the "Full" aspect ratio will stretch the source to fill the output, regardless of original aspect. Selecting "Best Fit" will automatically set the ratio based on the input's current source resolution.

3) **Freeze:** Enable or disable freezing the video output.

4) **Mirror:** Selecting "On" will flip the currently selected window horizontally.

5) **Rotate:** Enable or disable rotating the output image counterclockwise by 90 degrees.

   Note: When the output resolution is set to 4K, only input 1 can be rotated.

6) **Border On/Off:** Enable or disable the colour border around the currently selected input.

7) **Border Colour:** Select the colour to use for the border of the currently selected input.

8) **Window Reset:** Reset the current input window to its default settings based on the unit.

PICTURE	
2ND LEVEL	**3RD LEVEL**
Input Select	IN 1~6
Contrast	0~100 **(75)**
Brightness	0~100 **(50)**
Saturation	0~100 **(50)**
Hue	0~100 **(50)**
Sharpness H	0~10 **(10)**
Sharpness V	0~10 **(10)**
Reset	**NO**
	Ok

1) **Input Select:** Select the input to modify.

   Note: All settings are individually saved, per-input.

2) **Contrast:** Set the overall contrast of the currently selected input.

3) **Brightness:** Set the overall brightness of the currently selected input.

4) **Saturation:** Set the overall saturation of the currently selected input.

5) **Hue:** Set the hue shift of the currently selected input.

6) **Sharpness H/V:** Set the amount of sharpness processing to apply to the currently selected input.

7) **Reset:** Reset the current input to its default settings.

AUDIO	
2ND LEVEL	**3RD LEVEL**
Out Select	OUT A (HDMI)
	OUT B (HDBT)
	OUT C (BALANCE)
	OUT D (BALANCE)
	OUT E (AMP)
Out Source	**FOLLOW OUT A**
	FOLLOW OUT B
	IN 1 (HDBT)
	IN 2 (TYPE C)
	IN 3 (DP)
	IN 4 (HDMI 4)
	IN 5 (HDMI 5)
	IN 6 (HDMI 6)
	IN 7 (MIC 1)

AUDIO	
2ND LEVEL	**3RD LEVEL**
	IN 8 (MIC 2)
	IN 9 (BALANCE)
	IN 10 (LINE)
	MIXER 1
	MIXER 2
	MIXER 3
	MIXER 4
	MIXER 5
Out Volume	0~100 **(80)**
Out Mute	On
	OFF
Out Delay	0~100 **(0)**
Mix Source 1	NONE
	IN 1 (HDBT)
	IN 2 (TYPE C)
	IN 3 (DP)
	IN 4 (HDMI 4)
	IN 5 (HDMI 5)
	IN 6 (HDMI 6)
	IN 7 (MIC 1)
	IN 8 (MIC 2)
	IN 9 (BALANCE)
	IN 10 (LINE)
Mix Source 2	[Same options as for Mix Source 1]

AUDIO	
2ND LEVEL	**3RD LEVEL**
Mix Source 3	[Same options as for Mix Source 1]
Mix Source 4	[Same options as for Mix Source 1]
Reset	**NO**
	Yes

1) **Out Select:** Select the audio output to modify.

   Note: All settings are individually saved, per-output.

2) **Out Source:** Selects the audio source routing behavior of the currently selected output.
   - **Follow Out A/B:** Enables the audio output to match the current audio content of the output A/B.
   - **In 1~6:** Forces video source to be paired with the selected input's native embedded audio content.
   - **In 7~10:** Forces audio output to use a specific audio source.
   - **Mixer 1~5:** Forces audio output to use a specific mixer.

3) **Out Volume:** Provides control over the volume level of the currently selected output.

4) **Out Mute:** Mute or unmute the currently selected output.

5) **Out Delay:** This control sets the amount of audio delay to use, in milliseconds.

6) **Mix Source 1~4:** Up to four selected audio inputs can be combined into a single output. Selecting "NONE" decreases mixing sources.

   Note: The selections will be enabled when the "Out Source" is set to Mixer 1~5.

7) **Reset:** Reset all audio settings back to their factory defaults.

PRE-GAIN	
2ND LEVEL	**3RD LEVEL**
MIC TALK OVER	On
	OFF
Pre-Gain	
Pre-gain IN1 (HDBT)	0~100 **(80)**
Pre-gain IN 2 (TYPE C)	0~100 **(80)**
Pre-gain IN 3 (DP)	0~100 **(80)**
Pre-gain IN 4 (HDMI 4)	0~100 **(80)**
Pre-gain IN 5 (HDMI 5)	0~100 **(80)**
Pre-gain IN 6 (HDMI 6)	0~100 **(80)**
Pre-gain IN 7 (MIC 1)	0~30 **(1)**
Pre-gain IN 8 (MIC 2)	0~30 **(1)**
Pre-gain IN 9 (BALANCE)	0~100 **(80)**
Pre-gain IN 10 (LINE)	0~100 **(80)**
Reset	**NO**
	Yes

1) **MIC Talk Over:** Enable or disable the microphone talk-over function in mixed source audio.
2) **Pre-gain IN 1~10:** Adjust each audio input's volume level individually.
3) **Reset:** Reset all pre-gain settings back to their factory defaults.

INPUT EDID	
2ND LEVEL	**3RD LEVEL**
All EDID	INDEPENDENT
	FHD 2CH
	4K UHD 2CH
	4K UHD^{+} 2CH
	Sink OUT A
	Sink OUT B
	User 1
	User 2
	User 3
	User 4
	User 5
	User 6
IN 1 EDID	[Same options as for All EDID]
IN 2 EDID	[Same options as for All EDID]
IN 3 EDID	[Same options as for All EDID]
IN 4 EDID	[Same options as for All EDID]
IN 5 EDID	[Same options as for All EDID]
IN 6 EDID	[Same options as for All EDID]

1) **All EDID:** Select the EDID to assign to all inputs.

Note: When the EDIDs of inputs are not identical, will show

"INDEPENDENT" instead.

2) **In 1~6 EDID:** Select the EDID to assign to the specified input.

HDCP MODE	
2ND LEVEL	**3RD LEVEL**
IN 1	HDCP Support Off
	Refer to Source
	REFER TO DISPLAY
IN 2	[Same options as for IN 1]
IN 3	[Same options as for IN 1]
IN 4	[Same options as for IN 1]
IN 5	[Same options as for IN 1]
IN 6	[Same options as for IN 1]
OUT A	[Current HDCP status display]
OUT B	

1) **IN 1~6:** Select the HDCP behavior for each input.
   - **HDCP Support Off:** Completely disables support for HDCP on that input.
   - **Refer to Source:** Makes the input port support the same HDCP version as required by the connected source.
   - **Refer to Display:** Makes the input support the HDCP version of the currently connected displays.
2) **HDCP Status:** Displays the current HDCP status of all outputs.

OUTPUT RESOLUTION	
2ND LEVEL	
640×480p59	1920×1080p25
480p60	1920×1080p30
576p50	1920×1080p50

OUTPUT RESOLUTION	
2ND LEVEL	
800×600p60	**1920×1080P60**
848×480p60	1920×1200RB
1024×768p60	2048×1152RB
1280×720p50	3840×2160p24
1280×720p60	3840×2160p25
1280×768p60	3840×2160p30
1280×800p60	4K p24 (DCI)
1280×960p60	4K p25 (DCI)
1280×1024p60	4K p30 (DCI)
1360×768p60	4K p50 (DCI)
1366×768p60	4K p59 (DCI)
1400×1050p60	4K p60 (DCI)
1440×900p60	3840×2160p50
1600×900p60RB	3840×2160p59
1600×1200p60	3840×2160p60
1680×1050p60	Native OUT A
1920×1080p24	Native OUT B

1) **Output Resolution:** Select the preferred video output resolution.
   Note: Both outputs always share the same resolution selection.

OSD SETTINGS	
2ND LEVEL	**3RD LEVEL**
Menu Position	**TOP LEFT**
	Top Right
	Bottom Right
	Bottom Left
Menu Timeout	Off
	5~60 **(10)**
Info. Timeout	Off
	5~60 **(5)**
Info. Display	**ON**
	Off
Transparency	**OFF**
	1~10
Background	Black
	GRAY
	Blue

1) **Menu Position:** Set the position of the OSD menu on the output.
2) **Menu Timeout:** Set the length of time, in seconds, that the OSD menu will continue to be displayed if there is no user input, or disable the timeout completely.
3) **Info. Timeout:** Set the length of time, in seconds, that the informational OSD will be displayed after a signal or source change, or disable the timeout completely.
4) **Info. Display:** Enable or disable the informational OSD.
5) **Transparency:** Set the transparency level of the background of the OSD menu.
6) **Background:** Set the colour of the background of the OSD menu.

OTHER INTERFACE	
2ND LEVEL	**3RD LEVEL**
USB Ctr Mode	**MANUAL**
	Auto
USB Manual Sel	**Host 1**
	Host 2
	HDBaseT Out
	Type-C
	HDBaseT In
Trigger Number	1~8
Trigger Action	NONE
	Preset 1~6
	Out A IN 1~6
	Out B IN 1~6
	Relay 1
	Relay 2
IR Route	**RX - EXT**
	Tx – Ext
	Rx - Tx
Uart Route	**BYPASS**
	Route
Fan Control	Always ON
	REF TEMP
Relay Output 1	**OPEN**
	Close
	Toggle

OTHER INTERFACE	
2ND LEVEL	**3RD LEVEL**
Relay Output 2	**OPEN**
	Close
	Toggle

1) **USB Ctr Mode:** Enable or disable the automatic selection of the USB host port.
2) **USB Manual Sel:** Select which USB host port is active on the internal USB hub. Selecting "Host 1/2" will make the Type-B port on the rear of the unit active. "HDBaseT Out/In" will make the Type-B port on the connected HDBaseT unit active. Selecting "Type-C" will make the Type-C port on the rear of the unit active.
3) **Trigger Number & Action:** The configuration of each trigger's activated action can be adjusted to meet specific requirements. By default, triggers 1 through 8 are set up as follows: Trigger 1 activates Preset 1, Trigger 2 activates Preset 2, Trigger 3 activates Preset 3, Trigger 4 activates Preset 4, Trigger 5 activates Preset 5, Trigger 6 activates Preset 6, Trigger 7 activates Out A IN1, and Trigger 8 activates Out B IN2.
4) **IR Route:** Set which IR ports to route. Available choices are HDBT In-Local, HDBT Out-Local, or HDBT In-HDBT Out.
5) **Uart Route:** Set which RS-232 ports to route. Available choices are HDBT In to HDBT Out, or HDBT In/Out to Local.
6) **Fan Control:** Enable or disable the automatic operation of the fan control.
7) **Relay Output 1&2:** Manually open or close Relay 1 and Relay 2. Selecting "Open" closes the relay, selecting "Close" opens it, and selecting "Toggle" can use the trigger function to trigger the relay to toggle once.

ETHERNET CONTROL	
2ND LEVEL	**3RD LEVEL**
IP Mode	Static
	DHCP
Static IP Config	
IP Address	x.x.x.x (192.168.1.50)
Subnet Mask	x.x.x.x (255.255.255.0)
Gateway	x.x.x.x (192.168.1.254)
Link Status	
IP Mode	[Current IP Mode]
IP Address	[Current Network Info]
Subnet Mask	
Gateway	
MAC Addr	[Unit's MAC Address]

1) **IP Mode:** Set the unit's IP address mode to Static or DHCP.
2) **Static IP Config:** When the unit is in Static IP mode the IP address netmask and gateway addresses may be manually set here. Changes will occur immediately.

   Note: Only editable in Static IP mode.
3) **Link Status:** Displays the unit's current IP configuration and the unit's MAC address.

PRESET	
2ND LEVEL	**3RD LEVEL**
Save	**PRESET 1**
	Preset 2
	Preset 3
	Preset 4
	Preset 5
	Preset 6
Recall	**PRESET 1**
	Preset 2
	Preset 3
	Preset 4
	Preset 5
	Preset 6

1) **Save Preset 1~6:** Select a preset to store the unit's current video and audio configurations to the currently selected preset. Settings includes routing, auto switch, volume, mute, and audio delay.
2) **Recall Preset 1~6:** Select a preset to activate the currently selected preset

SETUP	
2ND LEVEL	**3RD LEVEL**
Auto Sync Off	**ALWAYS ON**
	5 sec.
	10 sec.
	15 sec.
	30 sec.
	1 min.
	1.5 min.
	2 min.
	2.5 min.
	3 min.
	5 min.
	10 min.
Firmware Update	**NO**
	Yes
User EDID Reset	**NO**
	Yes
Factory Reset	**NO**
	Yes

1) **Auto Sync Off:** Set the amount of time to continue outputting sync with a black screen if there are no live sources and no operations have been executed on the unit. Setting this to "Always On" forces the unit to always output sync.
2) **Firmware Update:** To update the firmware via USB, select "Yes" using the OSD and then connect directly to your PC/laptop using a standard USB-B cable to connect to USB port 2 on the unit. The upload will occur immediately.

Note: The update file must be a compatible and properly named (6x2Scaler_4043_USB_Vxxx.BIN) firmware file.

3) **User EDID Reset:** Select "Yes" to reset the unit's User EDIDs to their factory default states.

4) **Factory Reset:** Select "Yes" to reset the unit to its factory default state. After the reset is complete, the unit will reboot automatically.

INFORMATION	
2ND LEVEL	**3RD LEVEL**
IN 1	[Current Input Resolutions & HDCP]
IN 2	
IN 3	
IN 4	
IN 5	
IN 6	
OUT	[Current Output Resolution]
Video Mode	[Current Activated Preset]
Sink A Native	[Native resolutions as reported by EDID]
Sink B Native	
Firmware	[Current Firmware Versions]

1) **Information:** Shows the currently detected details for all inputs and both outputs as well as listing the status of a few system settings and firmware version.

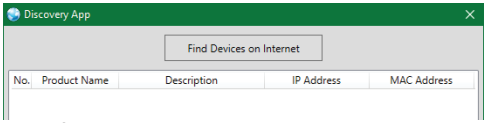
6.6 WebGUI Control

- **Device Discovery**

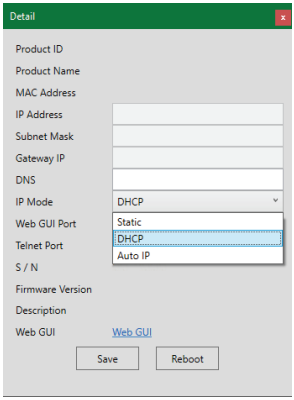
Please obtain the "Device Discovery" software from your authorized dealer and save it in a directory where you can easily find it.

Connect the unit and your PC/Laptop to the same active network and execute the "Device Discovery" software. Click on "Find Devices on Internet" and a list of devices connected to the local network will show up indicating their current IP address.

Note: This unit defaults to DHCP mode. The current IP address can be verified via the OSD menu or RS-232 if the Device Discovery software is not available.



By clicking on one of the listed devices you will be presented with the network details of that particular device.



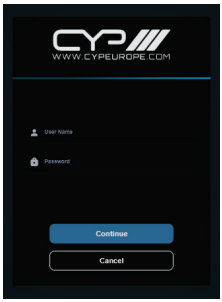
1) **IP Mode:** If you choose, you can alter the static IP network settings for the device, or switch the unit into DHCP mode to automatically obtain proper network settings from a local DHCP server. To switch to DHCP mode, please select DHCP from the IP mode drop-down, then click "Save" followed by "Reboot".
2) **WebGUI Hotkey:** Once you are satisfied with the network settings, you may use them to connect via Telnet or WebGUI. The network

information window provides a convenient link to launch the WebGUI directly.

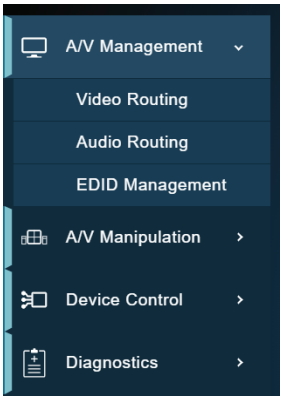
- **WebGUI Overview**

When connecting to the WebGUI's address in a web browser for the first time you will be presented with a mostly blank screen with a login icon ( ) in the upper right corner. Click on the login icon ( ), enter the appropriate user name/password, then click "Continue" to log in.

Note: The default user name and password is "admin".



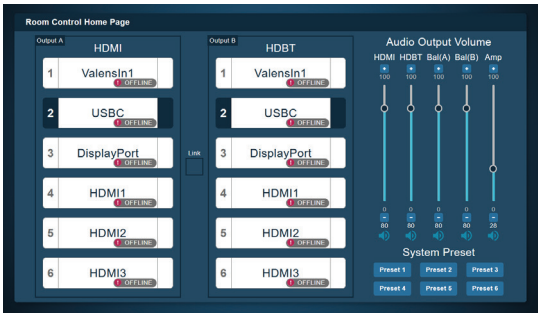
After logging in, the upper right corner will now display 5 navigation icons. Clicking on the "System Settings" icon ( ) will take you to the System Settings page for configuration options including IP configuration, device name, and firmware update functionality. Clicking on the "User Management" icon ( ) will take you to the User Management page, provides access to user management controls for the unit. Clicking on the "Language" icon ( ) can change the interface language to user's preference, current only support Traditional Chinses and English. If a keyboard is not available, an on-screen keyboard can be enabled or disabled by clicking on the "Virtual Keyboard" icon ( ). When enabled, the on screen keyboard will display whenever editing a text entry field. Clicking on the red "Logout" icon ( ) will log the currently connected user out of the WebGUI and return to home page. Clicking on the "Home" icon ( ) or the unit's logo at the top of the page will return to home page.



Click on the "Hamburger" icon ( ) in the upper right corner to open up the main page, the left side of the browser will display a compressed version of the above menu tabs where all primary functions of the unit are controllable via the built in WebGUI. The individual functions will be introduced in the following sections.

6.6.1 Home Page

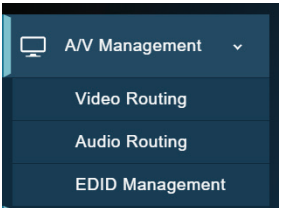
This page provides easy access to video routing, volume adjustment, and presets recall.



1) **Routing:** These buttons can select the input to route to outputs. Detail about each input's name and current connection status are also displayed here. If the "Link" button between the outputs is displaying "+", both outputs will change routing simultaneously when selecting any input.
2) **Audio Output Volume:** Use the slider to control over the level of output volume, or click on "Mute" icon (🔊) to mute or unmute the output audio.
3) **System Preset:** Click on a preset button to activate the currently selected preset.

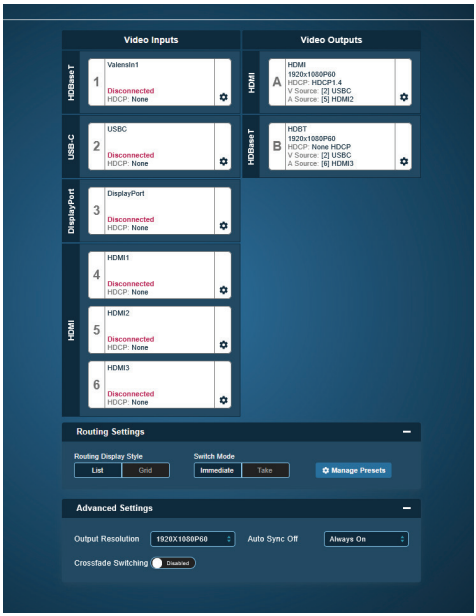
6.6.2 A/V Management Pages

The A/V Management pages are a collection of three configuration and information pages containing controls for configuring the unit's A/V settings and EDID management.

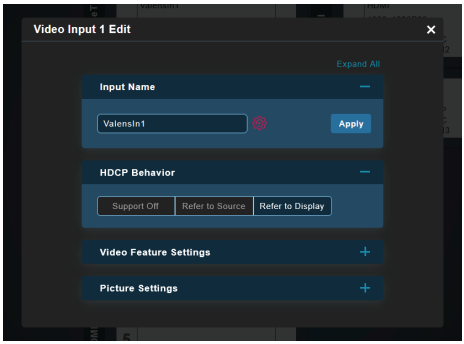


6.6.2.1 Video Routing Page

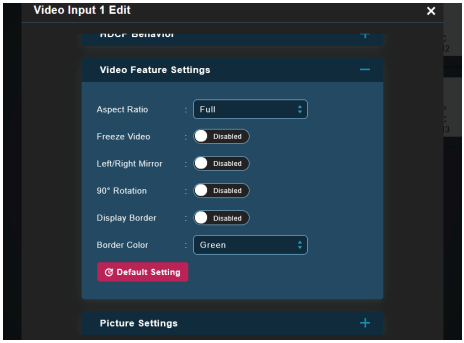
This page provides control over video routing, HDCP management, I/O renaming, output resolution, and auto switch settings. To begin assigning a new video route, select an input or output button and then click on the button of the preferred route. As each button is selected they will become highlighted. The new route will become active immediately when the unit is under take mode, and the routing information displayed on the buttons will change accordingly.



1) **Video Inputs:** These buttons can select the input to route to outputs. Detail about each input's name and current sync/HDCP settings are also displayed here. Clicking on the "Edit" icon (⚙) opens up the Video Input Edit window.
2) **Video Outputs:** Buttons for display each output's name and details about the currently routed inputs. Clicking on the "Edit" icon (⚙) opens up the Video Output Edit window.
3) **Video Input Edit:** Provides individual control over the name of each input, as well as the behavior of HDCP, video feature settings, and picture settings on that input.



- **Input Name:** To change the name of an Input, type the new name in the space provided, then click on the "Apply" button. To resume to the stored name before adjusting, click on the revert icon (⟲).
- **HDCP Behavior:** Selects the HDCP logic to use with this input. Changes made to this setting occur immediately.
  - **HDCP Support Off:** Completely disables support for HDCP on this input.
  - **Refer to Source:** Makes the input port support the same HDCP version as required by the connected source.
  - **Refer to Display:** Makes the input support the HDCP version of the currently routed display(s).

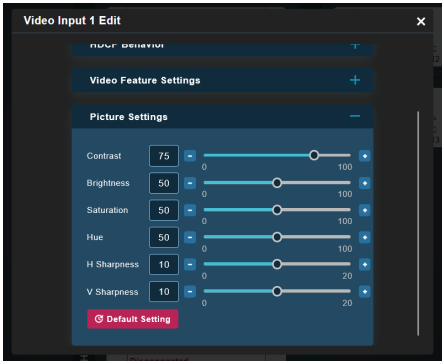


- **Video Feature Settings:** This section provides control over the aspect, freeze, rotation, and other settings of each input.
  - **Aspect Ratio:** Use the dropdown to select a fixed aspect ratio for the currently selected input. Available options are: Full, 16:9, 16:10, 4:3, and Best Fit. Selecting the "Full" aspect ratio will stretch the source to fill the output, regardless of original aspect.

Selecting "Best Fit" will automatically set the ratio based on the input's current source resolution.

- **Freeze Video:** Enable or disable freezing the video output.
- **Left/Right Mirror:** Turning this switch on will flip the currently selected input horizontally.
- **90° Rotation:** Enable or disable rotating the output image counterclockwise by 90 degrees.

  Note: When the output resolution is set to 4K, only input 1 can be rotated.
- **Display Border:** This switch enables or disables the colour border around the currently selected input.
- **Border Colour:** Use the dropdown to select the colour to use for the border of the currently selected input. Available colours are: Black, red, green, blue, yellow, magenta, cyan, white, dark red, dark green, dark blue, dark yellow, dark magenta, dark cyan, gray.
- **Default Setting:** Reset all video feature settings back to their factory defaults.



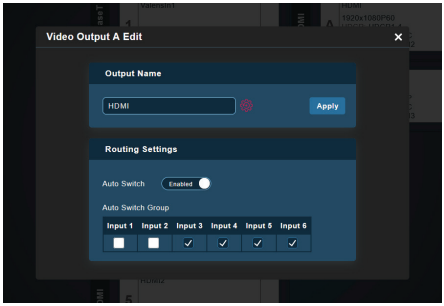
Picture Settings: This section provides controls over each input's contrast, brightness, saturation, hue, and sharpness levels.

- **Contrast:** This slider provides control over the overall contrast of the currently selected source video.
- **Brightness:** This slider provides control over the overall brightness of the currently selected source video.
- **Saturation:** This slider provides control over the overall saturation of the currently selected source video.
- **Hue:** This slider provides control over the hue shift of the

currently selected source video.

- **H/V Sharpness:** This slider provides control over the amount of sharpness processing to apply to the currently selected source video.
- **Default Settings:** Reset all picture settings back to their factory defaults.

4) **Output Edit:** Provides control over output naming and auto switch settings.



- **Output Name:** To change the name of an Output, type the new name in the space provided, then click on the "Apply" button. To resume to the stored name before adjusting, click on the revert icon (⚙).
- **Routing Settings:**
  - **Auto Switch:** Enable or disable automatically switching to any newly detected source for each output.
  - **Auto Switch Group:** Select the input sources that will be available for auto-switching on each output.

5) **Routing Settings:** Configure routing style, switch mode, and presets for recall and save.

- **Routing Display Style:** Select the preferred routing display style: Selecting "List" enables detailed information for inputs and outputs, while selecting "Grid" provides a checkerboard-style view with a faster routing check mark.
- **Switch mode:** Select the method for switching mode. Selecting "Immediate" to activate a new route immediately or "Take" to activate it after clicking on the "TAKE" button. The "CLEAR" button can withdraw the decision, allows switching between multiple

routes at once.

- **Manage Presets:** Click on the "Manage Presets" button to open the popup window.
  - **Recall Preset:** Click on a preset button to activate the currently selected preset.
  - **Store Preset:** Click on a preset button to store the unit's current video and audio configurations to the currently selected preset. Settings includes routing, auto switch, volume, mute, and audio delay.

6) Advanced Settings:

- **Output Resolution:** Select the preferred video output resolution.
- **Auto Sync Off:** Sets the amount of time to continue outputting sync with a black screen if there is no live source and no operations have been executed on the unit. Setting this to "Always On" forces the unit to always output sync.
- **Crossfade Switching:** Enable or disable the crossfading transition mode when switching sources.

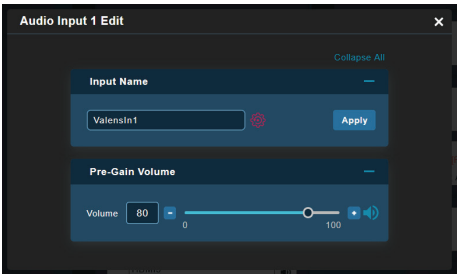
6.6.2.2 Audio Routing Page

This page provides control over how audio is routed within the unit as well as control over audio mixing, adjust individual output volume and delay, and set the gain level for input sources. To begin assigning a new video route, select an input or output button and then click on the button of the preferred route. As each button is selected they will become highlighted. The new route will become active immediately when the unit is under take mode, and the routing information displayed on the buttons will change accordingly.

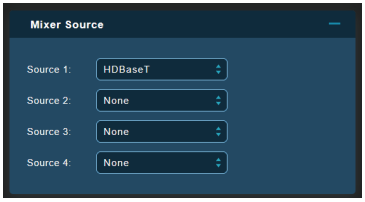
1) **Audio Inputs:** These buttons can select the input to route to outputs. Detail about each input's name and current audio format/volume settings are also displayed here. Clicking on the "Mute" icon (🔊) to mute or unmute the input. Clicking on the "Edit" icon (⚙) opens up the Audio Input Edit window.

2) **Audio Outputs:** Buttons for display each output's name and details about the currently routed inputs. Clicking on the "Mute" icon (🔊) to mute or unmute the output. Clicking on the "Edit" icon (⚙) opens up the Audio Output Edit window.

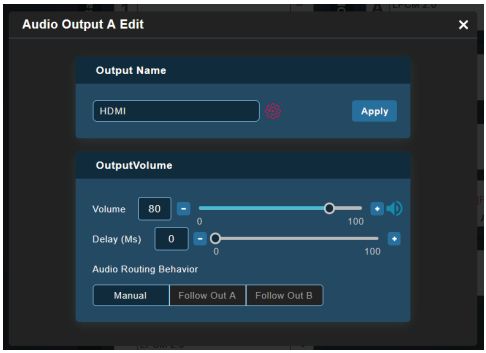
3) **Audio Input Edit:** Provides individual control over the name of each input, as well as control over audio mixing, and setting the gain level on that input.



- **Input Name:** To change the name of an Input, type the new name in the space provided, then click on the "Apply" button. To resume to the stored name before adjusting, click on the revert icon ( ).
- **Pre-Gain Volume:** Use the slider to control over the level of input volume, or click on "Mute" icon ( ) to mute or unmute the input audio.
- **Mixer Configuration:** Manage the audio sources used in each mixer. Up to four selected audio inputs can be combined into a single output mixer. Selecting "None" decreases mixing sources.



4) **Audio Output Edit:** Provides control over output naming and volume settings.



- **Output Name:** To change the name of an Output, type the new name in the space provided, then click on the "Apply" button. To resume to the stored name before adjusting, click on the revert icon (⚙).
- **Output Volume:**
  - **Volume:** Use the slider to control over the level of output volume, or click on "Mute" icon (🔊) to mute or unmute the output audio.
  - **Delay:** Use the slider to control over the amount of time (in milliseconds) to the delay the audio output if audio and video seem to be out of sync.

    Note: For LPCM 2.0 sources only.
  - **Audio Routing Behavior: Select** the audio source routing behavior of the currently selected output. "Manual" forces audio output to use a specific audio source. "Follow Out A/B" enables the audio output to match the current audio content of the output A/B.

5) **Routing Settings:** Configure routing style, switch mode, and presets for recall and save.
   - **Routing Display Style:** Select the preferred routing display style: Selecting "List" enables detailed information for inputs and outputs, while selecting "Grid" provides a checkerboard-style view with a faster routing check mark.
   - Switch mode: Select the method for switching mode. Selecting "Immediate" to activate a new route immediately or "Take" to activate it after clicking on the "TAKE" button. The "CLEAR" button can withdraw the decision, allows switching between multiple

routes at once.

- **Manage Presets:** Click on the "Manage Presets" button to open the popup window.
  - **Recall Preset:** Click on a preset button to activate the currently selected preset.
  - **Store Preset:** Click on a preset button to store the unit's current video and audio configurations to the currently selected preset. Settings includes routing, auto switch, volume, mute, and audio delay.

6.6.2.3 EDID Management Page

This unit provides the option of three standard EDIDs, two sink source EDIDs and six user uploaded EDIDs that can be assigned to all inputs at the same time, or to each input independently. The names of the user uploaded EDIDs can be changed if desired.

Note: In most cases, assigning a new EDID to an input will cause the affected input to briefly blink out while the source adapts to the new information.

1) **Input EDID Assignment:** Click on the checkbox to select one or more inputs, press "Select EDID to Assign" button to open the popup window. Select the new EDID source to use then click on the "Apply" button, the change will occur immediately across all selected Inputs.

This unit provides the following default EDIDs:

Unit's default EDIDs	
FHD/PCM/2CH	1920×1080p@60Hz (4.95Gbps) & 8-bit Colour, LPCM 2.0
4K UHD 2CH	3840×2160p@30Hz (10.2Gbps) & Deep Colour (8/10/12-bit), LPCM 2.0
4K UHD$^+$ 2CH	3840×2160p@60Hz (18Gbps) & Deep Colour (8/10/12-bit), LPCM 2.0

Note: In some rare cases it is possible for custom or external EDIDs to cause compatibility issues with certain sources. If this happens, it is recommended to switch to one of the 3 default EDIDs for maximum compatibility.

2) **Sink & User EDID Management:**

- **Internal EDID 1~3:**
  - **Download:** To save the EDID from a connected display to your local PC, click on the "Download" icon (). Depending on your browser settings you will either be asked where to save the downloaded file, or the file will be transferred to the default download location on your PC.
- **User EDID 1~6:**
  - **Upload:** To upload a User EDID, click on the "Upload" icon (). An EDID Upload window will appear, allowing you to locate and upload the preferred EDID file (*.bin format) from a local PC. Once the correct file has been selected, please click the "Upload" button in the window, and the file will be transferred to the unit
  - **Download:** To save the EDID from a connected display to your local PC, click on the "Download" icon (). Depending on your browser settings you will either be asked where to save the downloaded file, or the file will be transferred to the default download location on your PC.
  - **Edit Name:** Click the "Pencil" icon () to open a window that

allows changing the name of the User EDID. Click the "Apply" button within the window to confirm the change. To resume to the stored name before adjusting, click on the revert icon ( ).

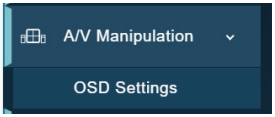
- **Reset:** Click the "revert" icon ( ) to reset the EDID to its factory default content.

■ **Sink A/B EDID:**

- **Download:** To save the EDID from a connected display to your local PC, click on the "Download" icon ( ). Depending on your browser settings you will either be asked where to save the downloaded file, or the file will be transferred to the default download location on your PC.

6.6.3 A/V Manipulation Pages

The A/V Manipulation page contains a configuration page for managing the unit's OSD settings.



6.6.3.1 OSD Settings Page

This page provides control over the behavior of the OSD menu and informational display.

1) **Menu Position:** Use the dropdown to set the position of the OSD menu on the output. Available choices are: Top Left, Top Right, Bottom Right, and Bottom Left.

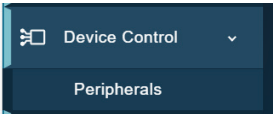
2) **Menu Background:** Set the colour of the background of the OSD

menu. Available choices are: Black, Gray, and Blue.

3) **Menu Transparency:** Set the transparency level of the background of the OSD menu with a range from 0 (opaque) to 10 (mostly transparent).
4) **Menu Timeout:** Set the length of time, in seconds, that the OSD menu will continue to be displayed if there is no user input, or disable the timeout completely.
5) **Information Display:** Enable or disable the informational OSD.
6) **Information Timeout:** Set the length of time, in seconds, that the informational OSD will be displayed after a signal or source change, or disable the timeout completely.

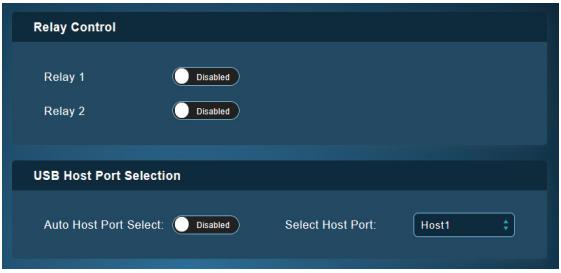
6.6.4 Device Control Pages

The Device Control page contains a configuration page for managing the unit's peripheral settings such as relay and USB.



6.6.4.1 Peripherals Page

This page provides configure the relay settings as well as control over the settings for the USB ports on the unit.



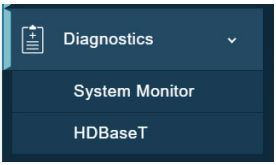
1) **Relay Control:** These settings control the unit's 2 relay ports.
   - **Relay 1 & 2:** Manually open or close Relay 1 and Relay 2. Selecting "Enabled" closes the relay, selecting "Disabled" opens it.

2) **USB Host Port Selection:** Your paragraph begins right here.

- **Auto Host Port Select:** Enable or disable automatic selection of the USB host port.
- **Select Host Port:** Select which USB host port is active on the internal USB hub. Selecting "Host 1 or 2" will make the Type-B port on the rear of the unit active. "Valens Tx/Rx" will make the Type-B port on the connected HDBaseT unit active. Selecting "Type-C" will make the Type-C port on the rear of the unit active.

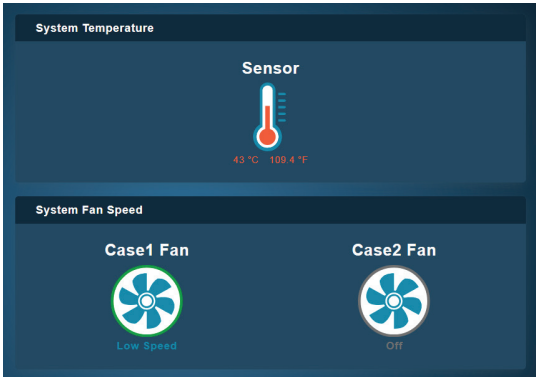
6.6.5 Diagnostics Pages

The Diagnostics pages are a collection of two system status pages containing system monitor for the temperature, fan speed, and HDBaesT connection status.



6.6.5.1 System Monitor Page

This page provides information concerning the temperature and fan speed (case 1 & 2) inside the unit.

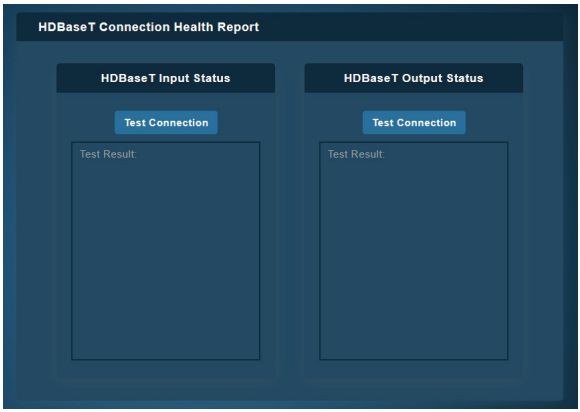


1) **System Temperature:** Display the current temperature inside the unit.

2) **System Fan Speed:** The automatic operation of the fan control can be set via the OSD (See Section 6.5). Fan case 1 & 2 are at the right side panel (from the front).

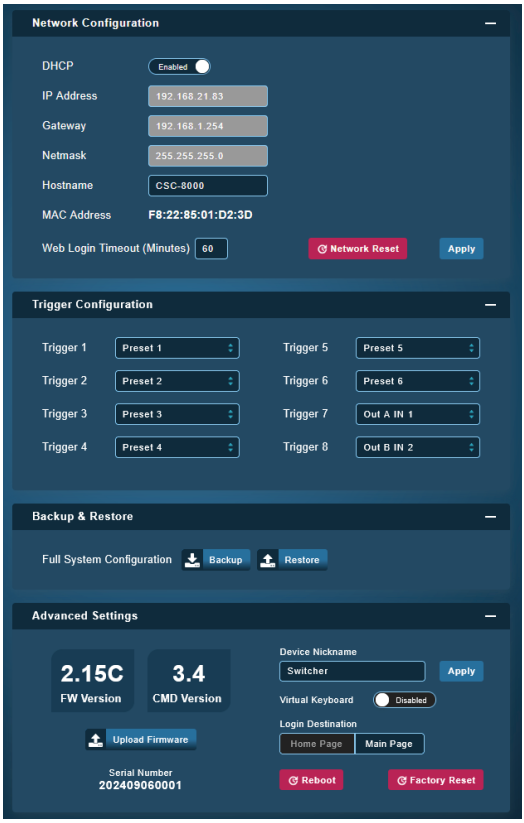
6.6.5.2 HDBaseT Page

This page provides information concerning the HDBaseT connection status, the PoH power availability, and the HDBaseT firmware versions used by the unit and any connected transmitter or receiver.



6.6.6 System Settings Page

Click on the "System Settings" page to make changes to various system settings. From this page you can change the WebGUI login timeout, device name, and IP configurations. It also allows the user to reset the unit to factory default and to update the firmware.



1) **Network Configuration:**

- **IP Configuration:** IP Mode may be switched between Static IP or DHCP. In Static IP Mode the IP, netmask and gateway addresses may be manually set. When in DHCP Mode, the unit will attempt to connect to a local DHCP server and obtain IP, netmask and gateway addresses automatically. Please press "Apply" after making any changes to the IP configuration or mode.

Note: If the IP address is changed then the IP address required for WebGUI/Telnet access will also change accordingly.

- **Web Login Timeout (Minutes):** Set the length of time to wait, in minutes, before logging out a user due to inactivity. Setting it to 0 means there is no timeout.
- **Network Reset:** Reset all Ethernet settings back to their factory defaults.

2) **Trigger Configuration:** Use each dropdown to set the unit's action, if any, when each trigger is activated.

3) **Backup & Restore:**

- **Backup:** The current system configuration, including routing and settings, may be saved as a JSON file to a PC. Click the "Backup" button to save the current system configuration to your local PC.
- **Restore:** Previously saved system configurations may be restored from a saved JSON file. Click the "Restore" button to open the file selecting window and then select the saved JSON file located on your local PC. After selecting the file, click the "Open" button to import the new configuration.

4) **Advanced Settings:**

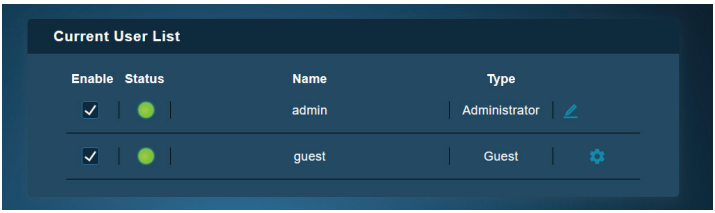
- **Firmware Version:** Displays the unit's firmware version.
- **CMD Version:** Displays the unit's command version.
- **Firmware Upgrade:** To update the unit's firmware, click the "Upload Firmware" button to open the file selection window and then select the firmware update file (*.bin format) located on your local PC. After the upgrade is complete, the unit will reboot automatically.
- **Serial Number:** Displays the unit's serial number.
- **Device Nickname:** To change the name of the unit, type the new name in the space provided, then click on the "Apply" button.
- **Virtual Keyboard:** If a keyboard is not available, an on-screen keyboard can be enabled or disabled here. This setting synchronize with the "Virtual Keyboard" icon (⌨) on the top right corner of the page.
- **Login Destination:** Define the landing page after user login successfully. Selecting "Home Page" will direct the user to the home page, while selecting "Main Page" will take them to Video Routing Page.

- **Reboot:** Click this button to reboot the unit.

Factory Reset: Press the "Factory Reset" button to reset the unit to its factory default state. After the reset is complete, the unit will reboot automatically.

6.6.7 User Management Page

This page provides access to user management controls for the unit, such as changing the admin login password, and allowing user to access before log in. All users will be listed. A checkmark will indicate accessibility, and a light icon if they are logged in. The admin and guest users are built into the system by default.



1) **Administrator Account: T**he username and password for the WebGUI can be changed by clicking on the pencil icon ( ) to open a window that allows changing the WebGUI login settings. After entering the old and new login information, press "Apply" to save the changes.

   Note: The default user name and password is "admin".

2) **Guest Account:** The guest user is a special system user with no password that can only access the unit's home page. Clicking on the edit icon ( ) provides control over function visibility on the home page when no user is logged in.

6.7 Telnet Control

Before attempting to use Telnet control, please ensure that both the unit and the PC are connected to the same active networks.

Start your preferred Telnet/Console client, or use the built in client provided by most modern computer operating systems. After starting the client, connect by using the current IP address of the unit and port 23 (if the communication port number used by the unit has not been changed previously). This will connect us to the unit we wish to control and commands may now be entered directly.

Note 1: If the IP address of the unit is changed then the IP address required for Telnet access will also change accordingly.

Note 2: This unit defaults to DHCP mode. The current IP address can be verified via the OSD menu or RS-232 if the Device Discovery software is not available. The default communication port is 23.

6.8 Serial and Telnet Commands

COMMAND Description and Parameters
help↵ Show all available commands.
help N1↵ Show details about the specified command. **N1** = {Command}
?↵ Show all available commands.
? N1↵ Show details about the specified command. **N1** = {Command}
get fw ver↵ Show the unit's current firmware version.
get command ver↵ Show the unit's command version.
get mac addr↵ Show the unit's MAC address.
get model name↵ Show the unit's model name.
get model type↵ Show the unit's model type.

COMMAND Description and Parameters
set factory default↵ Reset the unit to its factory defaults.
set factory ipconfig default↵ Reset the unit's network settings to the factory defaults.
set nickname N1↵ Set the name of the unit's nickname. Available values for **N1**: **N1** = {ASCII string} [Nickname]
get nickname↵ Show the name of the unit's nickname.
set uart 1 mode N1↵ Set the operational mode of the RS-232 ports. Available values for **N1**: 0 [Bypass] 1 [Route]
get uart 1 mode↵ Show the current operational mode of the RS-232 ports.
get power↵ Show the unit's current power state.
set system reboot↵ Reboot the unit.
set system usb fw update↵ Trigger the unit's firmware update state and load the new firmware file via USB.

COMMAND Description and Parameters
set ip mode N1↵ Set the unit's IP address assignment mode. Available values for **N1**: STATIC [Static IP mode] DHCP [DHCP mode]
get ip mode↵ Show the current IP address assignment mode.
get ipconfig↵ Show the unit's current IP configuration information.
get ipaddr↵ Show the unit's current IP address.
get netmask↵ Show the unit's current netmask.
get gateway↵ Show the unit's current gateway address.
set static ipaddr N1↵ Set the unit's static IP address. **N1** = X.X.X.X [X = 0~255, IP address]
get static ipaddr↵ Show the unit's current static IP address.
set static netmask N1↵ Set the unit's static IP address. **N1** = X.X.X.X [X = 0~255, Netmask]

COMMAND Description and Parameters
get static netmask↵ Show the unit's current static netmask.
set static gateway N1↵ Set the unit's static IP address. **N1** = X.X.X.X [X = 0~255, Gateway address]
get static gateway↵ Show the unit's current static gateway address.
set webgui username N1↵ Set the WebGUI login username. **N1** = { ASCII string } [Username]
get webgui username↵ Show the current WebGUI login username.
set webgui password N1↵ Set the WebGUI login password. **N1** = {ASCII string} [Password]
get webgui password↵ Show the current WebGUI login password.
set webgui login timeout N1↵ Set the WebGUI inactivity timeout value. Available values for **N1**: 0 [Disabled] 1~120 [Timeout in minutes]
get webgui login timeout↵ Show the current WebGUI inactivity timeout value.

COMMAND Description and Parameters
set webgui anon homepage N1↵ Set the anonymous (no login required) access to the WebGUI's homepage. Available values for **N1**: ON [Enabled] OFF [Disabled]
get webgui anon homepage↵ Show the current anonymous access allowance state for the Web-GUI's homepage.
set webgui login homepage N1↵ Enable or disable showing the WebGUI homepage immediately after loging into the unit as a valid user. Available values for **N1**: ON [Enabled] OFF [Disabled]
get webgui login homepage↵ Show the current WebGUI homepage login destination setting.
set fan control mode N1↵ Set the fan control mode. Available values for **N1**: 0 [Always on] 1 [Refer to temperature]
get fan control mode↵ Show the current fan control mode.

COMMAND Description and Parameters
get fan 1 speed↵ Show the current rotation speed of the specified fan. Possible response values: 0 [Off] 1~2 [Fan Speed]
get device temperature↵ Show the unit's current temperature.
set ir 1 mode N2↵ Set the routing operational mode of the IR ports. Available values for **N2**: 0 [RX to EXT] 1 [TX to EXT] 2 [RX to TX]
get ir 1 mode↵ Show the current routing operational mode of the IR ports.
set in N1 name N2↵ Set the name of the specified input. Available values for **N1**: 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3] **N2** = {ASCII string} [Input name]

COMMAND Description and Parameters
get in N1 name↵ Show the current name of the specified input. Available values for **N1**: 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3]
set out N1 name N2↵ Set the name of the specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output] **N2** = {ASCII string} [Output name]
get out N1 name↵ Show the name of the specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output]
get in name list↵ List the names of all inputs on the unit.
get out name list↵ List the names of all outputs on the unit.

COMMAND	
Description and Parameters	
set out N1 route N2↵ Route the specified input to the specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output] Available values for **N2**: 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3]	
get out A route↵ Show which input is currently routed to the specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output]	
set out route N1N2, N1N2…↵ Set multiple input/output routes simultaneously. Each N1/N2 pairing defines a single route. Available values for **N1**: A [HDMI output] B [HDBaseT output] Available values for **N2**: 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3]	

COMMAND Description and Parameters
get out route N1,N1…↵ Show the current routing assignments for all specified outputs. Available values for **N1**: A [HDMI output] B [HDBaseT output]
set current route to preset N1↵ Save all current routing assignments to the specified preset. **N1** = 1~6 [Preset number]
set route preset N1↵ Activate the routing assignments saved in the specified preset. **N1** = 1~6 [Preset number]
set out N1 auto mode N2↵ Set the auto switching behavior of the specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output] Available values for **N2**: 0 [Off] 1 [Auto switch]
get out N1 auto mode↵ Show the current auto switching mode of specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output]

COMMAND	
	Description and Parameters
set out N1 auto mode port N2 N3↵	
Set the input port to include in the specified output's auto routing behavior.	
Available values for **N1**:	
A	[HDMI output]
B	[HDBaseT output]
Available values for **N2**:	
1	[HDBaseT input]
2	[USB-C input]
3	[DisplayPort input]
4	[HDMI input 1]
5	[HDMI input 2]
6	[HDMI input 3]
Available values for **N3**:	
ON	[Enabled]
OFF	[Disabled]
get out N1 auto mode port N2↵	
Show which port are included in the specified output's auto routing behavior.	
Available values for **N1**:	
A	[HDMI output]
B	[HDBaseT output]
Available values for **N2**:	
1	[HDBaseT input]
2	[USB-C input]
3	[DisplayPort input]
4	[HDMI input 1]
5	[HDMI input 2]
6	[HDMI input 3]

COMMAND Description and Parameters
get in N1 sync status↵ Show the current sync state of the specified input. Available values for **N1**: 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3] Possible response values: 0 [No sync detected] 1 [Sync active]
get out N1 sync status↵ Show the current sync state of the specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output] Possible response values: 0 [No sync detected] 1 [Sync active]
get in N1 timing↵ Show the index number of the current resolution detected on the specified input. Available values for **N1**: 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3]

COMMAND Description and Parameters
get in N1 timing string↵ Show the index number and description of the current resolution detected on the specified input. Available values for **N1**: 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3]
get in N1 type↵ Show the port type of the specified input. 1 [HDBaseT input] 2 [USB-C input] 3 [DisplayPort input] 4 [HDMI input 1] 5 [HDMI input 2] 6 [HDMI input 3]
get out N1 type↵ Show the port type of the specified output. Available values for **N1**: A [HDMI output] B [HDBaseT output]
get in type list↵ List the port type of all inputs on the unit.
get out type list↵ List the port type of all outputs on the unit.

COMMAND Description and Parameters
get in port number↵ Show the total number of inputs on the unit.
get out port number↵ Show the total number of outputs on the unit.
set out A timing N1↵ Set the output resolution to use for all outputs. Available values for **N1**: 0 [640×480p59] 1 [480p60] 2 [576p50] 3 [800×600p60] 4 [848×480p60] 5 [1024×768p60] 6 [1280×720p50] 7 [1280×720p60] 8 [1280×768p60] 9 [1280×800p60] 10 [1280×960p60] 11 [1280×1024p60] 12 [1360×768p60] 13 [1366×768p60] 14 [1400×1050p60] 15 [1440×900p60] 16 [1600×900p60rb] 17 [1600×1200p60] 18 [1680×1050p60] 19 [1920×1080p24] 20 [1920×1080p25] 21 [1920×1080p30] 22 [1920×1080p50] 23 [1920×1080p60] 24 [1920×1200p60rb]

COMMAND	
Description and Parameters	
25	[2048×1152p60rb]
26	[3840×2160p24]
27	[3840×2160p25]
28	[3840×2160p30]
29	[4K p24 DCI]
30	[4K p25 DCI]
31	[4K p30 DCI]
32	[4K p50 DCI]
33	[4K p59 DCI]
34	[4K p60 DCI]
35	[3840×2160p50]
36	[3840×2160p59]
37	[3840×2160p60]
38	[3840×2400p60rb]
39	[Native OUT A]
40	[Native OUT B]
get out A timing↵	
Show the index number of the current resolution used for all outputs.	
get out A timing string↵	
Show the description string of the current resolution used for all outputs.	

COMMAND	
	Description and Parameters
set window N1 border color N2↵	
Set the border colour of the specified input.	
N1 = 1~6	[Input number]
Available values for **N2**:	
0	[Black]
1	[Red]
2	[Green]
3	[Blue]
4	[Yellow]
5	[Magenta]
6	[Cyan]
7	[White]
8	[Dark Red]
9	[Dark Green]
10	[Dark Blue]
11	[Dark Yellow]
12	[Dark **Magenta**]
13	[Dark Cyan]
14	[Gray]
get window N1 border color↵	
Show the current border colour of the specified input.	
N1 = 1~6	[Input number]

COMMAND Description and Parameters
set out A auto sync off N1↵ Enable or disable the Auto Sync Off function and set the timeout length. Available values for **N1**: 0 [Always on] 1 [5 seconds] 2 [10 seconds] 3 [15 seconds] 4 [30 seconds] 5 [1 minutes] 6 [1.5 minutes] 7 [2 minutes] 8 [2.5 minutes] 9 [3 minutes] 10 [5 minutes] 11 [10 minutes]
get out A auto sync off↵ Show the current Auto Sync Off settings.
set window N1 aspect ratio N2↵ Set the aspect of the specified input. **N1** = 1~6 [Input number] Available values for **N2**: 0 [Full] 1 [16:9] 2 [16:10] 3 [4:3] 4 [Best Fit]

COMMAND
Description and Parameters
get window N1 aspect ratio↵ Show the current aspect of the specified input. **N1** = 1~6 [Input number]
set window N1 mirror N2↵ Set the mirror mode of the specified input. **N1** = 1~6 [Input number] Available values for **N2**: ON [Enabled] OFF [Disabled]
get window N1 mirror↵ Show the current mirror mode of the specified input. **N1** = 1~6 [Input number]
set window N1 border mode N2↵ Set the border mode of the specified input. **N1** = 1~6 [Input number] Available values for N2: ON [Enabled] OFF [Disabled]
get window N1 border mode↵ Show the current border mode of the specified input. **N1** = 1~6 [Input number]

COMMAND Description and Parameters
set window N1 rotation mode N2↵ Enable or disable 90 degree rotation for the specified input. **N1** = 1~6 [Input port] Available values for N2: ON [Rotation enabled] OFF [Rotation disabled]
get window N1 rotation mode↵ Show the current rotation state of the specified input. **N1** = 1~6 [Input port]
set window N1 default↵ Reset the settings of the specified input **N1** = 1~6 [Input number]
set transition mode N1↵ Set the transition mode to use when switching sources. Available values for **N1**: 0 [Cut transition] 1 [Crossfade transition]
get transition mode↵ Show the current transition mode used when switching sources.
set in N1 contrast N2↵ Set the contrast level of the specified input. **N1** = 1~6 [Input port] **N2** = 0~100 [Contrast level]

COMMAND	
Description and Parameters	
get in N1 contrast↵ Show the current contrast level of the specified input. **N1** = 1~6	[Input port]
set in N1 brightness N2↵ Set the brightness level of the specified input. **N1** = 1~6 **N2** = 0~100	[Input port] [Brightness level]
get in N1 brightness↵ Show the current brightness level of the specified input. **N1** = 1~6	[Input port]
set in N1 saturation N2↵ Set the saturation level of the specified input. **N1** = 1~6 **N2** = 0~100	[Input port] [Saturation level]
get in N1 saturation↵ Show the current saturation level of the specified input. **N1** = 1~6	[Input port]
set in N1 hue N2↵ Set the hue value of the specified input. **N1** = 1~6 **N2** = 0~100	[Input port] [Hue value]

COMMAND	
Description and Parameters	
get in N1 hue↵	
Show the current hue value of the specified input.	
N1 = 1~6	[Input port]
set in N1 h sharpness N2↵	
Set the horizontal sharpness level of the specified input.	
N1 = 1~6	[Input port]
N2 = 0~20	[Horizontal sharpness level]
get in N1 h sharpness↵	
Show the current horizontal sharpness level of the specified input.	
N1 = 1~6	[Input port]
set in N1 v sharpness N2↵	
Set the vertical sharpness level of the specified input.	
N1 = 1~6	[Input port]
N2 = 0~20	[Vertical sharpness level]
get in N1 v sharpness↵	
Show the current vertical sharpness level of the specified input.	
N1 = 1~6	[Input port]
set in N1 picture default↵	
Restore the picture settings to their factory default settings.	
N1 = 1~6	[Input port]

COMMAND Description and Parameters
set in N1 freeze N2↵ Enable or disable freezing the video input. **N1** = 1~6 [Input port] Available values for **N2**: ON [Video input frozen] OFF [Video input normal]
get in N1 freeze↵ Show the current video input freeze state. **N1** = 1~6 [Input port]
set out A osd timeout N1↵ Set the OSD menu's timeout value (in seconds). Available values for **N1**: 0 [Disabled] 5~60 [Timeout in seconds]
get out A osd timeout↵ Show the current OSD menu's timeout value.
set out A osd info display N1↵ Enable or disable the info OSD. Available values for **N1**: ON [Enabled] OFF [Disabled]
get out A osd info display↵ Show the current info OSD state.

COMMAND Description and Parameters
set out A osd info timeout N1↵ Set the OSD info's timeout value (in seconds). Available values for **N1**: 0 [Disabled] 5~60 [Timeout in seconds]
get out A osd info timeout↵ Show the current OSD info's timeout value.
set out A osd transparency level N1↵ Set the transparency level of the OSD. **N1** = 0~10 [Transparency level]
get out A osd transparency level↵ Show the OSD's current transparency level.
get out A osd transparency level↵ Show the OSD's current transparency level.
get out A osd transparency level↵ Show the OSD's current transparency level.
get out A osd transparency level↵ Show the OSD's current transparency level.
get out A osd transparency level↵ Show the OSD's current transparency level.

COMMAND Description and Parameters
set out A osd banner location N1↵ Set the OSD menu location. Available values for **N1**: 0 [Top Left] 1 [Top Right] 2 [Bottom Right] 3 [Bottom Left]
get out A osd banner location↵ Show the current OSD menu location.
set out A osd background color N1↵ Set the colour of the background of the OSD banner. Available values for **N1**: BLACK [Black background] GRAY [Gray background] BLUE [Blue background]
get out A osd background color↵ Show the current colour of the background of the OSD banner on the specified output.
get out osd background color list↵ List all available background colours for the OSD banner.

COMMAND	
Description and Parameters	
set audio out N1 route N2↵	
Route the specified audio source to the specified audio output.	
Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]
Available values for **N2**:	
0	[Follow output A]
1	[Follow output B]
2	[HDBaseT audio input]
3	[USB-C audio input]
4	[DisplayPort audio input]
5	[HDMI audio input 1]
6	[HDMI audio input 2]
7	[HDMI audio input 3]
8	[Microphone audio input 1]
9	[Microphone audio input 2]
10	[Standard analog audio input]
11	[Analog audio input]
12	[Mixer 1]
13	[Mixer 2]
14	[Mixer 3]
15	[Mixer 4]
16	[Mixer 5]

COMMAND Description and Parameters
get audio out N1 route↵ Show the current audio source routed to the specified audio output. Available values for **N1**: A [HDMI audio output] B [HDBaseT audio output] C [Standard analog audio output 1] D [Standard analog audio output 2] E [Amplified analog audio output]
set audio out N1 mute N2↵ Enable or disable muting the specified audio output. Available values for **N1**: A [HDMI audio output] B [HDBaseT audio output] C [Standard analog audio output 1] D [Standard analog audio output 2] E [Amplified analog audio output] Available values for **N2**: ON [Mute] OFF [Unmute]
get audio out N1 mute↵ Show the current mute state of the specified audio output. Available values for **N1**: A [HDMI audio output] B [HDBaseT audio output] C [Standard analog audio output 1] D [Standard analog audio output 2] E [Amplified analog audio output]

COMMAND	
Description and Parameters	
set audio out N1 volume N2↵ Enable or disable muting the specified audio output. Available values for **N1**: A [HDMI audio output] B [HDBaseT audio output] C [Standard analog audio output 1] D [Standard analog audio output 2] E [Amplified analog audio output] **N2** = 0~100 [Volume level]	
get audio out N1 volume↵ Show the current mute state of the specified audio output. Available values for **N1**: A [HDMI audio output] B [HDBaseT audio output] C [Standard analog audio output 1] D [Standard analog audio output 2] E [Amplified analog audio output]	

COMMAND	
Description and Parameters	
set audio in N1 name N2↵	
Set the name of the specified audio input.	
Available values for **N1**:	
1	[HDBaseT audio input]
2	[USB-C audio input]
3	[DisplayPort audio input]
4	[HDMI audio input 1]
5	[HDMI audio input 2]
6	[HDMI audio input 3]
7	[Microphone audio input 1]
8	[Microphone audio input 2]
9	[Standard analog audio input]
10	[Analog audio input]
11	[Mixer 1]
12	[Mixer 2]
13	[Mixer 3]
14	[Mixer 4]
15	[Mixer 5]
N2 = {ASCII string}	[Audio output name]

COMMAND	
Description and Parameters	
get audio in N1 name↵ Show the name of the specified audio input. Available values for **N1**:	
1	[HDBaseT audio input]
2	[USB-C audio input]
3	[DisplayPort audio input]
4	[HDMI audio input 1]
5	[HDMI audio input 2]
6	[HDMI audio input 3]
7	[Microphone audio input 1]
8	[Microphone audio input 2]
9	[Standard analog audio input]
10	[Analog audio input]
11	[Mixer 1]
12	[Mixer 2]
13	[Mixer 3]
14	[Mixer 4]
15	[Mixer 5]
set audio out N1 name N2↵ Set the name of the specified audio output. Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]
N2 = {ASCII string}	[Audio output name]

COMMAND	
Description and Parameters	
get audio out N1 name↵ Show the name of the specified audio output. Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]
set audio out N1 delay N2↵ Set the audio delay value of the specified audio output. Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]
N2 = 0~100	[Millisecond]
get audio out N1 delay↵ Show the current audio delay value of the specified audio output. Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]

COMMAND	
Description and Parameters	
set audio in N1 pre-gain N2↵ Set the pre-gain volume level for the specified audio input. Available values for **N1**: 1 [HDBaseT audio input] 2 [USB-C audio input] 3 [DisplayPort audio input] 4 [HDMI audio input 1] 5 [HDMI audio input 2] 6 [HDMI audio input 3] 7 [Microphone audio input 1] 8 [Microphone audio input 2] 9 [Standard analog audio input] 10 [Analog audio input] **N2** = 0~100 [Pre-gain Volume level]	
get audio in N1 pre-gain↵ Show the current pre-gain volume level for the specified audio input. Available values for **N1**: 1 [HDBaseT audio input] 2 [USB-C audio input] 3 [DisplayPort audio input] 4 [HDMI audio input 1] 5 [HDMI audio input 2] 6 [HDMI audio input 3] 7 [Microphone audio input 1] 8 [Microphone audio input 2] 9 [Standard analog audio input] 10 [Analog audio input]	

COMMAND	
Description and Parameters	
set audio in N1 mute N2↵ Enable or disable muting the specified audio input. Available values for **N1**: 1 [HDBaseT audio input] 2 [USB-C audio input] 3 [DisplayPort audio input] 4 [HDMI audio input 1] 5 [HDMI audio input 2] 6 [HDMI audio input 3] 7 [Microphone audio input 1] 8 [Microphone audio input 2] 9 [Standard analog audio input] 10 [Analog audio input] Available values for **N2**: ON [Mute] OFF [Unmute]	
get audio in N1 mute↵ Show the current mute state of the specified audio input. Available values for **N1**: 1 [HDBaseT audio input] 2 [USB-C audio input] 3 [DisplayPort audio input] 4 [HDMI audio input 1] 5 [HDMI audio input 2] 6 [HDMI audio input 3] 7 [Microphone audio input 1] 8 [Microphone audio input 2] 9 [Standard analog audio input] 10 [Analog audio input]	
get audio in type list↵ List all available audio input sources.	

COMMAND
Description and Parameters
get audio out type list↵ List all available audio output sources.
get audio in N1 power mode↵ Show the current phantom power voltage level for the specified microphone audio input. Available values for **N1**: 7 [Microphone audio input 1] 8 [Microphone audio input 2] Possible response values: 1 [48V] 2 [5V] 3 [Off]

COMMAND	
	Description and Parameters
set audio mixer out N1 source N2 N3↵	
Set the input source to route through the audio mixer to the specified output.	
Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]
N2 = 1~4	[Mixer Source 1~4]
Available values for **N3**:	
0	[None]
1	[HDBaseT audio input]
2	[USB-C audio input]
3	[DisplayPort audio input]
4	[HDMI audio input 1]
5	[HDMI audio input 2]
6	[HDMI audio input 3]
7	[Microphone audio input 1]
8	[Microphone audio input 2]
9	[Standard analog audio input]
10	[Analog audio input]
get audio mixer out N1 source N2↵	
Show the input source currently routed through the audio mixer to the specified output.	
Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]
N2 = 1~4	[Mixer Source 1~4]

COMMAND	
Description and Parameters	
set audio volume knob lock N1↵ Set the lock state for the front panel volume knob. Available values for **N1**:	
ON	[Enabled]
OFF	[Disabled]
get audio volume knob lock↵ Show the current lock state of the front panel volume knob.	
set audio out A talkover N1↵ Set the talkover function's state for all audio outputs. Available values for **N1**:	
ON	[Enabled]
OFF	[Disabled]
get audio out A talkover↵ Show the current state of the talkover function on all audio outputs.	
set audio out N1 default↵ Restore the audio settings to their factory default settings. Available values for **N1**:	
A	[HDMI audio output]
B	[HDBaseT audio output]
C	[Standard analog audio output 1]
D	[Standard analog audio output 2]
E	[Amplified analog audio output]

COMMAND	
Description and Parameters	
set in N1 edid N2↵	
Set the EDID to use on the specified input.	
N1 = 1~6	[Input port]
Available values for **N2**:	
1	[FHD/PCM/2CH]
2	[UHD/PCM/2CH]
3	[UHD+/PCM/2CH]
4	[Output A's EDID]
5	[Output B's EDID]
6	[User EDID 1]
7	[User EDID 2]
8	[User EDID 3]
9	[User EDID 4]
10	[User EDID 5]
11	[User EDID 6]
get in N1 edid↵	
Show the EDID currently being used on the specified input.	
N1 = 1~6	[Input port]

COMMAND	
Description and Parameters	
set all in edid N1↵	
Set the EDID to use for all inputs.	
Available values for **N1**:	
1	[FHD/PCM/2CH]
2	[UHD/PCM/2CH]
3	[UHD+/PCM/2CH]
4	[Output A's EDID]
5	[Output B's EDID]
6	[User EDID 1]
7	[User EDID 2]
8	[User EDID 3]
9	[User EDID 4]
10	[User EDID 5]
11	[User EDID 6]
get all in edid↵	
Show the current EDID used for all inputs.	
get in edid list↵	
List all available EDID selections.	
set edid N1 name N2↵	
Set the name for the specified EDID. (Only User EDIDs may be re-named)	
N1 = 1~6	[User EDID number]
N2 = {ASCII string}	[User EDID name]
get edid N1 name↵	
Show the name for the specified EDID.	
N1 = 1~6	[User EDID number]

COMMAND	
Description and Parameters	
set user N1 edid data N2↵	
Upload a new EDID (in hex format) for use as the specified User EDID.	
N1 = 1~6	[User EDID number]
N2 = {EDID data}	[Comma delimited hex pairs]
get user N1 edid data↵	
Show the current contents of the specified User EDID as hex data.	
N1 = 1~6	[User EDID number]
set factory user N1 edid default↵	
Reset the unit's user edid to the factory defaults.	
N1 = 1~6	[User EDID number]
get sink N1 edid data↵	
Show the EDID from the display connected to the specified output as hex data.	
Available values for **N1**:	
A	[HDMI output]
B	[HDBaseT output]
get in N1 edid data↵	
Show the EDID currently used by the specified input as hex data.	
Available values for **N1**:	
1	[HDBaseT input]
2	[USB-C input]
3	[DisplayPort input]
4	[HDMI input 1]
5	[HDMI input 2]
6	[HDMI input 3]

COMMAND	
Description and Parameters	
get internal N1 edid data↵	
Show the specified Internal EDID as hex data.	
N1 = 1~3	[Internal EDID number]
get all in edid list↵	
List the EDIDs assigned to all inputs.	
set in N1 hdcp mode N2↵	
Set the HDCP behavior of the specified input.	
N1 = 1~6	[Input port]
Available values for **N2**:	
0	[HDCP support disabled]
1	[Refer to source]
2	[Refer to display]
get in N1 hdcp mode↵	
Show the current HDCP behavior used by the specified input.	
N1 = 1~6	[Input port]
get in N1 hdcp status↵	
Show the current HDCP status of the specified input.	
N1 = 1~6	[Input port]
get out N1 hdcp status↵	
Show the current HDCP status of the specified output.	
N1 = A~B	[Output port]
get out N1 hdcp ability↵	
Show the HDCP compliance level of the display device connected to the specified output.	
N1 = A~B	[Output port]

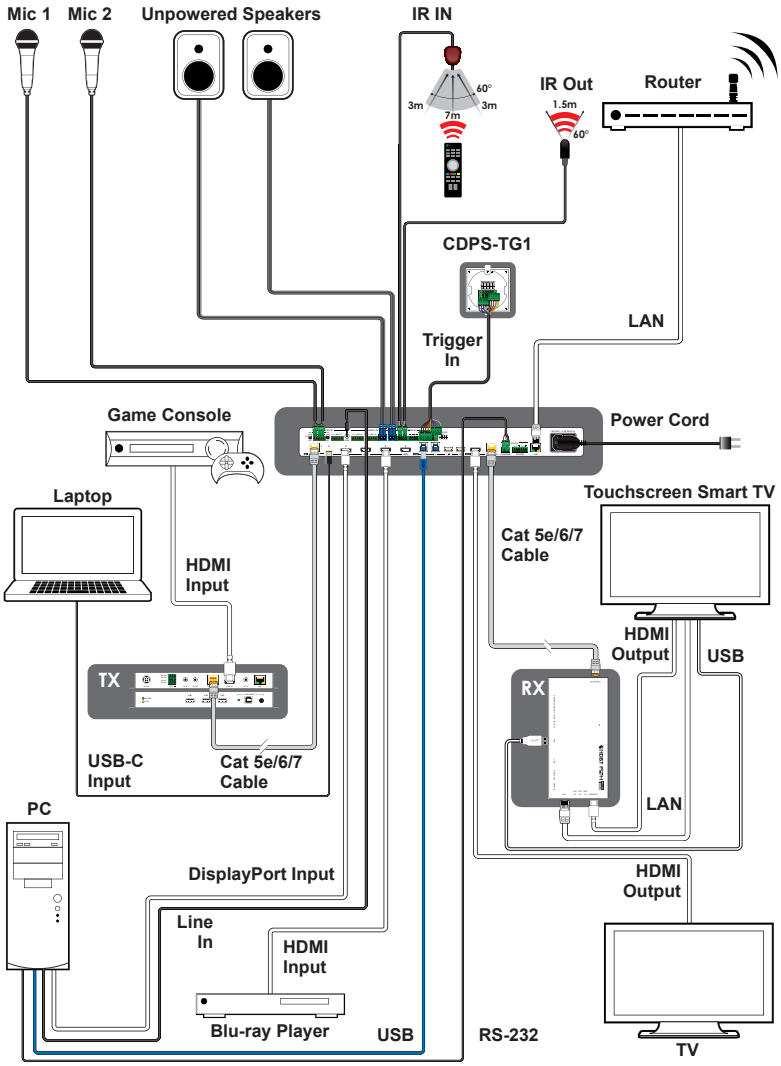
COMMAND Description and Parameters
get in N1 hdcp ability↵ Show the HDCP compliance level of the source connected to the specified input. **N1** = 1~6 [Input port]
set relay N1 N2↵ Open or close or toggle the specified relay. **N1** = 1~2 [Relay port] Available values for **N2**: ON [Relay close] OFF [Relay open] TOGGLE [Relay toggle]
get relay N1↵ Show the current state of the specified relay. **N1** = 1~2 [Relay port]
get trigger in N1 state↵ Show the current event state of the specified trigger input. **N1** = 1~8 [Trigger port] Possible response values: 0 [Inactive] 1 [Active]

COMMAND Description and Parameters
set keypad trigger in N1 function N2↵ Set the function to activate when the specified keypad button is pressed. **N1** = 1~8 [Trigger port] Available values for **N2**: 0 [No function] 1~6 [Preset 1~6] 7~12 [Route output A to input 1~6] 13~18 [Route output B to input 1~6] 19 [Relay 1 on] 20 [Relay 2 on]
get keypad trigger in N1 function↵ Show the current function assigned to the specified keypad button. **N1** = 1~8 [Trigger port]
get keypad trigger in index list↵ List all unit functions that can be assigned to keypad triggers.
get keypad trigger in function list↵ List the currently assigned functions for all keypad buttons.
set keypad trigger all default↵ Set the assigned functions for all keypad buttons to their default values.
get hdbt in 1 cable test↵ Show the cable test result for the specified HDBaseT input.
get hdbt out A cable test↵ Show the cable test result for the specified HDBaseT output.

COMMAND Description and Parameters
set usb host auto mode N1↵ Set the automatic USB switching mode of the unit. Available values for **N1**: ON [USB auto switch] OFF [Off]
get usb host auto mode↵ Show the current automatic USB switching mode of the unit.
set usb host 1 route N1↵ Route the specified USB host to the specified USB devices. Available values for **N1**: 0 [Local host 1] 1 [Local host 2] 2 [HDBaseT output] 3 [USB-C input] 4 [HDBaseT input]
get usb host 1 route↵ Show the USB host currently routed through the unit to the specified USB devices.

Note: Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Bandwidth	18Gbps
DisplayPort Bandwidth	21.6Gbps
USB-C Bandwidth	21.6Gbps
HDBaseT Bandwidth	10.2Gbps
Input Ports	3×HDMI (Type-A) 1×DisplayPort 1×USB (Type-C) 1×HDBaseT (RJ-45) 1×Stereo Audio (3.5mm) 1×Stereo Audio (5-pin Terminal Block) 2×Microphone (5-pin Terminal Block)
Output Ports	1×HDBaseT (RJ-45) 1×HDMI (Type-A) 1×Stereo Audio Class D amplifier (2x2-pin Terminal Block) 2×Stereo Audio (5-pin Terminal Block)
Pass-through Ports	1×IR Extender & Blaster (4-pin Terminal Block) 1×RS-232 (6-pin Terminal Block) 2×Power Relay (2-pin Terminal Block) 2×USB (Type-A) 1×USB (Type-B)
Pass-through/ Control Port	1×LAN (RJ-45)
Control Ports	1×RS-232 (3-pin Terminal Block) 1×Trigger (10-pin Terminal Block)
Pass-through/ Service Port	1×USB (Type-B)
IR Frequency	30 ~ 50kHz (30 ~ 60kHz under ideal conditions)

Baud Rate	19200
Power Supply	100~240V AC (US/EU standards, CE/FCC/UL certified)
ESD Protection (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)
Dimensions (W×H×D)	438mm×269mm×44mm [Case Only] 482mm×292mm×49mm [All Inclusive]
Weight	4035g
Chassis Material	Metal (Steel)
Chassis Colour	Black
Operating Temperature	0˚C – 50˚C/32˚F – 114˚F
Storage Temperature	-20˚C – 60˚C/-4˚F – 140˚F
Relative Humidity	20 – 90% RH (Non-condensing)
Power Consumption	156W

8.2 Video Specifications

Supported Resolutions (Hz)	Input				Output	
	HDBT	USB-C	DP	HDMI	HDMI	HDBT
720×400p@85	✓	✓	✓	✓	×	×
640×480p@60/72/75/85	✓	✓	✓	✓	60	60
720×480i@59.94/60	✓	×	×	✓	×	×
720×480p@59.94/60	✓	✓	✓	✓	60	60
720×576i@50	✓	×	×	✓	×	×
720×576p@50	✓	✓	✓	✓	✓	✓
800×600p@56/60/72/75/85	✓	✓	✓	✓	60	60
848×480p@60	✓	✓	✓	✓	✓	✓
1024×768p@60/70/75/85	✓	✓	✓	✓	60	60
1152×864p@75	✓	✓	✓	✓	×	×
1280×720p@50/59.94/60	✓	✓	✓	✓	50/60	50/60
1280×768p@60/75	✓	✓	✓	✓	60	60
1280×800p@60/60RB	✓	✓	60	60	60	60
1280×960p@60/85	✓	✓	✓	✓	60	60
1280×1024p@60/75/85	✓	✓	✓	✓	60	60
1360×768p@60	✓	✓	✓	✓	✓	✓
1366×768p@60/60RB	✓	✓	60	60	60	60
1400×1050p@60/60RB/75	✓	✓	✓	✓	60	60
1440×900p@60/60RB/75/85	✓	✓	✓	✓	60	60
1600×900p@60RB	✓	✓	✓	✓	✓	✓
1600×1200p@60	✓	✓	✓	✓	✓	✓
1680×1050p@60/60RB	✓	✓	✓	✓	60	60
1920×1080i@50/59.94/60	✓	×	×	✓	×	×

Supported Resolutions (Hz)	Input				Output	
	HDBT	USB-C	DP	HDMI	HDMI	HDBT
1920×1080p @23.97/24/25/29.97/30	✓	✓	✓	✓	24/25/30	24/25/30
1920×1080p@50/59.94/60	✓	✓	✓	✓	50/60	50/60
1920×1200p@60/60RB	✓	✓	✓	✓	60RB	60RB
2560×1440p@60RB	✓	✓	✓	✓	×	×
2560×1600p@60RB	✓	✓	✓	✓	×	×
2048×1080p@23/24/25/29/30	✓	✓	✓	✓	×	×
2048×1080p@50/59/60	✓	✓	✓	✓	×	×
3840×2160p @23.98/24/25/29.97/30	✓	✓	✓	✓	24/25/30	24/25/30
3840×2160p@50/60 (4:2:0)	✓	✓	✓	✓	×	✓
3840×2160p@24, HDR10	×	×	×	×	×	×
3840×2160p@50/60 (4:2:0),HDR10	×	×	×	×	×	×
3840×2160p@50/59.94/60	×	✓	✓	✓	59/60	×
3840×2400@60RB	×	×	×	×	×	×
4096×2160p@23.98/24/25/30	✓	✓	✓	✓	24/25/30	24/25/30
4096×2160p@50/60 (4:2:0)	✓	✓	✓	✓	×	✓
4096×2160p@24, HDR10	×	×	×	×	×	×
4096×2160p@50/60 (4:2:0),HDR10	×	×	×	×	×	×
4096×2160p@50/59.94/60	×	✓	✓	✓	50/59/60	×

8.3 Audio Specifications

8.3.1 Digital Audio

Inputs 1~6 / Outputs A~B	
LPCM	
Max Channels	2 Channels
Sampling Rate (kHz)	48
Bitstream	
Supported Formats	None

8.3.2 Analog Audio

Mic Input	
Max Audio Level	50mVrms
Impedance	10kΩ
Type	Unbalanced

Analog Input (5-pin Terminal Block)	
Max Audio Level	4Vrms
Impedance	10kΩ
Type	Balanced

Analog Input (3.5mm)	
Max Audio Level	2Vrms
Impedance	10kΩ
Type	Unbalanced

Analog Output (5-pin Terminal Block)	
Max Audio Level	4Vrms
THD+N	< –60dB@0dBFS 1kHz (A-wt)
SNR	> 70dB@0dBFS

Analog Output (5-pin Terminal Block)	
Frequency Response	< ±3dB@20Hz~20kHz
Crosstalk	< −60dB@10kHz
Impedance	499Ω
Type	Balanced

Analog Output (Amplified)	
Max Power Level	20W+20W
THD+N	< −60dB@0dBFS 1kHz (A-wt)
SNR	> 70dB@0dBFS
Frequency Response	< ±3dB@20Hz~20kHz
Crosstalk	< −60dB@10kHz
Type	Balanced

8.4 Cable Specifications

Cable Length	HD	FHD	4K UHD	4K UHD+	8K UHD
High Speed HDMI Cable					
HDMI Input	15m	10m	5m	3m	×
HDMI Output	15m	10m	5m	3m	×
DisplayPort Cable					
DisplayPort Input	15m	10m	2m		×
USB-C Cable					
USB-C Input	2m			1m	×
Ethernet Cable					
Cat.5e	90m		Input 70m Output 90m	×	
Cat.6a/7	100m		100m	×	

Bandwidth Category Examples:

- **HD Video**
  - 720p@60Hz
  - HDMI transmission rates lower than 3Gbps
  - HD-SDI (SMPTE 292M, 1.485Gbps)
- **FHD Video**
  - 1080p@60Hz
  - HDMI transmission rates between 3Gbps and 5.3Gbps
  - 3G-SDI (SMPTE 424M, 2.970Gbps)
- **4K UHD Video**
  - 4K@24/25/30Hz (8-bit colour) & 4K@50/60Hz (4:2:0, 8-bit colour)
  - HDMI transmission rates between 5.3Gbps and 10.2Gbps
  - 6G-SDI (SMPTE ST 2081, 6Gbps)
- **4K UHD+ Video**

- 1080p@120Hz (10/12-bit HDR)
- 4K@50/60Hz (4:4:4, 8-bit) & 4K@50/60Hz (4:2:0, 10/12-bit HDR)
- HDMI transmission rates between 10.2Gbps and 18Gbps
- 12G-SDI (SMPTE ST 2082, 12Gbps)

- **8K UHD Video**
  - 4K@120Hz (10/12-bit HDR)
  - 8K@24/25/30Hz (10/12-bit HDR) & 8K@50/60Hz (4:2:0, 8-bit colour)
  - HDMI transmission rates between 18Gbps and 48Gbps
  - 24G-SDI (SMPTE ST 2083, 24Gbps)

8.5 HDBaseT Features

HDBaseT Feature Set	Transmitter
Video & Audio Extension	Supported
LAN Extension	Supported
Send power to Receiver	Supported (PoH)
Accept power from Receiver	Unsupported
IR Extension	Supported
RS-232 Extension	Supported
USB 2.0 Extension	Supported

HDBaseT Feature Set	Receiver
Video & Audio Extension	Supported
LAN Extension	Supported
Send power to Transmitter	Supported (PoH)
Accept power from Transmitter	Unsupported
IR Extension	Supported
RS-232 Extension	Supported
USB 2.0 Extension	Supported

9. ACRONYMS

ACRONYM	COMPLETE TERM
4K UHD	4K Ultra-High-Definition (10.2Gbps max)
4K UHD+	4K Ultra-High-Definition (18Gbps max)
8K UHD	8K Ultra-High-Definition (48Gbps max, without DSC)
8K UHD+	8K Ultra-High-Definition (48Gbps max, with DSC)
ADC	Analog-to-Digital Converter
ASCII	American Standard Code for Information Interchange
AV	Audio/Video
AVR	Audio/Video Receiver or Recorder
Cat.5e	Enhanced Category 5 cable
Cat.6	Category 6 cable
Cat.6A	Augmented Category 6 cable
Cat.7	Category 7 cable
CEC	Consumer Electronics Control
DAC	Digital-to-Analog Converter
dB	Decibel
DHCP	Dynamic Host Configuration Protocol
DP	DisplayPort
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
Gbps	Gigabits per second
GUI	Graphical User Interface
HDBT	HDBaseT
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface

ACRONYM	COMPLETE TERM
HDR	High Dynamic Range
HDTV	High-Definition Television
HID	Human Interface Device
IP	Internet Protocol
IR	Infrared
kHz	Kilohertz
KVM	Keyboard/Video/Mouse
LAN	Local Area Network
LED	Light-Emitting Diode
LPCM	Linear Pulse-Code Modulation
MAC	Media Access Control
MHz	Megahertz
OSD	On-Screen Display
PD	Powered Device
PoH	Power over HDBaseT
PSE	Power Sourcing Equipment
SNR	Signal-to-Noise Ratio
TCP	Transmission Control Protocol
THD+N	Total Harmonic Distortion plus Noise
TMDS	Transition-Minimized Differential Signaling
UAC	USB Audio Class
UHDTV	Ultra-High-Definition Television
USB	Universal Serial Bus
UVC	USB Video Class
VGA	Video Graphics Array

ACRONYM	COMPLETE TERM
WUXGA (RB)	Widescreen Ultra Extended Graphics Array (Reduced Blanking)
XGA	Extended Graphics Array
Ω	Ohm

Note: Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.

CYP (UK) Ltd., Unit 7, Shepperton Business Park, Govett Avenue,
Shepperton, Middlesex, TW17 8BA
Tel: +44 (0) 20 3137 9180 | Email: sales@cypeurope.com
www.cypeurope.com
v1.00