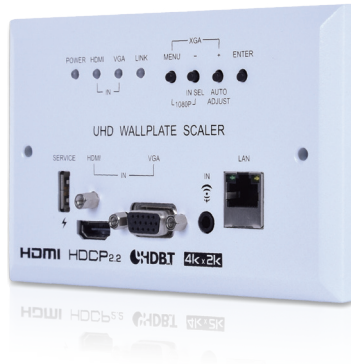# CYP

# CH-2538STXWPKD
## 4K UHD HDMI/VGA over HDBaseT Wallplate Scaler



HDMI® HDBT™

## Operation Manual

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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 |
|---|---|---|
| VS1 | 26/02/18 | Final technical review |

# CONTENTS

# 1. INTRODUCTION

This 4K UHD Wallplate Scaler is an HDMI/VGA switch with audio embedding and scaled HDBaseT output. The wall plate is designed for use with UK two-gang sized enclosures. This Transmitter can send high definition uncompressed audio/video along with Ethernet over a single cable up to a distance of 100 meters at 1080p@60Hz.

The HDMI input supports resolutions up to 4K@60Hz (4:4:4, 8-bit). The VGA input supports resolutions up to WUXGA (RB) and with the use of the associated 3.5mm audio input, stereo audio may be embedded as well. To provide maximum compatibility with a wide range of display types, all sources are scaled to a user-selected resolution and timing (up to 4K@30Hz) for transmission over HDBaseT.

This unit also supports automatic input selection between the HDMI and VGA inputs, with hot plug detection, enabling hands-free operation. Additionally, the unit may be powered locally or via 48V PoH (Power over HDBaseT) from a compatible HDBaseT Receiver, which allows for greater flexibility in installations. The unit is controllable via front panel controls with an OSD or RS-232 (via the RS-232 port on a compatible Receiver).

# 2. APPLICATIONS

- Household entertainment sharing and control
- Lecture halls, auditoriums and classroom
- Houses of worship
- Conference rooms and boardrooms
- Hotel event spaces

# 3. PACKAGE CONTENTS

- 1×HDMI/VGA over HDBaseT Wallplate Scaler
- 1×Operation Manual

# 4. SYSTEM REQUIREMENTS

- HDMI source equipment such as a media player, video game console or set-top box.
- HDMI receiving equipment such as an HDTV, monitor or audio amplifier.
- The use of industry standard Cat.6, Cat.6a or Cat.7 cable is highly recommended.
- The use of "Premium High Speed HDMI" cable is highly recommended.

# 5. FEATURES

- HDMI 2.0 and DVI 1.0 compatible
- HDCP 2.2 and HDCP 1.x compliant
- 1 HDMI input
- 1 VGA input with 3.5mm mini-jack audio input
- Supports HDMI input resolutions up to 4K@60Hz (4:4:4, 8-bit)
- Supports VGA input resolutions up to WUXGA (RB)
- Simultaneous transmission of uncompressed video, audio and data over a single 100m Cat.5e/6/7 cable at 1080p and 70m at 4K
- Scaled HDBaseT output supports resolutions up to 4K@30Hz (4:4:4, 8-bit)
- Automatic input selection with hot plug detection enabling hands-free operation
- Unit may be powered locally or via 48V PoH (PD) from a compatible HDBaseT Receiver (PSE)
- Wall plate is designed for UK two-gang sized enclosures
- Front panel LEDs indicate input selection, power and link status
- Controllable via front panel controls with an OSD or RS-232 (via the RS-232 port on a compatible Receiver)

*Note: The 48V PoH function is designed to receive power from compatible Receiver units only. PoH from other Receiver brands may not be compatible.*

# 6. OPERATION CONTROLS AND FUNCTIONS

## 6.1 Front Panel
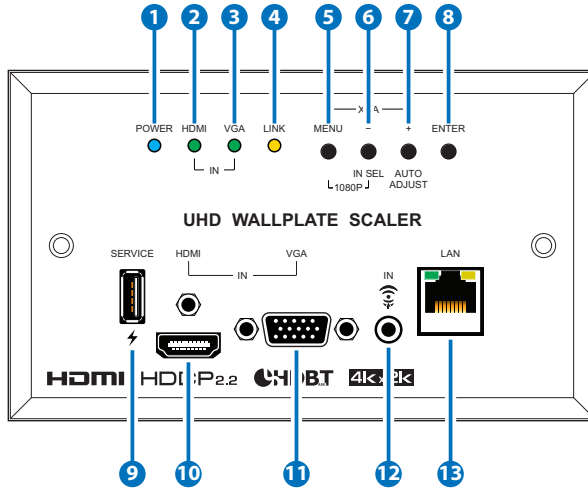


**1 POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.

**2 HDMI IN LED:** This LED will illuminate when HDMI is the selected source.

**3 VGA IN LED:** This LED will illuminate when VGA is the selected source.

**4 LINK LED:** This LED will illuminate when both Transmitter and Receiver are connected and communicating with each other properly.

**5 MENU:** Press to enter the OSD menu, or to back out from menu items.

**6 −/IN SEL:** Press to move down or adjust selections within OSD menus. When not in a menu press this button to switch between the available inputs. The LED will illuminate to indicate which source is currently selected.

**7 +/AUTO ADJUST:** Press to move up or adjust selections within OSD menus. When not in a menu press this button to optimize the positioning of the picture (VGA sources only).

**8 ENTER:** Press to confirm a selection within the OSD or to go deeper into a menu item.

**9 SERVICE:** This slot is reserved for firmware update use only.

**10 HDMI IN:** Connect to HDMI source equipment such as a media player, game console or set-top box.

**11 VGA IN:** Connect to VGA source equipment such as a PC or laptop.

**12 AUDIO IN:** Connect to the stereo analog output of a device such as a CD player or PC for embedding into the HDBaseT output.

**13 LAN:** Connect to an Ethernet supporting device or to your local network, as appropriate, to extend the network to both ends of the HDBaseT connection.

## 6.2 Rear Panel
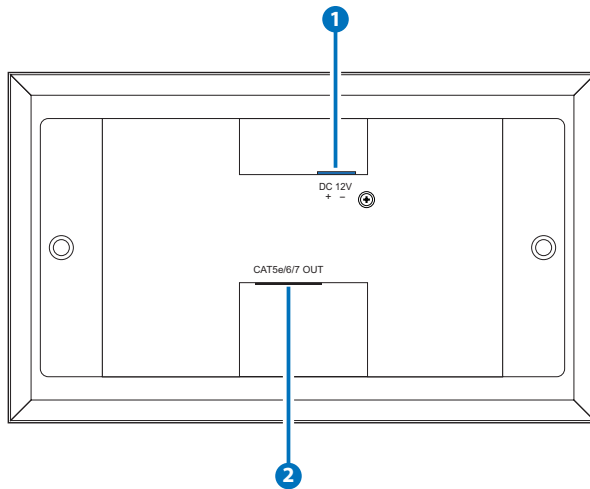


**1 DC 12V:** Connect a 12V DC power adapter to the twin terminal block and connect it to an AC wall outlet for power. (Optional, not required when powered by PoH from the Receiver.)

**2 CAT5e/6/7 OUT:** Connect to the Receiver unit with a single Cat.5e/6/7 cable for transmission of all data signals.

## 6.3 OSD Menu

| LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 |
|---------|---------|---------|---------|
| Video | Video | **HDMI** | |
| | | PC | |
| | Output | **NATIVE** | |
| | | 640×480@60 | |
| | | 800×600@60 | |
| | | 1024×768@60 | |
| | | 1280×720@60 | |
| | | 1280×768@60 | |
| | | 1280×800@60 | |
| | | 1280×1024@60 | |
| | | 1360×768@60 | |
| | | 1440×900@60 | |
| | | 1400×1050@60 | |
| | | 1600×1200@60 | |
| | | 1680×1050@60 | |
| | | 1920×1080@60 | |
| | | 1920×1200@60RB | |
| | | 2048×1080@50 | |
| | | 2048×1080@60 | |
| | | 2560×1440@60RB | |
| | | 2560×1600@60RB | |
| | | 720×480p@60 | |
| | | 720×576p@60 | |
| | | 1280×720p@50 | |
| | | 1280×720p@60 | |
| | | 1920×1080p@24 | |
| | | 1920×1080p@25 | |
| | | 1920×1080p@30 | |

| LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 |
|---------|---------|---------|---------|
| Video | Output | 1920×1080p@50 | |
| | | 1920×1080p@60 | |
| | | 2560×1080p@50 | |
| | | 2560×1080p@60 | |
| | | 3840×2160p@24 | |
| | | 3840×2169p@25 | |
| | | 3840×2160p@30 | |
| | | 4096×2160p@24 | |
| | | 4096×2160p@25 | |
| | | 4096×2160p@30 | |
| | Aspect | **Full** | |
| | | Best Fit | |
| | | Pan Scan | |
| | | Letterbox | |
| | | Under 2 | |
| | | Under 1 | |
| | | Follow In | |
| | | Overscan | |
| | HDMI HDCP | HDCP Support Off | |
| | | Refer to Source | |
| | | **Refer to Display** | |
| | No Signal Color | **Black** | |
| | | White | |
| | | Blue | |
| | | Red | |
| | | Green | |
| | Blank | **Off** | |
| | | On | |
| | Freeze | **Off** | |
| | | On | |

| LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 |
|---------|---------|---------|---------|
| Video | Auto Setup | Auto Sync Off | **Off** |
| | | | 30 Seconds |
| | | | 60 Seconds |
| | | | 3 Minutes |
| | | | 5 Minutes |
| | | | 10 Minutes |
| | | Auto Switch | Off |
| | | | **On** |
| | PC Setup | PC Auto Setup | [Current Status] |
| | | PC H Position | 0 ~ 250 |
| | | PC V Position | 0 ~ 250 |
| | | PC Phase | 0 ~ 255 |
| | | PC Clock | 0 ~ 250 **(125)** |
| | | PC Reset | |
| Picture | Color Gain R | 0 ~ 1023 **(512)** | |
| | Color Gain G | 0 ~ 1023 **(512)** | |
| | Color Gain B | 0 ~ 1023 **(512)** | |
| | Color Offset R | 0 ~ 1023 **(512)** | |
| | Color Offset G | 0 ~ 1023 **(512)** | |
| | Color Offset B | 0 ~ 1023 **(512)** | |
| | Brightness | 0 ~ 60 **(30)** | |
| | Contrast | 0 ~ 60 **(30)** | |
| | Hue | 0 ~ 60 **(30)** | |
| | Saturation | 0 ~ 60 **(30)** | |
| | Sharpness | 0 ~ 63 **(0)** | |
| | NR | **Off** | |
| | | Low | |
| | | Middle | |
| | | High | |
| | | Auto | |

| LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 |
|---------|---------|---------|---------|
| Picture | Reset Picture | | |
| Audio | Audio | **Follow Video** | |
| | | Line In | |
| | Volume | 0 ~ 100 **(80)** | |
| | Audio Mute | **Off** | |
| | | On | |
| | Reset Audio | | |
| OSD | H Position | 0 ~ 60 **(30)** | |
| | V Position | 0 ~ 60 **(30)** | |
| | Timer | **Off** | |
| | | 5 SEC | |
| | | 10 SEC | |
| | | 15 SEC | |
| | | 20 SEC | |
| | | 25 SEC | |
| | | 30 SEC | |
| | | 35 SEC | |
| | | 40 SEC | |
| | Transparent | 0 ~ 50 **(50)** | |
| | Display | Off | |
| | | On | |
| | | 5S | |
| | | **10S** | |
| | Reset OSD | | |
| EDID | HDMI EDID | INT 1080P (2CH) | |
| | | INT 4K (3G-2CH) | |
| | | INT 4K (6G-2CH) | |
| | | **Output** | |
| | EDID Status | [Current Status] | |

| LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 |
|---------|---------|---------|---------|
| RS-232 Control | Control Baudrate | 4800 | |
| | | 9600 | |
| | | **19200** | |
| | | 38400 | |
| | | 57600 | |
| | | 115200 | |
| | Control Stop Bits | **1 Bit** | |
| | | 2 Bit | |
| | Control Data Bits | 5 Bit | |
| | | 6 Bit | |
| | | 7 Bit | |
| | | **8 Bit** | |
| | Control Parity | **None** | |
| | | Odd | |
| | | Even | |
| Reset | All Reset | | |
| Information | [System Information Display] | | |

*Note: Values in **bold** or **( )** are factory default settings.*

## 6.4 RS-232 Commands

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **HELP**↵ | |
| Show the full command list. | |
| **?**↵ | |
| Show the full command list. | |
| **GET FW VER**↵ | |
| Show the unit's firmware version. | |
| **GET MODEL NAME**↵ | |
| Show the unit's model name. | |
| **SET OUT A ROUTE N1**↵ | |
| Select the input source. | Available values for **N1**:<br>1          [HDMI]<br>2          [VGA] |
| **GET OUT A ROUTE**↵ | |
| Show the current input source. | |
| **SET OUT AUTO MODE N1**↵ | |
| Set the auto source select mode. | Available values for **N1**:<br>0          [Off]<br>1          [Auto Switch] |
| **GET OUT AUTO MODE**↵ | |
| Show the current auto source select mode. | |
| **GET OUT AUTO MODE LIST**↵ | |
| List all available auto source modes. | |
| **GET IN N1 TIMING**↵ | |
| Show the video timing of the source connected to input N1. | Available values for **N1**:<br>1          [HDMI]<br>2          [VGA] |

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **GET IN TYPE LIST**↵ | |
| List all available input types. | |
| **SET OUT A MASK N1**↵ | |
| Blank the video output (video masking). | Available values for **N1**:<br>ON [Blank video]<br>OFF [Enable video] |
| **GET OUT A MASK**↵ | |
| Show the current video masking state. | |
| **SET OUT A TIMING N1**↵ | |
| Set the scaler's output timing. | Available values for **N1**:<br>0 [Native]<br>1 [640×480@60]<br>2 [800×600@60]<br>3 [1024×768@60]<br>4 [1280×720@60]<br>5 [1280×768@60]<br>6 [1280×800@60]<br>7 [1280×1024@60]<br>8 [1360×768@60]<br>9 [1440×900@60]<br>10 [1400×1050@60]<br>11 [1600×1200@60]<br>12 [1680×1050@60]<br>13 [1920×1080@60]<br>14 [1920×1200@60RB]<br>15 [2048×1080@50]<br>16 [2048×1080@60]<br>17 [2560×1440@60RB]<br>18 [2560×1600@60RB]<br>19 [720×480p@60]<br>20 [720×576p@60]<br>21 [1280×720p@50]<br>22 [1280×720p@60]<br>23 [1920×1080p@24] |

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| | 24           [1920×1080p@25] |
| | 25           [1920×1080p@30] |
| | 26           [1920×1080p@50] |
| | 27           [1920×1080p@60] |
| | 28           [2560×1080p@50] |
| | 29           [2560×1080p@60] |
| | 30           [3840×2160p@24] |
| | 31           [3840×2169p@25] |
| | 32           [3840×2160p@30] |
| | 33           [4096×2160p@24] |
| | 34           [4096×2160p@25] |
| | 35           [4096×2160p@30] |
| **GET OUT A TIMIING**↵ | |
| Show the scaler's current output timing. | |
| **GET OUT A SYNC STATUS**↵ | |
| Show the current status of the connected display. | |
| **GET OUT TIMING LIST**↵ | |
| List all available output timings. | |
| **SET OUT A CONTRAST N1**↵ | |
| Set the contrast of the scaled output. | **N1** = 0 ~ 60     [Contrast] |
| **GET OUT A CONTRAST**↵ | |
| Show the current contrast setting. | |
| **SET OUT A BRIGHTNESS N1**↵ | |
| Set the brightness of the scaled output. | **N1** = 0 ~ 60     [Brightness] |
| **GET OUT A BRIGHTNESS**↵ | |
| Show the current brightness setting. | |

| COMMAND | |
| --- | --- |
| **DESCRIPTION** | **PARAMETERS** |
| **SET OUT A SATURATION N1**↵ | |
| Set the saturation of the scaled output. | **N1** = 0 ~ 60     [Saturation] |
| **GET OUT A SATURATION**↵ | |
| Show the current saturation setting. | |
| **SET OUT A HUE N1**↵ | |
| Set the hue of the scaled output. | **N1** = 0 ~ 60     [Hue] |
| **GET OUT A HUE**↵ | |
| Show the current hue setting. | |
| **SET OUT A SHARPNESS N1**↵ | |
| Set the sharpness of the scaled output. | **N1** = 0 ~ 63     [Sharpness] |
| **GET OUT A SHARPNESS**↵ | |
| Show the current sharpness setting. | |
| **SET OUT A NR N1**↵ | |
| Set the noise reduction level of the scaled output. | Available values for **N1**:<br>0            [Off]<br>1            [Low]<br>2            [Middle]<br>3            [High]<br>4            [Auto] |
| **GET OUT A NR**↵ | |
| Show the current noise reduction setting. | |

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **SET OUT A ASPECT RATIO N1**↵ | |
| Set the aspect ratio of the scaled output. | Available values for **N1**:<br>0           [Overscan]<br>1           [Full]<br>2           [Best Fit]<br>3           [Pan Scan]<br>4           [Letterbox]<br>5           [Under 2]<br>6           [Under 1]<br>7           [Follow In] |
| **GET OUT A ASPECT RATIO**↵ | |
| Show the current output ratio of the scaled output. | |
| **GET OUT ASPECT RATIO LIST**↵ | |
| List all available output ratio settings. | |
| **SET OUT A AUTO SYNC OFF N1**↵ | |
| Set the auto sync off timeout. | Available values for **N1**:<br>0           [Disabled]<br>1           [30 Seconds]<br>2           [60 Seconds]<br>3           [3 Minutes]<br>4           [5 Minutes]<br>5           [10 Minutes] |
| **GET OUT A AUTO SYNC OFF**↵ | |
| Show the current auto sync off timeout setting. | |
| **SET OUT A R GAIN N1**↵ | |
| Set the red gain level of the scaled output. | **N1** = 0 ~ 1023   [Red Gain] |
| **GET OUT A R GAIN**↵ | |
| Show the current red gain level. | |

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **SET OUT A G GAIN N1**↵ | |
| Set the green gain level of the scaled output. | **N1** = 0 ~ 1023  [Green Gain] |
| **GET OUT A G GAIN**↵ | |
| Show the current red gain level. | |
| **SET OUT A B GAIN N1**↵ | |
| Set the blue gain level of the scaled output. | **N1** = 0 ~ 1023  [Blue Gain] |
| **GET OUT A B GAIN**↵ | |
| Show the current red gain level. | |
| **SET IN 2 PHASE N1**↵ | |
| Set the PC input phase. | **N1** = 0 ~ 255   [PC Phase] |
| **GET IN 2 PHASE**↵ | |
| Show the current PC input phase. | |
| **SET IN 2 CLOCK N1**↵ | |
| Set the PC input clock. | **N1** = 0 ~ 250   [PC Clock] |
| **GET IN 2 CLOCK**↵ | |
| Show the current PC input clock. | |
| **SET IN 2 HPOSITION N1**↵ | |
| Set the PC input horizontal position. | **N1** = 0 ~ 250   [PC H Position] |
| **GET IN 2 HPOSITION**↵ | |
| Show the current PC input clock. | |
| **SET IN 2 VPOSITION N1**↵ | |
| Set the PC input vertical position. | **N1** = 0 ~ 250   [PC V Position] |

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **GET IN 2 VPOSITION**↵ | |
| Show the current PC input clock. | |
| **SET AUDIO OUT A ROUTE N1**↵ | |
| Select the audio source. | Available values for **N1**:<br>1          [Follow Video]<br>2          [Analog Audio] |
| **GET AUDIO OUT A ROUTE**↵ | |
| Show the currently selected audio source. | |
| **GET AUDIO IN TYPE LIST**↵ | |
| List all available audio sources. | |
| **SET AUDIO OUT A MUTE N1**↵ | |
| Enable of disable the audio mute function. | Available values for **N1**:<br>ON      [Mute Enabled]<br>OFF     [Mute Disabled] |
| **GET AUDIO OUT A MUTE**↵ | |
| Show the current audio mute state. | |
| **SET AUDIO OUT A VOLUME N1**↵ | |
| Set the audio output volume level. | **N1** = 0 ~ 100   [Volume] |
| **GET AUDIO OUT A VOLUME**↵ | |
| Show the current audio output volume level. | |

![CYP logo]

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **SET OUT A OSD TIMEOUT N1**↵ | |
| Set the OSD timeout length. | Available values for **N1**:<br>0       [Off]<br>1       [5 Seconds]<br>2       [10 Seconds]<br>3       [15 Seconds]<br>4       [20 Seconds]<br>5       [25 Seconds]<br>6       [30 Seconds]<br>7       [35 Seconds]<br>8       [40 Seconds] |
| **GET OUT A OSD TIMEOUT**↵ | |
| Show the current OSD timeout length. | |
| **SET OUT A OSD INFO DISPLAY N1**↵ | |
| Set the OSD Information Display timeout length. | Available values for **N1**:<br>0       [Always Off]<br>1       [Always On]<br>2       [5 Seconds]<br>3       [10 Seconds] |
| **GET OUT A OSD INFO DISPLAY**↵ | |
| Show the current OSD Information Display timeout length. | |
| **SET OUT A OSD VPOSITION N1**↵ | |
| Set the OSD vertical position. | **N1** = 0 ~ 60    [V Position] |
| **GET OUT A OSD VPOSITION**↵ | |
| Show the OSD's current vertical position. | |
| **SET OUT A OSD HPOSITION N1**↵ | |
| Set the OSD horizontal position. | **N1** = 0 ~ 60    [H Position] |
| **GET OUT A OSD HPOSITION**↵ | |
| Show the OSD's current horizontal position. | |

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **SET OUT A OSD TRANSPARENCY N1**↵ | |
| Set the transparency level for the OSD. | **N1** = 0 ~ 50    [Transparency] |
| **GET OUT A OSD TRANSPARENCY**↵ | |
| Show the OSD's current transparency level. | |
| **SET IN 1 HDCP MODE N1**↵ | |
| Set the HDCP mode for the HDMI input. | Available values for **N1**:<br>0            [Disable HDCP]<br>1            [Follow Source]<br>2            [Follow Display] |
| **GET IN 1 HDCP MODE**↵ | |
| Show the current HDCP mode for the HDMI input. | |
| **GET OUT A HDCP STATUS**↵ | |
| Show the current HDCP mode of the HDMI output. | |
| **SET UART 1 BAUDRATE N1**↵ | |
| Set the unit's RS-232 baud rate. | Available values for **N1**:<br>0            [4800]<br>1            [9600]<br>2            [19200]<br>3            [38400]<br>4            [57600]<br>5            [115200] |
| **GET UART 1 BAUDRATE**↵ | |
| Show the current RS-232 baud rate. | |
| **SET UART 1 STOP BITS N1**↵ | |
| Set the number of stop bits for RS-232. | Available values for **N1**:<br>0            [1 Bit]<br>1            [2 Bits] |

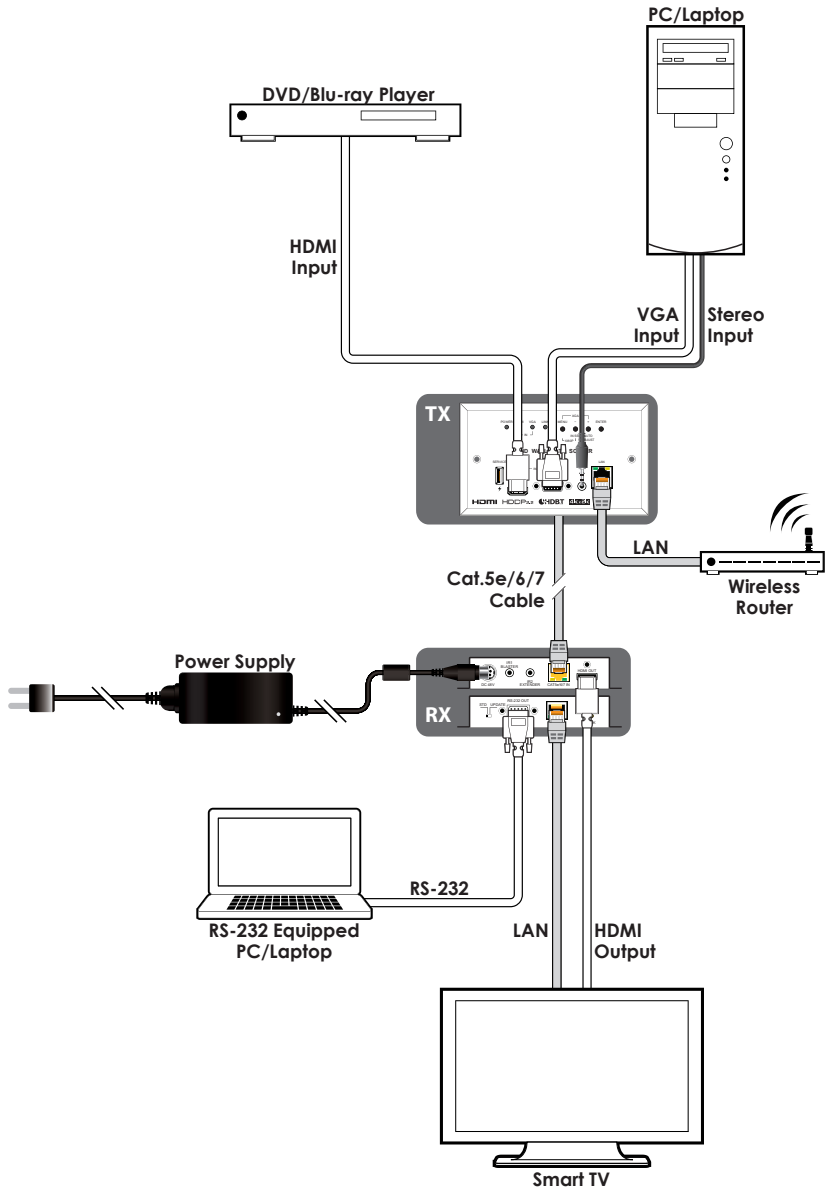| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **GET UART 1 STOP BITS**↵ | |
| Show the current RS-232 stop bits setting. | |
| **SET UART 1 DATA BITS N1**↵ | |
| Set the number of data bits for RS-232. | Available values for **N1**:<br>0　　　　　　[5 Bits]<br>1　　　　　　[6 Bits]<br>2　　　　　　[7 Bits]<br>3　　　　　　[8 Bits] |
| **GET UART 1 DATA BITS**↵ | |
| Show the current RS-232 data bits setting. | |
| **SET UART 1 PARITY N1**↵ | |
| Set the parity for RS-232. | Available values for **N1**:<br>0　　　　　　[None]<br>1　　　　　　[Odd]<br>2　　　　　　[Even] |
| **GET UART 1 PARITY**↵ | |
| Show the current RS-232 parity setting. | |
| **SET OUT A AUTOMATION N1 MODE N2**↵ | |
| Enable or disable each automated action slot. | **N1** = 1 ~ 8　　[Slot Number]<br>Available values for **N2**:<br>ON　　　　　　[Enable]<br>OFF　　　　　[Disable] |
| **GET OUT A AUTOMATION N1 MODE**↵ | |
| Show the current state of automated action slot N1. | **N1** = 1 ~ 8　　[Slot Number] |
| **SET OUT A AUTOMATION N1 COMMAND N2**↵ | |
| Set the RS-232 string to send when automated action N1 is activated. | **N1** = 1 ~ 8　　[Slot Number]<br>**N2** = {string}　[64 Chars Max] |

| COMMAND | |
| --- | --- |
| **DESCRIPTION** | **PARAMETERS** |
| **GET OUT A AUTOMATION N1 COMMAND↵** | |
| Show the current RS-232 command string assigned to slot N1. | **N1** = 1 ~ 8     [Slot Number] |
| **SET OUT A AUTOMATION N1 EVENT N2↵** | |
| Set the event that will activate automated action slot N1. | **N1** = 1 ~ 8     [Slot Number] <br><br> Available values for **N2**: <br> 1           [All Signal Loss] <br> 2           [Live Source Plug In] <br> 3           [Signal Loss] <br> 4           [Signal Lock] |
| **GET OUT A AUTOMATION N1 EVENT↵** | |
| Show the event currently assigned to automated action slot N1. | **N1** = 1 ~ 8     [Slot Number] |
| **SET OUT A AUTOMATION N1 TRIGGER DELAY N2↵** | |
| Set the amount of time to delay before activating the automated action after the event's condition is met. | **N1** = 1 ~ 8     [Slot Number] <br> **N2** = 0 ~ 300     [Delay Seconds] |
| **GET OUT A AUTOMATION N1 TRIGGER DELAY↵** | |
| Show the current delay time assigned to automated action slot N1. | **N1** = 1 ~ 8     [Slot Number] |
| **GET TRIGGER EVENT LIST↵** | |
| List all available Trigger Events. | |
| **SET IN 1 EDID N1↵** | |
| Set the EDID to use with the HDMI input. | Available values for **N1**: <br> 1           [1080P, 2CH] <br> 2           [4K (3G), 2CH] <br> 3           [4K (6G), 2CH] <br> 4           [Output's EDID] |

| COMMAND | |
|---|---|
| **DESCRIPTION** | **PARAMETERS** |
| **GET IN 1 EDID↵** | |
| Show the currently selected EDID source for the HDMI input. | |
| **GET IN EDID LIST↵** | |
| List all available EDID sources. | |

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

# 7. CONNECTION DIAGRAM



PC/Laptop

DVD/Blu-ray Player

HDMI Input

VGA Input

Stereo Input

TX

HDMI HDCP1.4 HDBT

LAN

Cat.5e/6/7 Cable

Wireless Router

Power Supply

RX

RS-232

RS-232 Equipped PC/Laptop

LAN

HDMI Output

Smart TV

# 8. SPECIFICATIONS

## 8.1 Technical Specifications

| | |
|---|---|
| **HDMI Bandwidth** | 600MHz/18Gbps |
| **HDBaseT Bandwidth** | 340Hz/10.2Gbps |
| **Input Ports** | 1×HDMI |
| | 1×VGA |
| | 1×3.5mm (Stereo Audio) |
| **Output Port** | 1×Cat.5e/6/7 |
| **Pass-through Port** | 1×LAN [RJ-45] |
| **Power Supply** | 12V/3A DC (US/EU standards, CE/FCC/ UL certified) |
| **ESD Protection** | Human Body Model: |
| | ±12kV (Air Discharge) |
| | ±8kV (Contact Discharge) |
| **Dimensions** | 147mm×87.5mm×41.5mm (W×H×D) [Case Only] |
| | 147mm×87.5mm×46.6m (W×H×D) [All Inclusive] |
| **Weight** | 250g |
| **Chassis Material** | Metal |
| **Silkscreen Color** | White |
| **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** | 26.4W |

## 8.2 Video Specifications

| Supported PC Resolutions (Hz) | | Input | | Output |
|---|---|:---:|:---:|:---:|
| | | HDMI | VGA | HDMI via HDBaseT |
| 640×480 | 60, 72, 75, 85 | ✓ | ✓ | 60 |
| 720×400 | 85 | ✓ | ✓ | |
| 800×600 | 56, 60, 72, 75, 85 | ✓ | ✓ | 60 |
| 1024×768 | 60, 70, 75, 85 | ✓ | ✓ | 60 |
| 1152×864 | 75 | ✓ | ✓ | |
| 1280×720 | 60 | ✓ | ✓ | ✓ |
| 1280×768 | 60, 75, 85 | ✓ | ✓ | 60 |
| 1280×800 | 60 | ✓ | ✓ | ✓ |
| 1280×960 | 60 | ✓ | ✓ | |
| 1280×1024 | 60 | ✓ | ✓ | ✓ |
| 1360×768 | 60 | ✓ | ✓ | ✓ |
| 1366×768 | 60 | ✓ | ✓ | |
| 1400×1050 | 60 | ✓ | ✓ | ✓ |
| 1440×900 | 60 | ✓ | ✓ | ✓ |
| 1600×1200 | 60 | ✓ | ✓ | ✓ |
| 1680×1050 | 60 | ✓ | ✓ | ✓ |
| 1920×1080 | 60 | ✓ | ✓ | ✓ |
| 1920×1200 | 60 (RB) | ✓ | ✓ | ✓ |
| 1920×1440 | 60 | ✓ | | ✓ |
| 2048×1080 | 50, 60 | ✓ | | ✓ |
| 2560×1440 | 60 (RB) | ✓ | | ✓ |
| 2560×1600 | 60 (RB) | ✓ | | ✓ |

| Supported TV Resolutions (Hz) | | Input | | Output |
| --- | --- | --- | --- | --- |
| | | HDMI | VGA | HDMI via HDBaseT |
| 720×480i | 59.94, 60 | ✓ | | |
| 720×576i | 50 | ✓ | | |
| 720×480p | 59.94, 60 | ✓ | ✓ | 60 |
| 720×576p | 50 | ✓ | ✓ | |
| 1280×720p | 50, 59.94, 60 | ✓ | ✓ | ✓ |
| 1920×1080i | 50, 59.94, 60 | ✓ | | 50/60 |
| 1920×1080p | 50, 59.94, 60 | ✓ | ✓ | |
| 1920×1080p | 23.97, 24, 25, 29.97, 30 | ✓ | ✓ | 24/25/30 |
| 2560×1080p | 50, 60 | ✓ | | ✓ |
| 3840×2160p | 24, 25, 30 | ✓ | | ✓ |
| 4096×2160p | 24, 25, 30 | ✓ | | ✓ |
| 3840×2160p (YUV 4:2:0) | 50, 60 | ✓ | | |
| 3840×2160p | 50, 60 | ✓ | | |

## 8.3 Cable Specifications

| HDMI Cable Length (meter) | 1080p | | 4K |
| --- | --- | --- | --- |
| | 8-bit | 12-bit | 8-bit |
| Input | 10 | 10 | 5 |
| Output | 10 | 10 | 5 |

| Cat. Cable Length (meter) | 1080p | 4K |
| --- | --- | --- |
| Cat.5e | 100 | 70 |
| Cat.6 | 100 | 70 |
| Cat.7 | 100 | 100 |

- **Full HD Video (1080p)**
  - Up to 1080p@60Hz, 12-bit color
  - Data rates lower than 5.3Gbps or below 225MHz TMDS clock
- **Ultra HD Video (4K)**
  - 4K@24/25/30Hz & 4K@50/60Hz (YUV 4:2:0), 8-bit color
  - Data rates higher than 5.3Gbps or above 225MHz TMDS clock

# 9. ACRONYMS

| ACRONYM | COMPLETE TERM |
|---------|---------------|
| **Cat.5e** | Category 5 (enhanced) Cable |
| **Cat.6** | Category 6 Cable |
| **Cat.7** | Category 7 Cable |
| **CEC** | Consumer Electronics Control |
| **DVI** | Digital Visual Interface |
| **HD** | High-Definition |
| **HDCP** | High-bandwidth Digital Content Protection |
| **HDMI** | High-Definition Multimedia Interface |
| **LAN** | Local Area Network |
| **LPCM** | Linear Pulse-Code Modulation |
| **PD** | Powered Device |
| **PoH** | Power over HDBaseT |
| **PSE** | Power Sourcing Equipment |
| **UHD** | Ultra-High-Definition |
| **VGA** | Video Graphics Array |
| **WUXGA** | Wide Ultra Extended Graphics Array |