PUV-1082PL-4K22N

10x10 HDMI HDBaseT™ LITE Matrix with Audio Matricing (4K, HDCP2.2, HDMI2.0, PoH, OAR, 60m)

OPERATION MANUAL

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Version 1.1

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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.

REVISION HISTORY

VERSION NO.	DATE	SUMMARY OF CHANGE
v1.00	17/09/2020	First release

CONTENTS

1. INTRODUCTION

The PUV-1082PL-4K22N HDMI/HDBaseT Matrix supports the transmission of video (resolutions up to 4K2K@60Hz, HDCP 2.2, HDMI2.0) and multi-channel digital audio from 10 HDMI sources to 8 HDBaseT outputs and 2 independent HDMI2.0 outputs. HDBaseT outputs allow transmission via a single CAT5e/6/7 cable up to 60m, whilst the independent HDMI outputs support cable lengths of up to 10m. This matrix supports high resolution digital audio formats such as LPCM 7.1CH,Dolby TrueHD, Dolby Digital Plus, Dolby Atmos and DTS-HD Master Audio as well as 3D video content.

The PUV-1082PL-4K22 matrix incorporates an independent audio matrix with 14 audio outputs and 10 audio inputs. These outputs and inputs can also be used for de-embedding HDMI audio to the audio outputs and embedding audio to the HDBaseT and HDMI outputs. The audio CAT connections, along with compatible bi-directional audio modules (PU-305BD-TX & PU-305BDRX & PU-305BDA-RX) allow integration with remote sources and remote audio zones. In addition, volume, mute, treble, bass and audio lip-sink correction control are available on all direct audio outputs. Optical Audio Return (OAR) Technology allows the optical input on the PUV-1230PL-RX receiver to be routed back to the audio matrix.

Video signals beyond the bandwidth of HDBaseT will be automatically converted to ensure a picture is always transmitted to the HDBaseT receiver. HDMI inputs and HDBaseT / HDMI outputs can be configured to send command based HEX CEC messaging. HDBaseT outputs can be configured to downscale either via Auto EDID read or permanently ON or OFF.

The matrix has a built-in pattern generator which can be used to verify the video signal on any of its 10 output ports. The Power over HDBaseT (PoH) function provides power to compatible receivers.

Control is via manual selection buttons, IR, RS-232, Telnet or Web GUI. CYP provide control drivers for all the major control systems. This unit also supports RS232 pass-through to the receivers. The PUV-1082PL-4K22 is designed to be used with PUV-1230PL-RX or PUV-1210PL-RX receivers that can utilise the PoH capabilities of the matrix.

2. APPLICATIONS

- Full Audio Video matrix system
- Residential AV matrix installation
- Commercial AV matrix installation
- Security systems
- University lecture hall systems
- Retail installation systems

3. PACKAGE CONTENTS

- 1× 10×10 Matrix system
- 2× 24V DC Power Adaptor
- 11× IR Blaster
- 9× IR Extender
- 2× Racked Ear
- 1× Remote Control (CR-163)
- 1× UK Power Cord
- 1× Europe Power Cord
- 1× Operation Manual

4. SYSTEM REQUIREMENTS

- HDMI equipped source devices
- Audio only source devices
- Standard and/or compatible AudioCAT based amplifiers – AU-A50 & AU-A300-HBT
- Compatible AudioCAT receivers – PU-305BD-RX & PU-305BDA-RX
- HDMI equipped displays
- Compatible HDBaseT receivers – PUV-1230PL-RX and PUV-1210PL-RX
- Industry standard CAT6/7 cables
- HDMI cables – 'Premium High Speed HDMI Cables' are recommended with 6G HDMI sources.

5. FEATURES

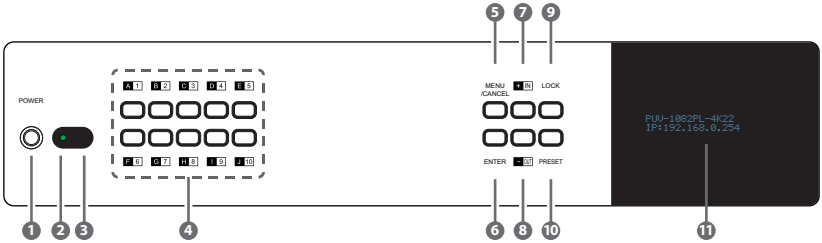
- HDMI 2.0, HDCP1.4 and HDCP2.2 compliant
- Routes ten HDMI sources to ten displays using eight HDBaseT outputs and two independent HDMI outputs
- HDBaseT convergence: High-Definition video and audio, PoH (Power over HDBaseT) and control (Bi-Directional IR & RS-232 pass through)
- Supported HDBaseT resolutions: VGA~WUXGA, 480i~1080p, 4K UHD@24/25/30Hz (RGB4:4:4&YUV4:4:&YUV4:2:2), 4K@24Hz 4:2:2 HDR dependent upon the output display's EDID settings
- Supports resolutions up to 4K@60 (RGB 4:4:4) on HDMI output ports
- Supports automatic 4K@60 RGB 4:4:4 to YUV 4:2:0 conversion for HDBaseT outputs
- Supports automatic 4K HDR conversion for HDBaseT outputs as required
- Supports HDMI inputs and HDBaseT / HDMI outputs HEX based CEC messaging
- Supports HDBaseT output downscaling
- 4K/2K & 4K UHD signals can be transmitted up to 35m via CAT5e/6 and 40m via CAT6a/7
- Supports pass-through of HD audio formats: LPCM 2/5.1/7.1CH, Dolby Digital 2/5.1CH, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos and DTS-HD Master Audio
- Supports audio matrix functionality enabling full audio management of the system including HDBaseT audio zone selection, and fully independent audio only zones
- Supports Digital to Analogue Conversion (DAC) and Analogue to Digital Conversion (ADC) for audio integration
- Supports on-board audio over CAT inputs and outputs for transmission up to 150m
- Supports Volume, Mute, Treble, Bass, and Audio delay for lip-sync on direct audio outputs
- Supports Audio Pre-Gain level adjustment for all digital and analogue audio inputs
- Optical Audio Return (OAR)
- Advanced internal and external EDID management with 4 sets of configurable EDID settings

- Internal test pattern generation for self-testing and sink device testing. (Internal test patterns up to and including 4K signals)
- Supports HDCP repeating and CEC functions
- Control is via RS-232, remote control, on-panel control and IP Control (Telnet & Web GUI)
- Supports OSD for input and output naming plus banner text
- 2U rack mounted design

Note : Audio break away functions support PCM format only

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



1. **POWER:** Press this button to power on/ off device.
2. **POWER LED:** The LED will illuminate in green when the power is on, and shown in red when power off this device.

   The network function will remain active once press this power off button. This is for connected Receiver can get power when matrix unit be power off.
3. **IR WINDOW:** Receiving remote control signal to control this device, please use the remote control unit supplied in the package.
4. **OUTPUT A~J & INPUT 1~10:** Press "OUT" button to select the output source (A~J). Next, press output keys (A~J) to select output source; then press "IN" key to select input source (1~10). Finally, press "ENTER" to confirm selection.

   For example, if outputs A~D need to be assign to input 1, following sequences of button presses need to be performed:

   OUT → A,B,C,D → IN → number key "1" →ENTER

   If all output source would like to be assigned to single input, press "OUT" button and all input buttons "A~J" then press "IN" and enter the number key of input and enter to confirm the selection.
5. **MENU & CANCEL:** Press "MENU" button to access the LCM menu. The menu tree please refers to section 17. Press "CANCEL" button to cancel the selection.
6. **ENTER:** Press this button to confirm the selection.
7. **PLUS (+)/IN:** Press Plus "+" button to navigate up button selection. Press "IN" button for input port sources selection.

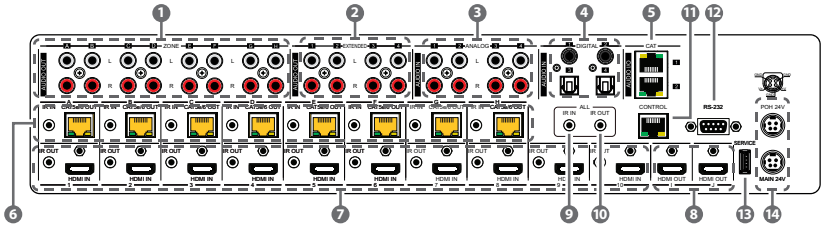
8. **MINUS (-)/OUT:** Press Minus "-" button to navigate down button selection. Press "OUT" button for output port sources selection.

9. **LOCK:** Press this button for three second to lock all buttons on panel. The right top side will display "L" once front panel locked. Press for few seconds to unlock.

10. **PRESET:** Press this button to recall preset setting, allow maximum 8 sets preset setting to recall. The preset settings are able to be completed on WebGUI. Please refer to section 9.1.4 for advanced preset setting.

11. **LCM:** The LCM displays the setting and information.

6.2 Rear Panel



1. **ZONE AUDIO OUT:** Eight sets of audio output from HDBaseT output. Those audio outputs capable to be individual routing to any HDMI input for example insert external audio source as background music or select any two audio to mix together then insert the mixed audio source to HDMI content. The audio mixer, treble, bass range, audio delay and volume adjustment are able to be setting on WebGUI. The amplifiers are able to be connected for audio source broadcasting.

2. **EXTENDED AUDIO OUT:** Four sets of extended audio output provide flexibility to extend audio output to preferred space. The amplifiers are able to be connected for audio source broadcasting. The audio mixer, treble, bass range, audio delay and volume adjustment are able to be setting on WebGUI.

3. **ANALOGUE AUDIO IN:** Plug analogue audio source from DVD player, PC, MP3…etc. to insert audio source into matrix unit. The audio source is able to be assign to any HDMI input or mixing with other audio source. The audio mixer, treble, bass range, audio delay and volume adjustment are able to be setting on WebGUI. The amplifiers are able to be connected for audio source broadcasting.

4. **DIGITAL AUDIO IN:** Connects with digital audio source for example P3, DVD players…etc to insert audio source into matrix unit. The audio source is able to be assign to any HDMI input or mixing with other audio source. The audio mixer, treble, bass range, audio delay and volume adjustment are able to be setting on WebGUI. The amplifiers are able to be connected for audio source broadcasting.

5. **CAT AUDIO I/O:** Connecting compatible Receiver with Cat5e/6 cable to send audio to further distance or audio source transmit back to matrix unit. The audio source could be transmitted up to 150M at 48 kHz and 50M at 192kHz.

6. **CAT5e/6 OUT & IR IN A~H:** Connect from these Cat5e/6 outputs to input port of compatible Receivers with a single CAT5e/6/7 cable for HDMI Audio/Video and IR/RS-232 control signal transmission. The IR In provides customer to transmit the IR signal to connected displays. Please use the remote control unit supplied in the package.

7. **HDMI IN & IR OUT 1~10:** Connect to source devices with HDMI interface and HDMI cable, the input source devices includes DVD players, Set-top Boxes and so on. The qualified HDMI cables are recommended. The DVI source is complaint; please use cable to converts DVI to HDMI. The IR Out provides customer to transmit the IR signal to matrix unit from display installation sites. Please use the remote control unit supplied in the package.

8. **HDMI OUT I/J:** Please connect displays with HDMI interface. These two HDMI output could be either independent output 6G signal or apply as mirror purpose, for example to monitor Digital Video Recorder in real time.

9. **IR IN (ALL):** Connect an IR extender for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR extender. IR signals received will transmitted by all IR blasters connected to the matrix or Receivers.

10. **IR OUT (ALL):** Connect an IR Blaster for IR signal transmission to the source/input location. Place the IR Blaster in direct line-of-sight of the equipment to be controlled. It will transmit all IR signals Received by any IR extenders connected to the matrix or Receivers.

11. **CONTROL:** Connect to an active network for Telnet and WebGUI control (refer to Sections 6.9 and 6.10).

12. **RS-232:** Connect to a PC or control system with D-Sub 9-pin cable to

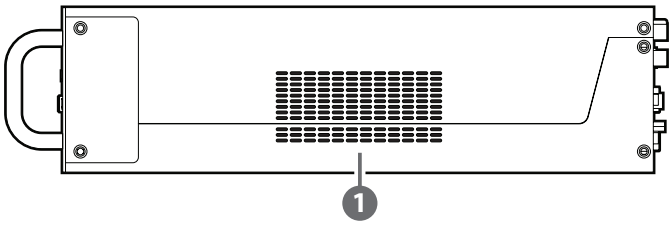
control the matrix with RS-232 commands (refer to Sections 7)

13 **SERVICE:** Please plug in USB thumb drive to update Firmware in field. The USB thumb drive shall plug in and select update "YES" on front panel and firmware in USB thumb drive to complete firmware update.

14 **MAIN 24V & POH 24V:** Plug the 24 V main power supply in the package for power on the matrix unit. If connect with POH Receiver, please plug 24V power supply to POH outlet for supplying power over cable to compatible Receiver with POH function.

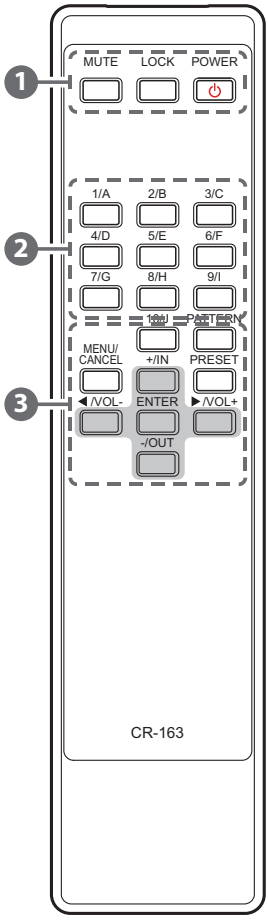
NOTE: When connecting a UHD/HDR source to the new CYP matrices the direct HDMI outputs can pass-through the HDR/Deep colour data without compromise. If the source needs to be output via 1 or multiple HDBaseT outputs, the HDMI HDR/UHD source, such as a Blu-ray player will then down-sample the HDR/Deep Colour to transmit over the current HDBaseT 3G bandwidth parameters, meaning the HDMI outputs will also output the same down-sampled content.

6.3 Side Panel



1 **FAN VENTILATOR:** These are air ventilation areas, DO NOT block these areas or cover it with any object. Please allow adequate space around the unit for air circulation.

6.4 Remote Control



1 **POWER:** Press this button to power the matrix unit.

LOCK: Press this button to lock front panel of matrix unit.

MUTE: Mutes Zone Audio outputs. HDBaseT audio can only be muted when an independent non HDMI audio has been routed to these outputs.

2 **INPUT 1~10 & OUTPUT A~J & Pattern:** For HDBaseT zone operation the user only needs to select the desired input 1-10 or Pattern. For Front panel operation please refer to front panel instructions.

NOTE: PUV-1082PL-4K22's remote sends commands based upon how the matrix has been configured for the Zone AV Pairing mode which is setup via the webGUI, please refer to section 6.10.8

3 **PRESET:** Recall preset setting back. The preset settings are able to be configured on WebGUI.

MENU/CANCEL: Press "Menu" button to access to menu selection on LCM display. Press "Cancel" button to cancel selection.

PLUS (+)/IN: Press "+" to navigate up on menu selection. Press "In" for input port number selection:

MINUS (-)/OUT: Press "-" to navigate down on menu selection of LCM display. Press "OUT" for output ports selection.

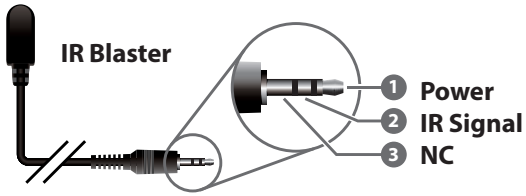
VOL UP/DOWN (+/-): Adjust volume of Adjust volume of zone audio.

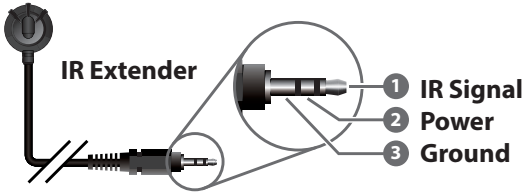
6.5 OLED Menu

1ST LEVEL	2ND LEVEL	3RD LEVEL
EDID	EDID Mode	All/Independent
	EDID Select	All/1~6/7~16/17~20 (1~6=Default EDID settings, 7~16=Sink's EDID settings, 17~20=User's EDID settings)
Network	Link Status (Idle)	
	IP Address	
	Subnet Mask	
	Gateway Address	
	MAC Address	
	DHCP mode	On/Off
HDMI Mirroring	Output I/J	
Factory Default	Yes/No	
Firmware	Version	
	Update	Yes/No

Note: The model name and IP address will be displayed when power on the matrix unit. The mask and Gateway information will be displayed once press "+" button on front panel or remote control unit.

6.6 IR Cable Pin Assignment





6.7 RS-232 Protocol

PRODUCT NAME	
Pin	**Assignment**
1	NC
2	TX
3	RX
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

▶
◀

REMOTE CONTROLLER	
Pin	**Assignment**
1	NC
2	RX
3	TX
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Baud Rate: 115200bps
Data bit: 8 bits
Parity: None
Flow Control: None
Stop Bit: 1

6.8 RS-232 and Telnet Commands

Real World Command Use

Zone AV Pairing Mode command use:

The easiest way to use the PUV-1082PL-4K22 for simple HDMI switching whilst still allowing for individually tailored zone audio is to use the Zone AV Pairing setting on the webGUI.

This is a configured and saved setting allowing each HDMI input to be paired per output with different audio inputs. Think surround sound and non-surround sound zones. Please review to section 6.10.8 for details of Zone AV Pairing configuration.

Command	Description
ZoneAvPair HDBT_Out A Slot 1 Load	Load Zone AV Pair HDBaseT output A input 1

Optical Audio Return (OAR) command use:

If you are also using the Zone Audio output (Stereo Zones) for any zone we recommend using the Optical Audio Return (OAR) function to simple set the Zone Audio output to always listen to the audio coming from the TV itself. In this way the end user can also freely switch between the matrix input on the TV and the internal tuner/smart functions of the TV and always be guaranteed audio (remember to set the TV's optical output to LPCM Stereo).

This command only needs to be resent after an audio only source has been selected for that individual Zone Audio output. Commonly a control system would have 'TV' button in the audio source selection area along with your other audio sources.

Command	Description
ZoneLineOut A AudioSrc=OAR_In A	Zone Audio output listens to OAR from the TV in zone A

HDMI Mirroring command use 1:

If you have rack (head end) based AVRs for surround sound zones we recommend using the HDMI outputs and the HDMI mirroring mode to easily have the audio sent to the AVR follow the signal sent to that zones TV.

As long as no further commands are ever sent to the HDMI outputs of the PUV-1082PL-4K22 you only need to set this up once.

Command	Description
HDMI_Out I Mirroring=HDBT_Out A	Set HDMI output I to mirror HDBaseT output A

HDMI Mirroring command use 2:

When using the mirroring function you can use any standard commands to the selected output and the mirrored HDMI will follow the commands. This can be an AV Pairing, Video or Audio command etc. A good example of this is wishing the mirrored HDMI output connected to an AVR to select an audio only source, for this you send the command to the master HDBaseT output for the mirrored HDMI output to follow. Remember that if you're using the recommended AV Pairing mode this will return both the audio and the video to the correct selection once a new AV Pairing command is sent.

Command	Description
HDBT_Out A AudioSrc=AnalogIn 2	Set HDBaseT output 'A' to Analogue Line in 2 so the mirrored HDMI output 'I' follows the selection.

Audio command use:

The PUV-1082PL-4K22 offers 8 direct audio only inputs, whilst some of these input will likely be used for downmixed audio signals from surround sound sources (for stereo only zones) we expect audio only sources to be connected to deliver just audio to both TV zones and audio only zones.

Audio Only source selection command use:

To select an audio only sources for any of the audio outputs. When you are using the AV Pairing mode you merely have to send a new AV Pairing command to return that zone to the selected HDMI input.

Command	Description
ZoneLineOut A AudioSrc=AnalogIn 1	Zone Audio Line output A selecting Analogue input 1
ZoneLineOut A AudioSrc=OpticIn 1	Zone Audio Line output A selecting Optical input 1
ZoneLineOut A AudioSrc=CoaxIn 1	Zone Audio Line output A selecting Coaxial input 1
ExtLineOut 1 AudioSrc=AnalogIn 1	Extended AudioLine output 1 selecting Analogue input 1
ExtLineOut 1 AudioSrc=OpticIn 1	Extended AudioLine output 1 selecting Optical input 1
ExtLineOut 1 AudioSrc=CoaxIn 1	Extended AudioLine output 1 selecting Coaxial input 1

Above is just a few example of the Audio selection available, please refer to the full command listing for all available commands. Remember if you have configured any audio zone to listen to the OAR from the TV within a zone you must be able to select this again to return to 'listening' to that TV.

Individual Audio and Video Mode command use:

To offer the greatest level of flexibility the PUV-1082PL-4K22 can be used to send individual commands for both video and audio, this allows the installer to completely tailor the matrix to suit any possible configuration the end user may require. This flexibility does mean that at least two commands are needed whenever both a video and audio switch is required.

Switch HDBaseT output A to an HDMI input.

Command	Description
HDBT_Out A VideoSrc=HDMI_In 1	Video switch command
HDBT_Out A AudioSrc=HDMI_In 1	Audio switch command

Every individual audio and video input (including separate commands for the audio and video within a HDMI source) has a bespoke command; please see the full command listing for full details.

COMMAND	DESCRIPTION
ZoneLineOut M AudioSrc=XXX	Audio source of zone line out A~H. M=A~H(Support multiple selection). Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2 MixerOut n, n=1~3
ZoneLineOut M Treble=XXX	Treble value of zone line out A~H. M=A~H(Support multiple selection). XXX=-12~+12 (unit : dB)
ZoneLineOut M Bass=XXX	Bass value of zone line out A~H. M=A~H(Support multiple selection). XXX=-12~+12 (unit : dB)
ZoneLineOut M Volume=XXX	Audio volume of zone line out A~H. M=A~H(Support multiple selection). XXX=12 ~ -100(dB)
ZoneLineOut M Volume=Fast XXX	Zone line out A~H volume coarse(2dB step) adjusting. M=A~H(Support multiple selection). XXX="Up" or "Down"

COMMAND	DESCRIPTION
ZoneLineOut M Volume=Slow XXX	Zone line out A~H volume fine(0.5dB step) adjusting. M=A~H(Support multiple selection). XXX="Up" or "Down"
ZoneLineOut M Delay=XXX	Zone line out A~H delay. M=A~H(Support multiple selection). XXX=0~230 (mS).
ZoneLineOut M Mute	Mute zone line out A~H. M=A~H(Support multiple selection).
ZoneLineOut M Unmute	Unmute zone line out A~H. M=A~H(Support multiple selection).
ZoneLineOut M Status	Display zone line out A~H status. M=A~H(Support multiple selection).
ZoneLineOut M Name="NameString"	Setup zone line out A~H verbose name. Maximum 32 characters. M=A~H(Only support single selection).

COMMAND	DESCRIPTION
ExtLineOut M AudioSrc=XXX	Audio source of extended line out. M=1~4(Support multiple selection). Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2 MixerOut n, n=1~3
ExtLineOut M Treble=XXX	Treble value of extended line out. M=1~4(Support multiple selection). XXX=-12~+12dB
ExtLineOut M Bass=XXX	Bass value of extended line out. M=1~4(Support multiple selection). XXX=-12~+12dB
ExtLineOut M Volume=XXX	Audio volume of extended line out. M=1~4(Support multiple selection). XXX=12 ~ -100(dB)

COMMAND	DESCRIPTION
ExtLineOut M Volume=Fast XXX	Extended line out volume coarse(2dB step) adjusting. M=1~4(Support multiple selection). XXX="Up" or "Down"
ExtLineOut M Volume=Slow XXX	Extended line out volume fine(0.5dB step) adjusting. M=1~4. XXX="Up" or "Down"
ExtLineOut M Delay=XXX	Extended line out delay. M=1~4(Support multiple selection). XXX=0~230 (mS).
ExtLineOut M Mute	Mute extended line out. M=1~4(Support multiple selection).
ExtLineOut M Unmute	Unmute extended line out. M=1~4(Support multiple selection).
ExtLineOut M Status	Display extended line out 1~4 status. M=1~4(Support multiple selection).
ExtLineOut M Name="NameString"	Setup extended line out 1~4 verbose name. Maximum 32 characters. M=1~4(Only support single selection).

COMMAND	DESCRIPTION
AudioCAT_Out M AudioSrc=XXX	Audio source of AudioCAT audio out. M=1~2(Support multiple selection). Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2 MixerOut n, n=1~3
AudioCAT_Out M Status	Display AudioCAT 1~2 status. M=1~2(Support multiple selection).
AudioCAT_Out M Name="NameString"	Setup AudioCAT 1~2 verbose name. Maximum 32 characters. M=1~2(Only support single selection).
HDMI_Out M AudioSrc=XXX	Audio source of HDMI Tx audio. M=I~J(Support multiple selection). Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2 MixerOut n, n=1~3 FollowVideo

COMMAND	DESCRIPTION
HDMI_Out M Mute	Mute HDMI Tx audio. M=I~J(Support multiple selection).
HDMI_Out M Unmute	Unmute HDMI Tx audio. M=I~J(Support multiple selection).
HDMI_Out M VideoSrc=XXX	Video source of HDMI Tx out I~J. M=I~J(Support multiple selection). Available XXX: HDMI_In n, n=1~10
HDMI_Out M VideoSrc=Pattern	Set Video source of HDMI Tx out to internal test pattern. M=I~J(Support multiple selection).
HDMI_Out M VideoSrc=Default	Reset Video source of HDMI Tx out to factory default. M=I~J(Support multiple selection).
HDMI_Out M Mirroring=XXX	Audio/Video following source of HDMI Tx out I~J. M=I~J(Support multiple selection). Available XXX: HDBT_Out n, n=A~H

COMMAND	DESCRIPTION
HDMI_Out M Status	Display HDMI I~J status & properties including Aud/Vid matrix. M=I~J(Support multiple selection).
HDMI_Out M Name="NameString"	Setup HDMI I~J verbose name. Maximum 32 characters. M=I~J(Only support single selection).
HDMI_Out M CECSend=XXX	HDMI output CECSend M= I~J XXX=CEC message in HEX format eg EF 82 10 00
HDMI_Out M Downscale=XXX	HDMI output downscale M=I~J XXX=Auto, On or Off

COMMAND	DESCRIPTION
HDMI_Out M PatternTiming=XXX	HDMI output pattern timing M=I~J XXX=Pattern timing 480p 576p 720p25 720p30 720p60 720p100 720p120 1080p24 1080p25 1080p30 1080p50 1080p60 1080p100 1080p120 2160p24 2160p25 2160p30 2160p24DCI 2160p25DCI 2160p30DCI

COMMAND	DESCRIPTION
HDMI_Out M PatternType=XXX	HDMI output pattern type M=I~J XXX=Pattern type Red Green Blue Black White Magenta Yellow Cyan RampA RampB Toggle ColourBar80 ColourBar90 ColourBar180 ColourBar360
HDBT_Out M AudioSrc=XXX	Audio source of HDBaseT Tx audio. M=A~H(Support multiple selection). Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2 MixerOut n, n=1~3 FollowVideo

COMMAND	DESCRIPTION
HDBT_Out M Mute	Mute HDBaseT Tx audio. M=A~H(Support multiple selection).
HDBT_Out M Unmute	Unmute HDBaseT Tx audio. M=A~H(Support multiple selection).
HDBT_Out M VideoSrc=XXX	Video source of HDBaseT Tx out A~H. M=A~H(Support multiple selection). Available XXX: HDMI_In n, n=1~10
HDBT_Out M VideoSrc=Pattern	Reset Video source of HDBT Tx out to internal test pattern. M=A~H(Support multiple selection).
HDBT_Out M VideoSrc=Default	Reset Video source of HDBT Tx out A~H to factory default. M=A~H(Support multiple selection).
HDBT_Out M Status	Display HDBT A~H status & properties including Aud/Vid matrix. M=A~H(Support multiple selection).
HDBT_Out M Downscale=XXX	HDBT output downscale M=A~H XXX=Auto, On or Off

COMMAND	DESCRIPTION
HDBT_Out M CECSend=XXX	HDBT output CECSend M= A~H XXX=CEC message in HEX format eg EF 82 10 00
HDBT_Out M PatternTiming=XXX	HDBT output pattern timing M=A~H XXX=Pattern timing 480p 576p 720p25 720p30 720p60 720p100 720p120 1080p24 1080p25 1080p30 1080p50 1080p60 1080p100 1080p120 2160p24 2160p25 2160p30 2160p24DCI 2160p25DCI 2160p30DCI

COMMAND	DESCRIPTION
HDBT_Out M PatternType=XXX	HDBT output pattern type M=I~J XXX=Pattern type Red Green Blue Black White Magenta Yellow Cyan RampA RampB Toggle ColourBar80 ColourBar90 ColourBar180 ColourBar360
HDBT_Out M Name="NameString"	Setup HDBT A~H verbose name. Maximum 32 characters. M=A~H(Only support single selection).
HDMI_In M Status	Display HDMI In 1~10 status. M=1~10(Support multiple selection).

COMMAND	DESCRIPTION
HDMI_In M Name=NameString	Setup HDMI In 1~10 verbose name. Maximum 32 characters. M=1~10(Only support single selection).
HDMI_In M PreGain=XXX	HDMI input PreGain M=1~10(Only support single selection). XXX= -100 ~ 12
HDMI_In M PreGain=Fast XXX	HDMI input PreGain M= 1~10 volume coarse (2dB step) adjusting. M=A~H(Support multiple selection). XXX="Up" or "Down"
HDMI_In M PreGain=Slow XXX	HDMI input PreGain M= 1~10 volume fine (0.5dB step) adjusting. M=A~H(Support multiple selection). XXX="Up" or "Down"
HDMI_In M CECSend=XXX	HDMI input CECSend M= 1~10 XXX=CEC message in HEX format eg EF 82 10 00
HDMI_In M HDCP=XXX	HDMI input HDCP M= 1~10 XXX=On or Off
HDMI_In M Mute	HDMI input Mute M= 1~10

COMMAND	DESCRIPTION
HDMI_In M Unmute	HDMI input Unmute M= 1~10
MixerOut M AudioSrc N=XXX	Audio source of audio mixer input channel. M=1~3(Support multiple selection). N=A or B. Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 `CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2
MixerOut M Gain N=XXX	Signal gain of audio mixer input channel. M=1~3(Support multiple selection). N=A or B. Available XXX=0 ~ 100(%).
MixerOut M Mono	Set Mixer out=mono, which means out=signal A+B. M=1~3(Support multiple selection).
MixerOut M Stereo	Set Mixer out=Stereo M=1~3(Support multiple selection).
MixerOut M Status	Print Mixer out configurations M=1~3(Support multiple selection).
SETIP <IP> <SubNet> <GW>	Setting IP.SubNet.GateWay(Static IP)
RSTIP	IP Configuration Was reset to DHCP
IPCONFIG	Display the current IP config
P0	Power Off. Network function still active

COMMAND	DESCRIPTION
P1	Power On
P2	Power Off all
P?	Report power status
PRESET Save M	Save current A/V routing. M=1~8.
PRESET Load M	Recall current A/V routing. M=1~8.
PRESET Show [M]	List current stored A/V preset. M=1~8. If M is omitted, list all A/V preset.
PRESET name M="NameString"	Set verbose name of specified preset slot M. Maximum 32 characters.
EDID All=EdidSetNumber	Set EDID of all input port =Specified EDID set number. If EdidSetNumer="Off", it becomes independent mode.
EDID HDMI_In M=EdidSetNumber	Set specified HDMI input port M=Specified EDID set number.
EDID M Name="NameString"	Set verbose name of specified EDID slot M.
FactoryDefault **(Hidden Command)**	Reset all configuration to factory default.
MAC	Show MAC address.
?	Display all available commands (Except hidden commands)
Help	Display all available commands (Except hidden commands)
Ver	Show firmware version

COMMAND	DESCRIPTION
ZoneAvPair HDBT_Out M Slot N AudioSrc=XXX	Setup HDBT_Out zone side audio/video pairing storage slot N audio source. M=A~H(Only support single selection). N=1~11 (Support multiple selection). Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2 MixerOut n, n=1~3
ZoneAvPair HDBT_Out M Slot N VideoSrc=XXX	Setup HDBT_Out zone side audio/video pairing storage slot N video source. M=A~H(Only support single selection). N=1~11 (Support multiple selection). Available XXX: HDMI_In n, n=1~10(Not available on slot 11) Pattern
ZoneAvPair HDBT_Out M Slot N Load	Load slot N of HDBT_Out zone side audio/video pairing storage. M=A~H(Only support single selection). N=1~11 (Support multiple selection).

COMMAND	DESCRIPTION
ZoneAvPair HDMI_Out M Slot N AudioSrc=XXX	Setup HDMI_Out zone side audio/ video pairing storage slot N audio source. M=I~J(Only support single selection). N=1~11 (Support multiple selection). Available XXX: HDMI_In n, n=1~10 OpticIn n, n=1~2 CoaxIn n, n=1~2 AnalogIn n, n=1~4 OAR_In n, n=A~H CAT_In n, n=1~2 MixerOut n, n=1~3
ZoneAvPair HDMI_Out M Slot N VideoSrc=XXX	Setup HDMI_Out zone side audio/ video pairing storage slot N video source. M=I~J(Only support single selection). N=1~11 (Support multiple selection). Available XXX: HDMI_In n, n=1~10(Not available on slot 11) Pattern
ZoneAvPair HDMI_Out M Slot N Load	Load slot N of HDMI_Out zone side audio/video pairing storage. M=I~J(Only support single selection). N=1~11 (Support multiple selection).

COMMAND	DESCRIPTION
ZoneAVPair M N Slot P	HDBT output pattern timing
PatternTiming=XXX	M= Output: HDBT_out or HDMI-out
	N= HDBaseT output A~H or HDMI output I~J
	P = 1~11
	XXX=Pattern timing
	480p
	576p
	720p25
	720p30
	720p60
	720p100
	720p120
	1080p24
	1080p25
	1080p30
	1080p50
	1080p60
	1080p100
	1080p120
	2160p24
	2160p25
	2160p30
	2160p24DCI
	2160p25DCI
	2160p30DCI

COMMAND	DESCRIPTION
ZoneAVPair M N Slot P **PatternType=XXX**	HDBT output pattern type M= Output: HDBT_out or HDMI-out N= HDBaseT output A~H or HDMI output I~J P = 1~11 XXX=Pattern type Red Green Blue Black White Magenta Yellow Cyan RampA RampB Toggle ColourBar80 ColourBar90 ColourBar180 ColourBar360
IR_Route HDBT_Out M0 M1 M2	Setup IR source of HDBT Rx end IR out jack. M0=Output port index. M0=A~H (Support multiple selection) M1=Route operation. Available M1: Add: Add M2 input source to HDBT_Out. Del: Delete M2 input source from HDBT_Out. M2=Input source. Available M2: IR_InAll: IR In all input jack. Generator: Internal IR encoder.

COMMAND	DESCRIPTION
IR_Route HDBT_Out M0 Show	Print current IR source of HDBT Rx end IR out jack. M0=Output port index. M0=A~H (Support multiple selection)
IR_Route IR_Out_Out M0 M1 M2	Setup IR source of IR_Out jack aside of each HDMI In connector. M0=Output port index. M0=1~10 (Support multiple selection) M1=Route operation. Available M1: Add: Add M2 input source to IR_ Out. Del: Delete M2 input source from IR_Out. M2=Input source. Available M2: IR_InAll: IR In all input jack. Generator: Internal IR encoder.
IR_Route IR_Out M0 Show	Print current IR source of IR_Out jack aside of each HDMI In connector. M0=Output port index. M0=1~10 (Support multiple selection)
? <any Command>	Display instruction of that command

Note: All commands are case-insensitive.

Commands Explanation Suitable for:

- ZoneLineOut
- ExtLineOut
- AudioCAT_Out
- HDMI_Out
- HDBT_Out
- MixerOut
- Pattern
- ZoneAvPair

Basic Command Format:

- PortNumber Parameter=value. EX: ZoneLineOut B Treble = -12

Advanced Command Format:

- Multi-Port Number: Each port uses "+" for separation. "space" is not permitted. Ex: Command Port 1+Port 2+Port 3 Parameter=Value
- Multi-Parameter: Each parameter uses "," for separation. "space" is permitted. Ex: Command Port Parameter 1=Value , Parameter 2=Value, Parameter 3=Value ...
- Multi-Port Number and Multi-Parameter: Each [port and parameter] use "&" for separation. "space" is permitted. Ex: Command Port 1 Parameter 1=Value & Port 2 Parameter 2=Value & Port 3 Parameter 3=Value ...

Complex Command Format:

- Multi-[port and parameter]use "," and "&" for separation. "space" is permitted. Ex: Command Port 1+Port 2+Port 3 , Parameter 1=Value, Parameter 2=Value & Port 4+Port 5+Port 6 Parameter 3=Value , Parameter 4=Value & Port 7 Parameter 5=Value ...

Basic Commands Examples:

- ZoneLineOut B Treble = -12
- ZoneLineOut B AudioSrc = HDMI_In 8
- ZoneLineOut B Bass=-9
- ZoneLineOut B Volume=-55
- ZoneLineOut B Delay =100
- ZoneLineOut B Mute
- ZoneLineOut C Treble = -11
- ZoneLineOut C AudioSrc = HDMI_In 8
- ZoneLineOut C Bass=-9
- ZoneLineOut C Volume=-55
- ZoneLineOut C Delay =101
- ZoneLineOut C Mute
- ZoneLineOut H Treble = -10
- ZoneLineOut H AudioSrc = HDMI_In 8
- ZoneLineOut H Bass=-10
- ZoneLineOut H Volume=-56

- ZoneLineOut H Delay =102
- ZoneLineOut H Mute
- Pattern Timing=4K2K60
- Pattern Type=Green
- ZoneAvPair HDBT_Out C Slot 1 AudioSrc=OAR_In A
- ZoneAvPair HDBT_Out C Slot 1 VideoSrc=HDMI_In 1
- ZoneAvPair HDBT_Out C Slot 3 AudioSrc=OAR_In B
- ZoneAvPair HDBT_Out C Slot 3 VideoSrc=HDMI_In 2
- ZoneAvPair HDBT_Out C Slot 5 AudioSrc=OAR_In B
- ZoneAvPair HDBT_Out C Slot 5 VideoSrc=HDMI_In 2

Advanced Commands Examples (Option 1):

- ZoneLineOut B+C+H AudioSrc = HDMI_In 8, Mute
- ZoneLineOut B Treble = -12, Delay =100
- ZoneLineOut C Treble = -11, Delay =101
- ZoneLineOut H Treble = -10, Delay =102, Bass=-10, Volume=-56
- ZoneLineOut B+C Bass=-9, Volume=-55
- Pattern Timing=4K2K60, Type=Green
- ZoneAvPair HDBT_Out C Slot 1 AudioSrc=OAR_In A, VideoSrc=HDMI_In 1
- ZoneAvPair HDBT_Out C Slot 3+5 AudioSrc=OAR_In B, VideoSrc=HDMI_In 2
- Parameter uses "," for separation. "space" is permitted
- Port uses "+" for separation. "space" is not permitted

Advanced Commands Examples (Option 2):

- ZoneLineOut B+C+H AudioSrc = HDMI_In 8, Mute & B+C Bass=-9, Volume=-55 & H Treble = -10, Delay =102, Bass=-10, Volume=-56 & B Treble = -12, Delay =100 & C Treble = -10, Delay =101
- Pattern Timing=4K2K60, Type=Green
- ZoneAvPair HDBT_Out C Slot 1 AudioSrc=OAR_In A, VideoSrc=HDMI_In 1 & Slot 3+5 AudioSrc=OAR_In B, VideoSrc=HDMI_In 2
- Theoretically, the maximum characters length of command will be 2-Mega bytes(2048000)

6.9 Telnet Control

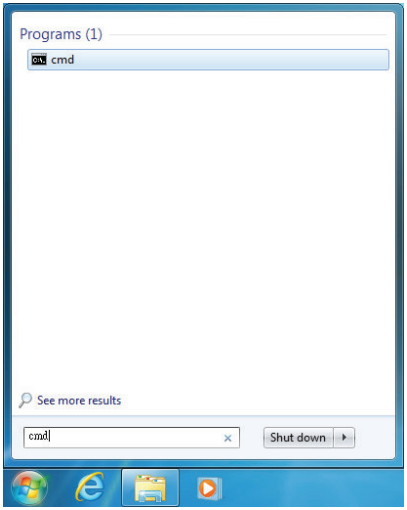
Before attempting to use the Telnet control, please ensure that both the Matrix (via the 'LAN /CONTROL' port) and the PC/Laptop are connected to the same active networks.

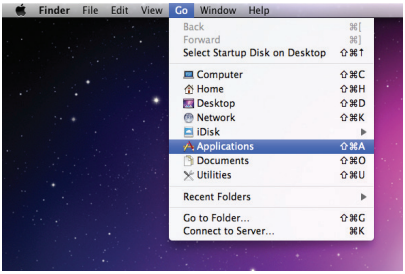
To access the Telnet control in Windows 7, click on the 'Start' menu and type "cmd" in the Search field then press enter.

Under Windows XP go to the 'Start' menu and click on "Run", type "cmd" with then press enter.

Under Mac OS X, go to Go→Applications→Utilities→Terminal

See below for reference.





Once in the command line interface (CLI) type "telnet", then the IP address of the unit and "23", then hit enter.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Administrator>telnet 192.168.5.80 23
```

This will bring us into the unit which we wish to control. Type "help" to list the available commands.

Note: Commands will not be executed unless followed by a carriage return. Commands are case-sensitive. If the IP is changed then the IP Address required for Telnet access will also change accordingly.

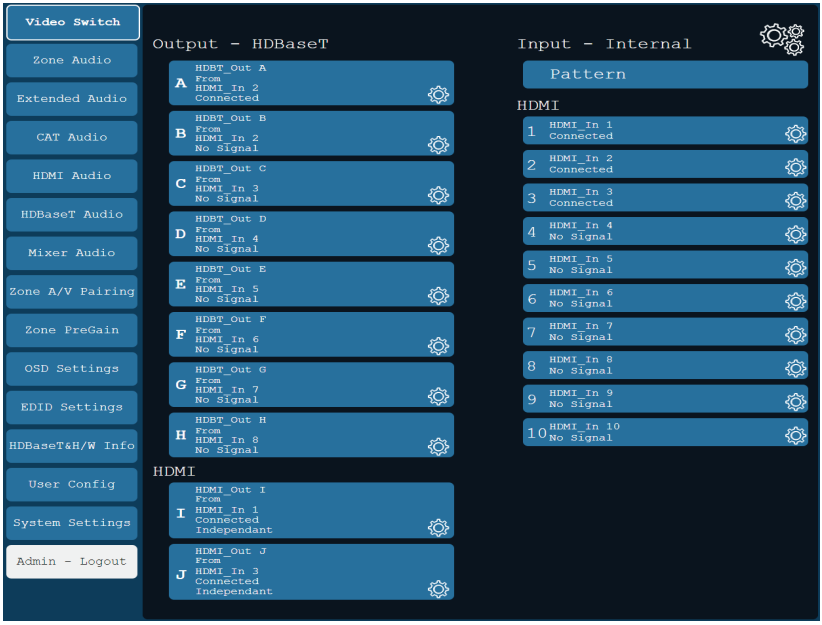
6.10.1 Video Switch

The page offers video routing, presets and test pattern settings.

Output and Input Routing:

To begin assigning a new video route, please click the button of the HDBaseT output you wish to send video to and then click on the button of the preferred HDMI input port or Pattern. If desired, you may select more than one output prior to selecting the input. As you select each button they will change their colour to orange. The new route will become active immediately and the routing information displayed on the buttons will change accordingly.

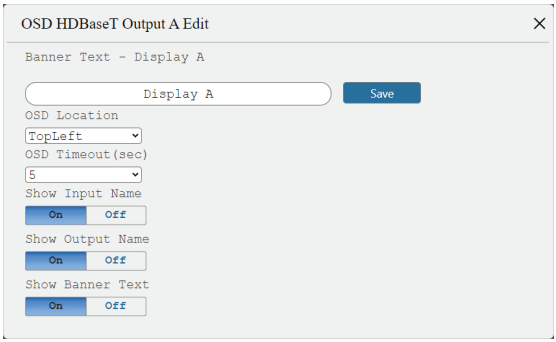
Note: If you need to route an input to multiple outputs, please select all of the appropriate output buttons before selecting the input port.

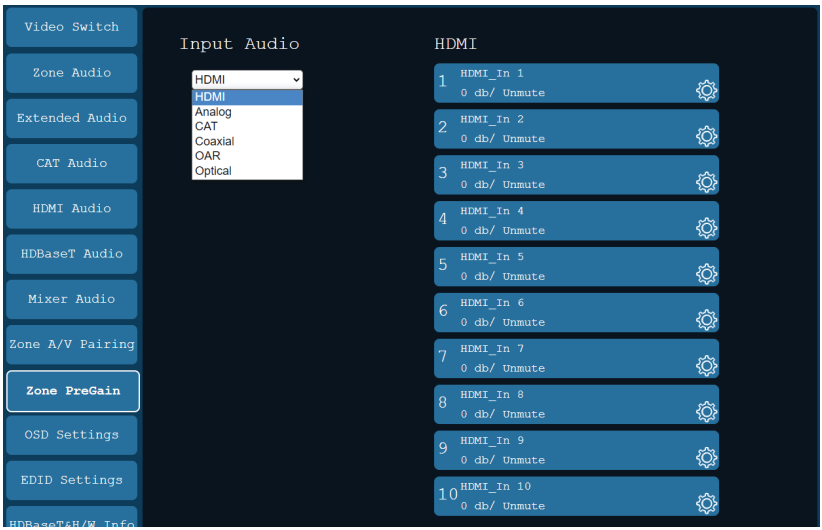


Output and Input Naming:

All inputs and outputs can be renamed as required. To rename the HDBaseT output ports and HDMI input ports please click the appropriate "Edit" icon (⚙). Click the "Save" button to confirm the name change.

Note: Blank spaces are not allowed in names.

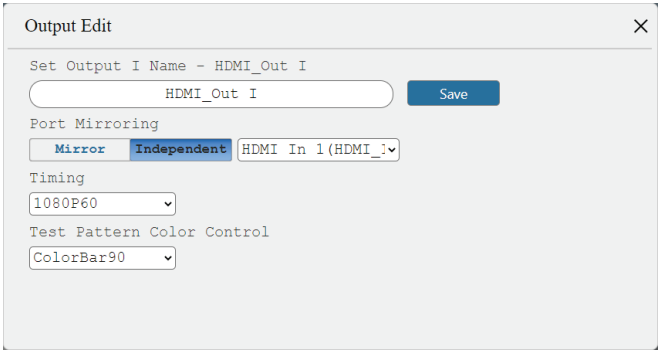




HDMI Output Setting:

The two HDMI outputs (Port I & Port J) can be used for normal source routing (listed as "Independent" within the WebGUI) and mirroring (listed as "Mirror" within the WebGUI) for local monitoring purposes or zone monitoring (e.g. The HDBaseT output connects to a TV in a remote zone the local HDMI connection goes into an AVR).

Click the "Edit" icon (⚙) to open a sub-window which allows changing the HDMI output mode between "Independent" and "Mirror". When an HDMI port is in "Mirror" mode, select the input to mirror using the dropdown to the right.Note: Only HDBaseT outputs may be selected as Mirror sources.

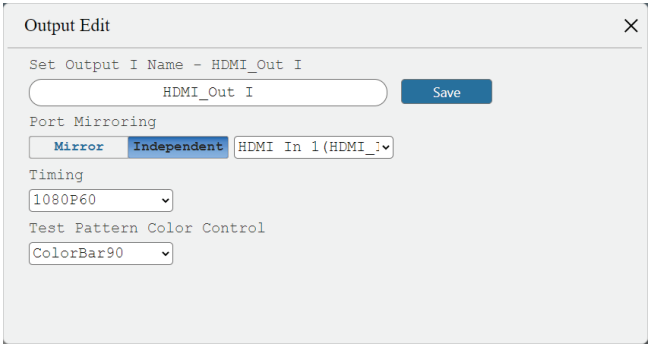


Internal Test Pattern:

This advanced matrix system comes with an internal test pattern generation feature which can be used to test connected sink device functionality or be used as a self-test. This is a useful tool for installation engineers to troubleshoot potential issues between the matrix and connected devices.

This can also be used as a video source for any connected "audio only" sources in cases where only a TV is available for audio reproduction and it requires an active video source in order for the audio to be heard.

Note: The test pattern is only active when the "Pattern" input is routed to the specified output.



(1) Timing: The test pattern could generate typical timings includes 720p50&60, 1080p50&60, 4k2k25&30. (Non-HDCP)

(2) Colour: The test pattern types can be changed; 15 pattern types are available to choose from.

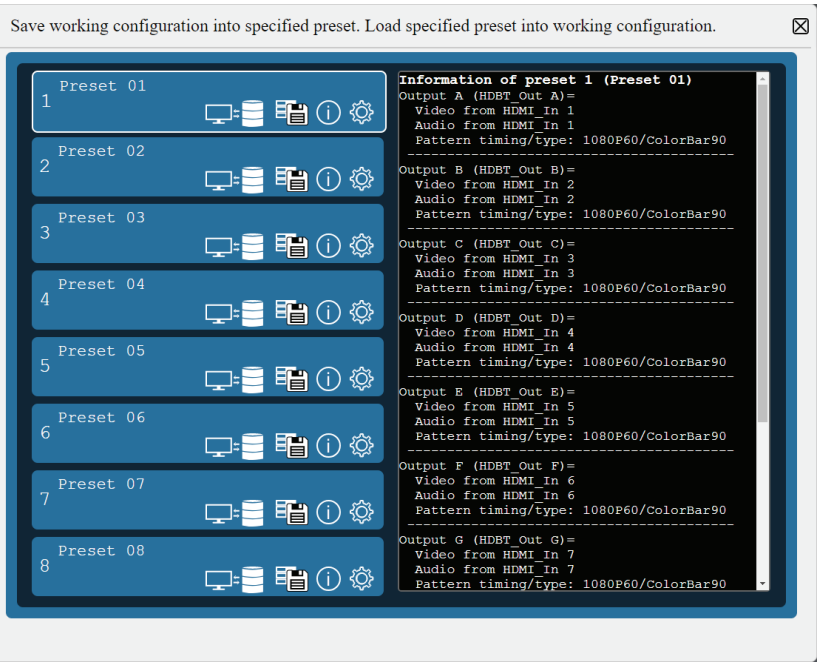
Note: Each output has its own pattern configuration which can be found under individual output edit window (⚙).

Preset Setting:

This matrix can store up to eight video and audio routing presets. Presets can be utilised to store multiple different routing states in advance for rapid, hassle-free, recall. To store, recall or view a preset, click the "Preset" icon ( ) in the upper right corner of the tab to open the Preset configuration window

- Save: Click the "Save" icon ( ) next to the preferred Preset to store the current matrix configuration into that preset. After updating the preset, the information box to the right will show the new routing details.
- Load: When you wish to load a previously stored setting, please click the "Load" icon ( ) associated with the Preset you wish to load. The Preset will load immediately upon clicking the icon
- Information: Click the "Information" icon ( ) next to the preferred Preset to view the current contents of the specified Preset in the information box to the right
- Rename: Click the "Edit" icon ( ) to open the rename sub-window. After entering a new name, click the "Save" button to confirm the name change.

Note: Blank spaces are not allowed in names.


Save working configuration into specified preset. Load specified preset into working configuration.
1 Preset 01
2 Preset 02
3 Preset 03
4 Preset 04
5 Preset 05
6 Preset 06
7 Preset 07
8 Preset 08
Information of preset 1 (Preset 01)
Output A (HDBT_Out A)=
Video from HDMI_In 1
Audio from HDMI_In 1
Pattern timing/type: 1080P60/ColorBar90
Output B (HDBT_Out B)=
Video from HDMI_In 2
Audio from HDMI_In 2
Pattern timing/type: 1080P60/ColorBar90
Output C (HDBT_Out C)=
Video from HDMI_In 3
Audio from HDMI_In 3
Pattern timing/type: 1080P60/ColorBar90
Output D (HDBT_Out D)=
Video from HDMI_In 4
Audio from HDMI_In 4
Pattern timing/type: 1080P60/ColorBar90
Output E (HDBT_Out E)=
Video from HDMI_In 5
Audio from HDMI_In 5
Pattern timing/type: 1080P60/ColorBar90
Output F (HDBT_Out F)=
Video from HDMI_In 6
Audio from HDMI_In 6
Pattern timing/type: 1080P60/ColorBar90
Output G (HDBT_Out G)=
Video from HDMI_In 7
Audio from HDMI_In 7
Pattern timing/type: 1080P60/ColorBar90

6.10.2 Zone Audio

This advanced matrix units offers video routing and complete audio routing functionality. The zone audio offers audio breakaway capability. The audio source setting, output volume, treble & bass range and audio delay are able to be set on this page.

Output and Input Routing:

Clicking the tabs from left to right to select and set the audio source, these includes, optical, coaxial, line, OAR, audio CAT, mixer and the audio from HDMI 1 to HDMI 10.

Audio Output Setting:

Click the edit icon(⚙) to invoke the settings window

(1) Rename: The zone audio outputs are able to be renamed here.

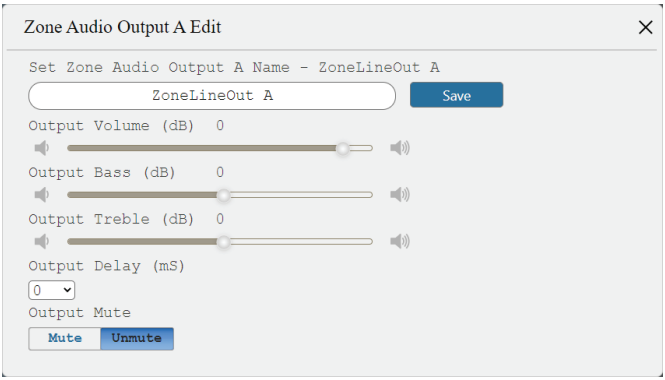
(2) Volume: The zone audio output volume is adjustable from 12dB to -100dB.

(3) Bass: The zone audio output bass is adjustable from -12dB to +12dB.

(4) Treble: The zone audio treble output is adjustable from -12dB to +12dB.

(5) Delay: The zone output delay is adjustable from 0 to 230ms.

(6) Mute: Select zone audio output mute or off (un-mute).


Zone Audio Output A Edit
Set Zone Audio Output A Name - ZoneLineOut A
ZoneLineOut A
Save
Output Volume (dB) 0
Output Bass (dB) 0
Output Treble (dB) 0
Output Delay (mS)
0
Output Mute
Mute
Unmute

6.10.3 Extended Audio

The four extended audio output offers flexibility on audio output extended requirement.

Output and Input Routing:

Clicking the tabs from left to right to select and set the audio source, these include optical, coaxial, line, OAR, audio CAT, mixer and the audio from HDMI 1 to HDMI 10..

Extended Audio Output Setting:

(1) Rename: The extended audio outputs are able to be renamed here. Click the icon to invoke the window for renaming.

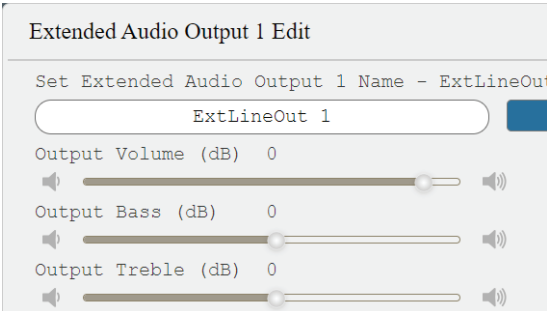
(2) Volume: The audio volume is adjustable from 12dB to -100dB.

(3) Bass: The audio bass is adjustable from -12dB to +12dB.

(4) Treble: The audio treble output is adjustable from -12dB to +12dB.

(5) Delay: The audio delay is adjustable from 0 to 230ms.

(6) Mute: Select audio output mute or off (un-mute).

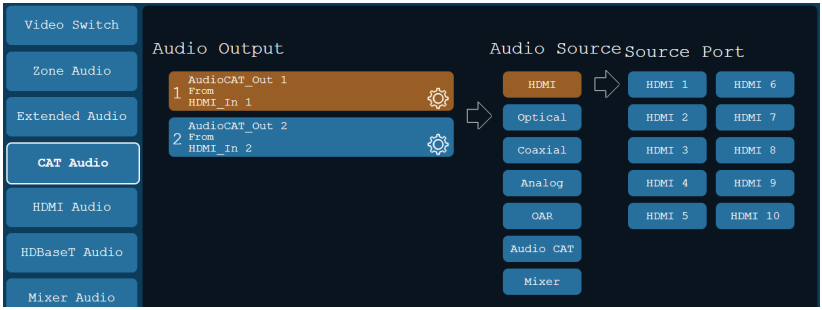


6.10.4 CAT Audio

With a compatible Receiver (PU-305BD-RX / PU-305BDA-RX / AU-A50) you can connect from the matrix by Cat5e/6 cable to send audio sources up to 300m. Any audio source including HDMI sources can be routed across this CAT cable, in addition sources can be routed back from the RX to the matrix. .

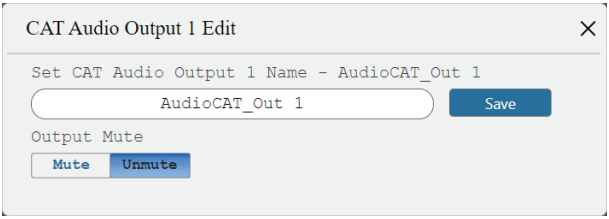
Output and Input Routing:

Clicking the tabs from left to right to selects and sets the audio source; these include optical, coaxial, line, OAR, audio CAT, mixer and the audio from HDMI 1 to HDMI 10.



CAT Audio Output Setting:

The audio-cat outputs are able to be renamed here. Click the icon to invoke the window for renaming.

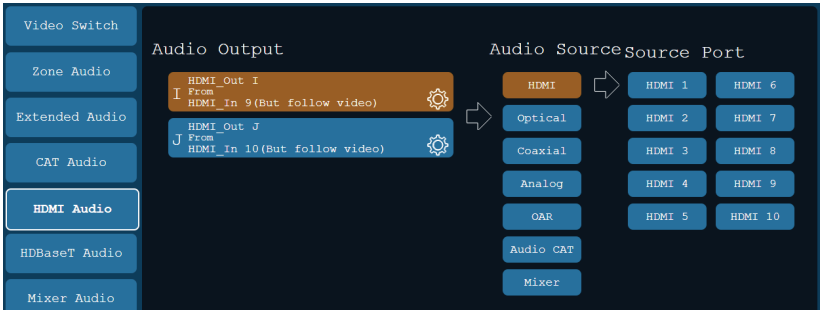


6.10.5 HDMI Audio

The audio received by the two HDMI outputs (port number: I & J) are able to be selected on this page.

Output and Input Routing:

Clicking the tabs from left to right to select and set the audio source, these include optical, coaxial, line, OAR, audio CAT, mixer and the audio from HDMI 1 to HDMI 10.

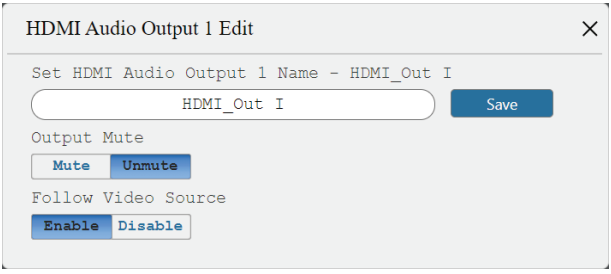


HDMI Audio Output Setting:

(1) Rename: The audio-HDMI outputs are able to be renamed here. Click the icon to invoke the window for renaming.

(2) Mute: Sliding the selection bar to corresponded status either on (mute) or off (unmute).

(3) Follow Video Source: Sliding the selection bar to corresponded status either enable (follow video source) or disable (not follow video source).

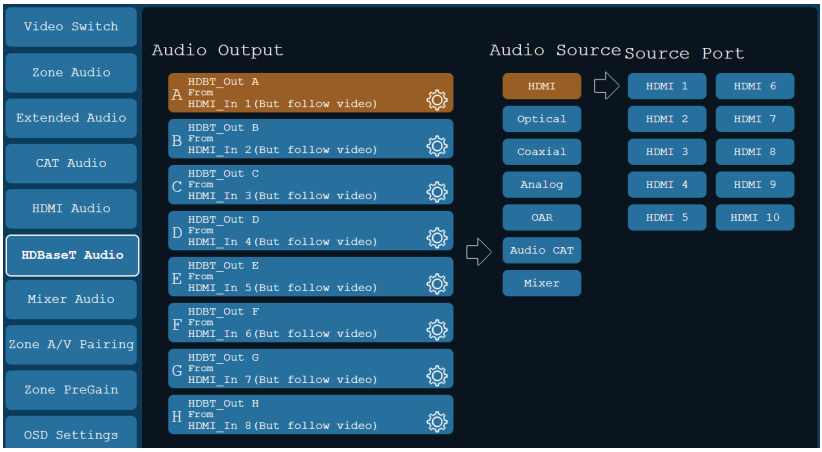


6.10.6 HDBaseT Audio

The audio received by the HDBaseT output can be selected on this page.

Output and Input Routing:

Clicking the tabs from left to right to select and set the audio source, these include optical, coaxial, line, OAR, audio CAT, mixer and the audio from HDMI 1 to HDMI 10.



HDBaseT Audio Output Setting:

(1) Rename: The audio-HDBaseT outputs are able to be renamed here. Click the icon to invoke the window for renaming.

(2) Mute: Sliding the selection bar to corresponded status either on (mute) or off (unmute).

(2) Follow Video Source: Sliding the selection bar to corresponded status either enable (follow video source) or disable (not follow video source).

6.10.7 Mixer Audio

The Audio Mixer enables any two audio sources to be mixed together; three mixers are available in total.

Output and Input Routing:

Clicking the tabs from left to right to select and set the audio source, these include optical, coaxial, line, OAR, audio CAT, mixer and the audio from HDMI 1 to HDMI 10.

Mixed Audio Output Setting:

The audio type and signal gain settings are found on this page

(1) Stereo: Sliding the selection bar to "Stereo" or "Mono".

(2) Gain: The signal gain could be adjusted from 0% to 100%.

6.10.8 Zone A/V Pairing

The easiest way to use the PUV-1082-4K22 for simple HDMI switching whilst still allowing for individually tailored zone audio is to use the Zone AV Pairing settings configured on this section of the webGUI.

As the IR remote supplied with the PUV-1082-4K22 sends AV pairing commands, if you wish to use this remote it is necessary to configure this page when any non-HDMI audio is required to be routed along with the corresponding video.

The video and audio routing selections for eight ports of HDBaseT output and two ports of HDMI output need to be set on this page in advance. After setting, the end customer can simply press the input number key on the remote control unit to change the input source from that zones location. When programming using Telnet/RS-232 installers can use the single AV Pairing command to recall both the audio and video settings set within the AV Pairing webGUI page.

(1) Quick Button Setting:

Please click the HDBaseT output port first and click the edition icon (⚙) to invoke the window for further setting. The numbers 1 to 10 are correspondence with number keys on remote control unit

(2) Video and Audio Setting:

Please click the icon (⚙) to edit the video and audio routing setting, please save the setting once complete selection.

6.10.9 Zone PreGain

Click the dropdown INPUT AUDIO selector and choose the desired audio input type. Once chosen all audio input from that input type can be seen to the right.

Please click the icon (⚙) to edit the PreGain level or mute/unmute that audio input channel.

6.10.10 OSD Settings

Please click the icon (⚙) for the chosen output to edit the OSD settings. You can now edit:

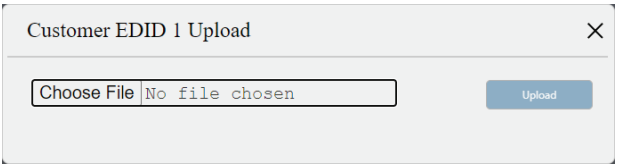
- Banner text
- OSD Location
- OSD timeout length
- Turn on and off the OSD for:
  - Input Name
  - Output Name
  - Banner text

6.10.11 EDID Settings

Customer EDID Settings:

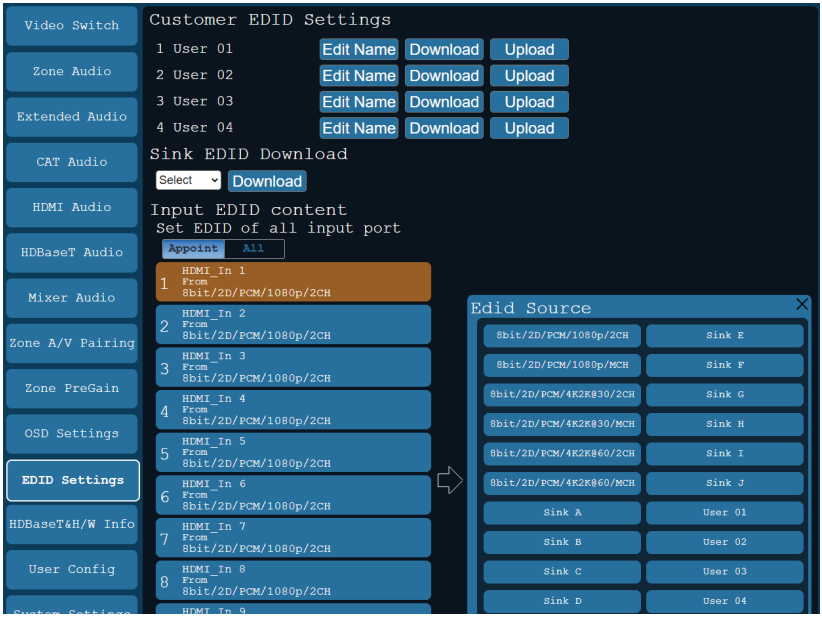
4 User EDID slots are available.

To Upload a bespoke EDID simply click the upload button and browse for the required EDID file and click upload. These can then be named and downloaded as required.



Sink EDID Download:

This great function allows the integrator to download and save any output's EDID, simply select the output and click download. These are then often edited and used to load into the 4 User EDID slots.



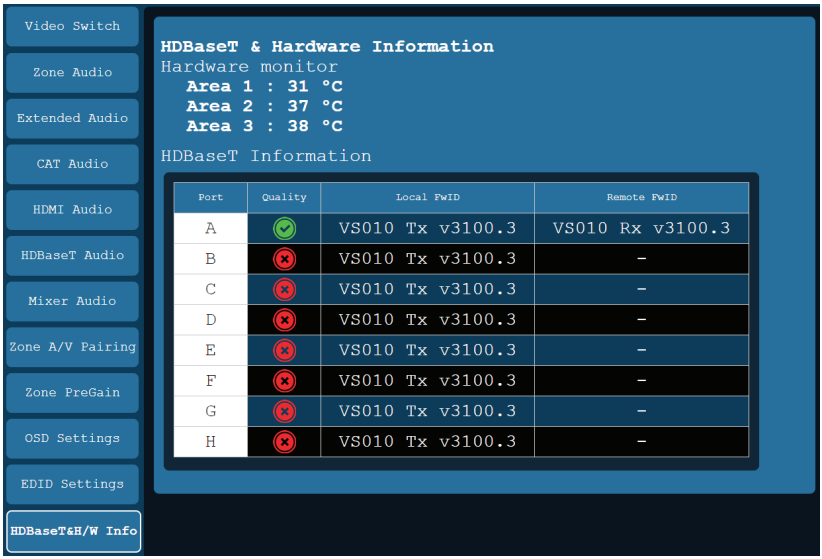
Set EDID Input Content:

The EDID management can be set in two ways. Each input can be set individually using the "Appoint" mode or all input can be set to one EDID file using the "All" mode. Use the slider to set to your required EDID mode.

The matrix can select from 6 EDID presets, 10 output based EDID pathways plus the 4 User EDID slots.

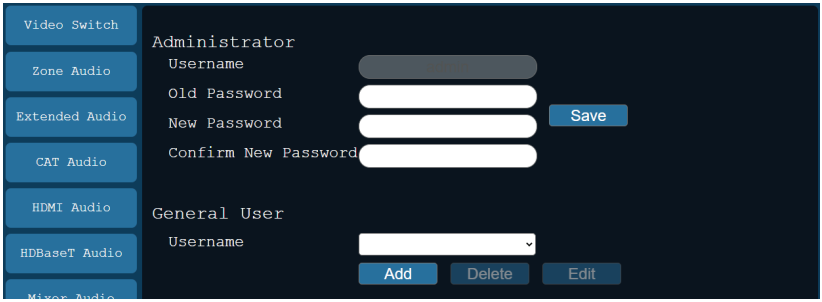
6.10.12 HDBaseT & H/W Info

This page provides information including hardware monitor (Area 1/2/3) and HDBaseT FW version. The hardware monitor provides reference temperature; Area 1 is for left side of output ports (faced to front panel), Area 2 temperature is for right side of output ports (faced to front panel) and Area 3 temperature is for the rear of the matrix.



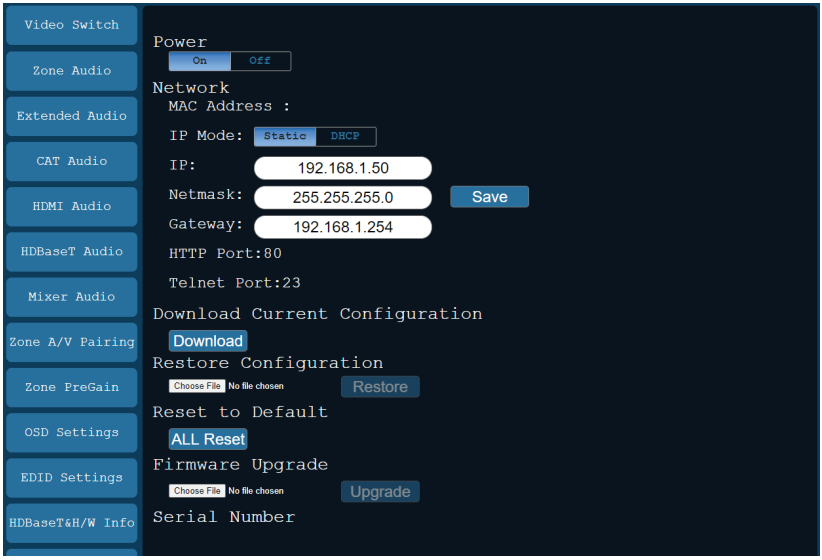
6.10.13 User Config

The Web and Telnet login user name and password allows to setting on this page. Two levels management are available, one is “administrator” and the other one is “general user”



6.10.14 System Settings

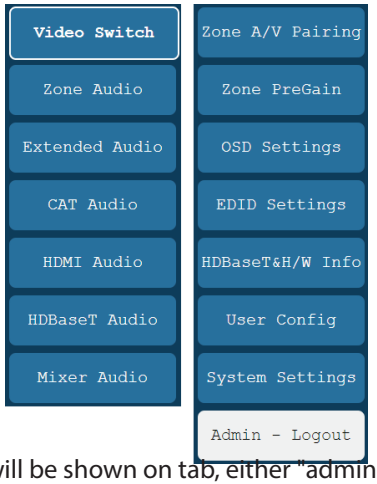
The system configuration includes power on/off, network setting, download & reset system configuration and reset to default allows to setting on this page.



Click the "Download" tab to download current system configuration. The current system configuration will be stored as XML file. The system configuration is able to be restore once selected the XML file and restore.

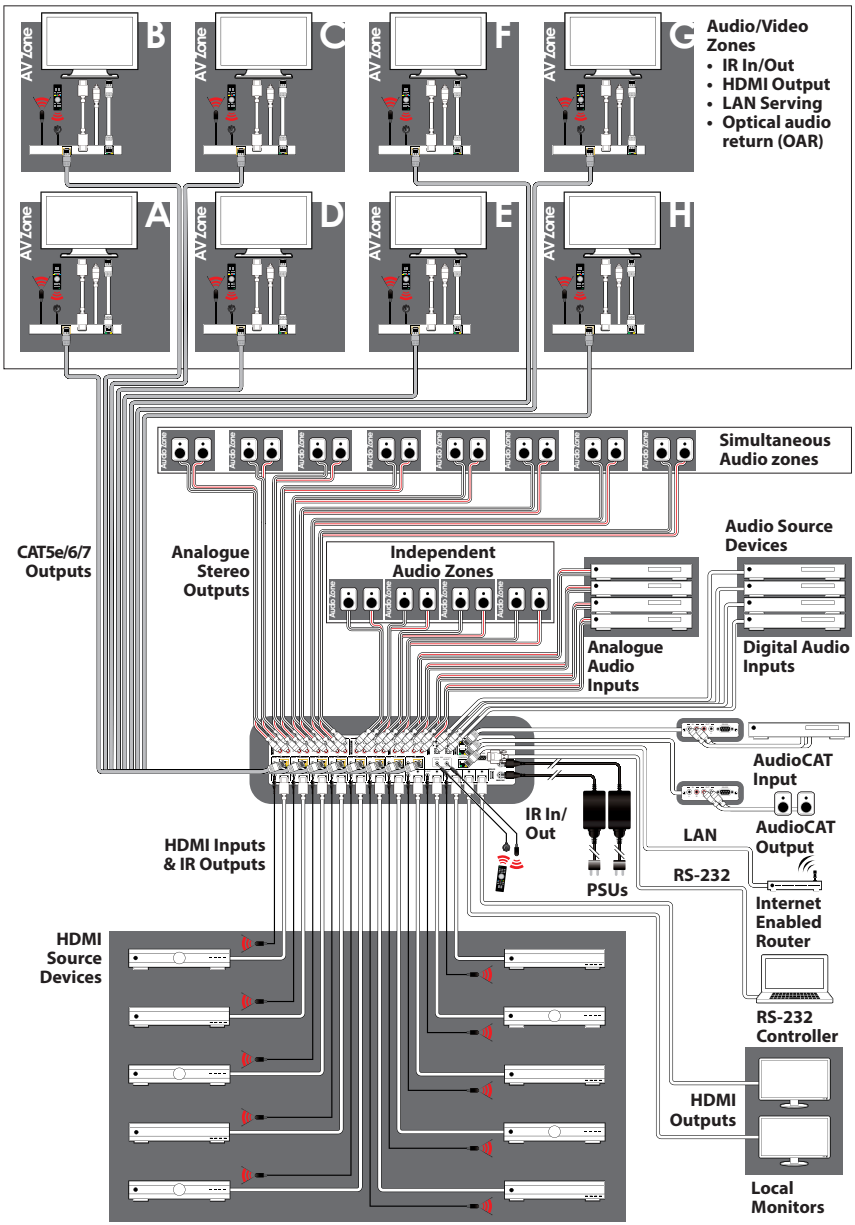
6.10.15 Logout

Click the logout tab at left side, this will automatically logout of the WebGUI and return to login page.



The log in identity will be shown on tab, either "admin" (administrator) or "user" (general user)

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

Video Bandwidth	HDMI: 600 MHz/18 Gbps HDBaseT: 340 MHz/10.2 Gbps
Input Ports	10×HDMI, 4×Stereo Audio (2×RCA), 2×Coaxial Audio, 2×Optical Audio, 2×CAT Audio (RJ45)
Output Ports	2×HDMI, 8×CAT5e/6, 12×Stereo Audio (2×RCA), 2×CAT Audio (RJ45)
Control Ports	9×IR Extender, 11×IR Blaster, 1×RS-232 (9-pin D-sub), 1×IP Control
Service Port	1×USB 2.0
HDMI Resolutions	480i~4K2K@50/60 Hz
Volume Adjustment	0dB to -100dB and adjust 0.5 dB per step (for both of zone and extended audio)
Treble/Bass Audio Control	Bass range: - 12dB to +12dB,1 dB per step adjustment Treble range: - 12dB to +12dB,1 dB per step adjustment
Audio Delay	230ms for line-out per channel, 1ms per step adjustment
Audio Mixer	Mixing any of two audio in one channel, three mixers totally. The mixer gain is adjustable from 0% ~ 100%.
EDID Management	Internal and external EDID management
IR Frequency	38 kHz
Baud Rate	115200 bps
Power Supply	24V / 6.25A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: ±8 kV (air-gap discharge) ±4 kV (contact discharge)
Dimensions	482 mm (W)×354 mm (D)×96 mm (H)/ Jack Included
Weight	6500 g
Chassis Material	Metal
Colour	Black
Operating Temperature	0˚C~40˚C/32˚F~104˚F
Storage Temperature	–20˚C~60˚C/–4˚F~140˚F
Relative Humidity	20~90% RH (non-condensing)
Power Consumption	175 W

8.2 Supported Video Formats

HDMI	Input	Output
480i@60	✓	✓
480p@60	✓	✓
576i@60	✓	✓
576p@60	✓	✓
640 x 480@60	✓	✓
800 x 600@60	✓	✓
720p@50/60	✓	✓
1080i@50/60	✓	✓
1080p@24/50/60	✓	✓
1024 x 768@60	✓	✓
1280 x 1024@60	✓	✓
1360 x 768@60	✓	✓
1600 x 1200@60	✓	✓
1920 x 1200@60	✓	✓
2560 x 1440@60	✓	✓
3840 x 2160@24/25/30/50/59.94/60	✓	✓
4096 x 2160@24/50/59.94/60	✓	✓
3840 x 2160@24-30 4:2:2 HDR	✓	✓
3840 x 2160@24-30 4:4:4 HDR	✓	✓*
3840 x 2160@50-60 4:4:4	✓	✓*

**NOTE: HDBaseT outputs are auto converted*

8.3 Maximum HDMI Cable Length

Timing	Input	Output
8 bit 1080p	10m	10m
12 bit 1080p	10m	10m
3840 x 2160p YUV420	5m	5m
3840 x 2160p YUV444 (Certified HDMI2.0 premium cable)	3m	3m

Note: Please see the table below for 4K 6G auto conversions.

Original video timing	Converted video timing
4K50-60Hz 4:4:4 8bit	4K50-60Hz 4:2:0 8bit
4K24-30Hz 4:4:4 10/12bit (HDR)	4K24-30Hz 4:4:4 8bit
4K50-60Hz 4:2:0 10/12bit (HDR)	4K50-60Hz 4:2:0 8bit

8.4 Supported Audio Formats

Linear PCM	
LPCM 2CH@44.1 kHz	LPCM 7.1CH@44.1 kHz
LPCM 2CH@88.2 kHz	LPCM 7.1CH@88.2 kHz
LPCM 2CH@176.4 kHz	LPCM 7.1CH@176.4 kHz
LPCM 2CH@32 kHz	LPCM 7.1CH@32 kHz
LPCM 2CH@48 kHz	LPCM 7.1CH@48 kHz
LPCM 2CH@96 kHz	LPCM 7.1CH@96 kHz
LPCM 2CH@192 kHz	LPCM 7.1CH@192 kHz
LPCM 5.1CH@44.1 kHz	
LPCM 5.1CH@88.2 kHz	
LPCM 5.1CH@176.4 kHz	
LPCM 5.1CH@32 kHz	
LPCM 5.1CH@48 kHz	
LPCM 5.1CH@96 kHz	
LPCM 5.1CH@192 kHz	

Dolby Digital	DTS
Dolby Atmos	DTS 5.1CH
Dolby Digital 5.1CH	DTS-HD High Resolution Audio
Dolby Digital Plus	DTS-HD Master Audio
Dolby TrueHD	

Note:
1. Audio break away functions support PCM format only.

2. The OAR, optical, coaxial, and audio CAT functions only support PCM.

8.5 HDBaseT Features

HDBaseT Feature	Support
HD Video & Audio	✓
IR	✓
RS-232	✓
Send power to Receiver*	✓
LAN	✓

**Compatible receivers only*

8.6 CAT5e/6/7 Cable Specifications

Length	Bandwidth	Data Rate	Supported Video
Up to 60 m	Up to 225 MHz	Up to 5.3 Gbps	**HD Video** Up to 1080p@60 Hz/36-bit, 3D (data rate lower than 5.3 Gbps or bandwidth below 225 MHz).
Up to 35 m	Greater than 225 MHz	Greater than 5.3 Gbps	**Ultra HD Video** Up to 4K2K@24/25/30 Hz Up to 4K2K@50/60 Hz (4:2:0).

9. ACRONYMS

ACRONYM	COMPLETE TERM
CAT5e	Category 5 Cable
CAT6	Category 6 Cable
CAT7	Category 7 Cable
CEC	Consumer Electronics Control
CLI	Command Line Interface
COAX	Coaxial
DTS	Digital Theater System
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
GUI	Graphical User Interface
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDTV	High-Definition Television
IP	Internet Protocol
IR	Infrared
LAN	Local Area Network
OLED	Organic Light-Emitting Diode
OPT	Optical
LCM	Liquid Crystal Module
PoH	Power over HDBaseT
USB	Universal Serial Bus
VGA	Video Graphics Array
WUXGA (RB)	Widescreen Ultra Extended Graphics Array (Reduce Blanking)

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