CYP

VEX-T1201T
UHD+ HDMI over Category Cable Transmitter

Operation Manual

HDMI®

HIGH-DEFINITION MULTIMEDIA INTERFACE

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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.

- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
RDV1	2022/08/24	Preliminary release

CONTENTS

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1. INTRODUCTION

This UHD$^+$ HDMI over Category Cable Transmitter is part of an extension system which is able to extend high quality 4K HDMI video along with audio up to 60m (197ft) of standard Cat.6 network cable without signal loss or introducing delay. This transmitter unit includes basic EDID management functionality, an HDMI bypass output, and provides PoC (Power over Cable) to the connected compatible receiver.

2. APPLICATIONS

• Long distance video and audio extension
• Hotel or convention center displays
• Lecture halls, auditoriums and classroom
• Houses of worship
• Conference rooms and boardrooms

3. PACKAGE CONTENTS

• 1× UHD$^+$ HDMI over Category Cable Transmitter
• 1× 12V/3A DC Power Adapter
• 1× Operation Manual

4. SYSTEM REQUIREMENTS

• HDMI source equipment such as a media player, video game console, PC, or set-top box.
• Compatible receiver with PoC (PD) support is recommended.
• The use of Premium High Speed HDMI cables, and industry standard Cat.6, Cat.6A or Cat.7, 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 Cat.6 output, 1 HDMI bypass output
- Supports HDMI input and Cat.6 output resolutions up to 4K@60Hz (4:4:4, 8-bit)
- Cat.6 extension can reach to up to 60m (197ft)
- Supports extension of many audio formats including LPCM (up to 8 channels) and standard Bitstream
- Basic EDID management with 3 built in EDIDs and an EDID bypass option
- Top panel LEDs indicate link state, and power
- Unit is a PoC (PSE) device and can provide power to a connected compatible receiver

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6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel
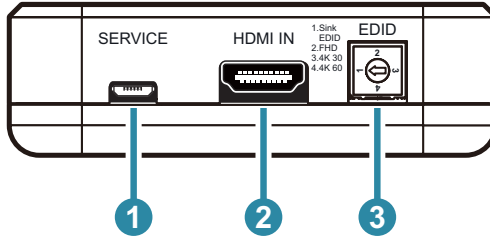
1 **SERVICE Port:** This port is reserved for firmware update use only.

2 **HDMI IN Port:** Connect to HDMI source equipment such as a media player, game console, or set-top box. DVI sources are supported with the use of an HDMI to DVI adapter.

3 **EDID Dial:** Use this dial to select the unit's EDID management mode:

1 = Sink EDID   2 = FHD (1080p60) & LPCM 2.0

3 = UHD (4K30) & LPCM 2.0   4 = UHD$^+$ (4K60) & LPCM 2.0

6.2 Rear Panel
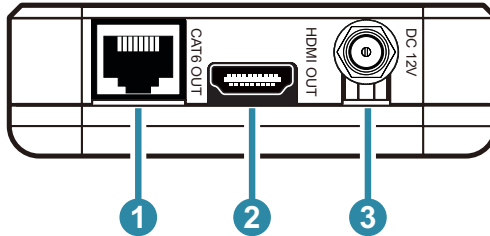
1 **CAT6 OUT Port:** Connect to a compatible receiver with a single Cat.6, or better, cable for transmission of all data signals. PoC will also be supplied to a connected compatible PD receiver.

Note: The PoC function is designed to send power to compatible receiver units only. Other brands of receiver may not be compatible.

2 **HDMI OUT Port:** Connect to HDMI TVs, monitors, or amplifiers for digital video and audio output.

3 **DC 12V Port:** Plug the 12V DC power adapter into this port and connect it to an AC wall outlet for power. The top LED will illuminate red to indicate the unit is on and receiving power.

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6.3 Top Panel
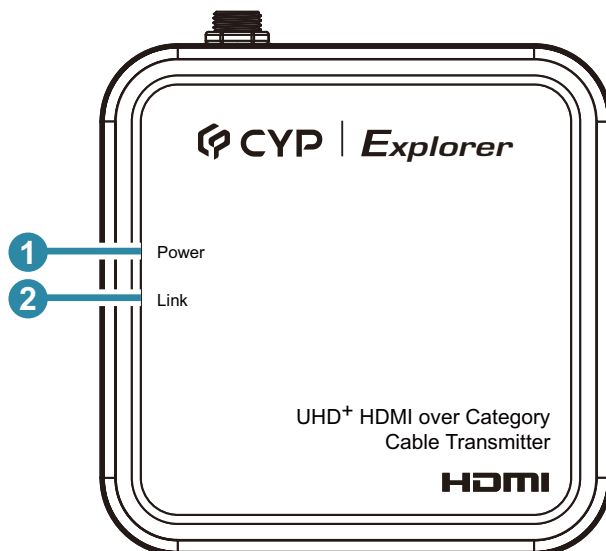
1 **Power LED:** This LED will illuminate red to indicate the unit is on and receiving power. When the unit is in update mode the LED will blink.

2 **Link LED:** This LED will illuminate blue to indicate that a live source has been detected on the input port. When no source is detected the LED will remain off.

7. CONNECTION DIAGRAM

Monitor

PC/Blu-ray Player

HDMI Input

Power Supply

T

HDMI Output

CAT

HDMI Output

R

HDMI Input

Audio Extract

PC/Blu-ray Player

Speakers

Monitor

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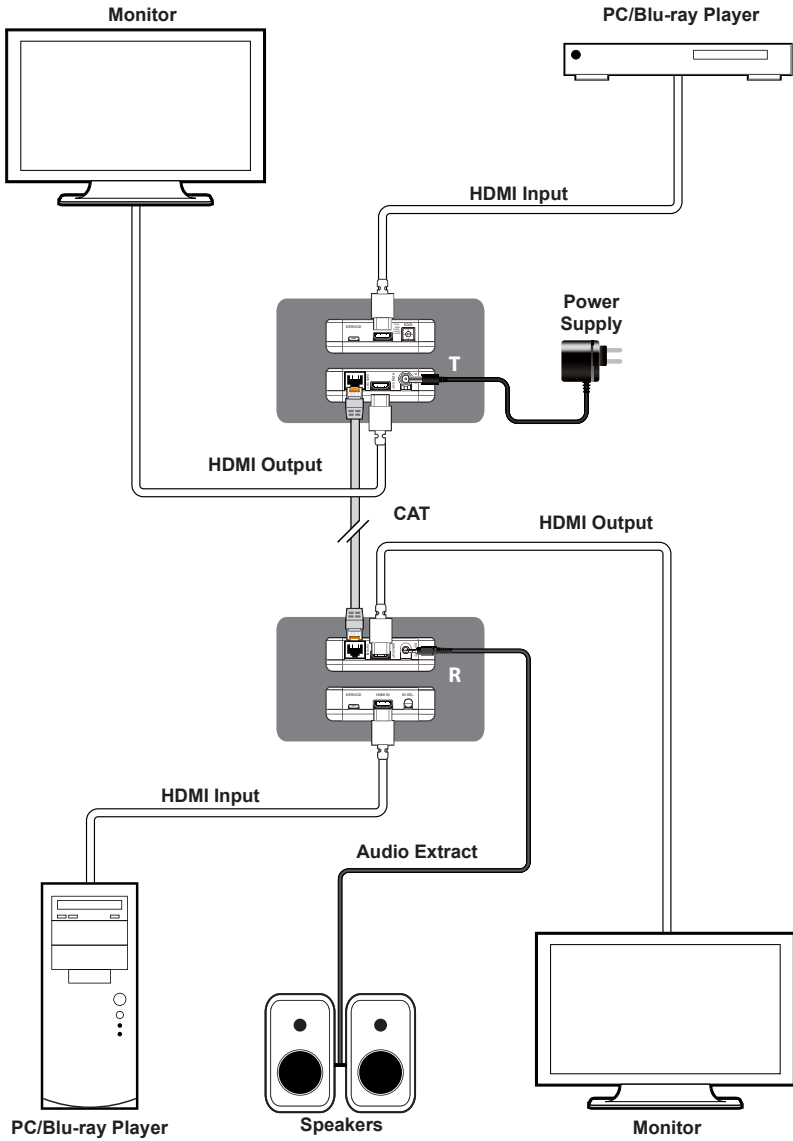
8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Bandwidth	18Gbps
Cat.6 Bandwidth	10Gbps
Input Ports	1×HDMI (Type-A)
Output Ports	1×Cat.6 (RJ-45)
	1×HDMI (Type-A)
Service Port	1×USB 2.0 (Micro-B)
Power Supply	12V/3A DC
	(US/EU standards, CE/FCC/UL certified)
ESD Protection (HBM)	±8kV (Air Discharge)
	±4kV (Contact Discharge)
Dimensions (W×H×D)	85mm×26mm×85mm [Case Only]
	85mm×26mm×91mm [All Inclusive]
Weight	150g
Chassis Material	Plastic
Chassis Color	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	4.6W (including PoC to receiver)

8.2 Video Specifications

Supported Resolutions (Hz)	Input HDMI	Output HDMI	Output Cat.6
720×400p@70/85	✓	✓	✓
640×480p@60/72/75/85	✓	✓	✓
720×480i@60	✓	✓	✓
720×480p@60	✓	✓	✓
720×576i@50	✓	✓	✓
720×576p@50	✓	✓	✓
800×600p@56/60/72/75/85	✓	✓	✓
848×480p@60	✓	✓	✓
1024×768p@60/70/75/85	✓	✓	✓
1152×864p@75	✓	✓	✓
1280×720p@50/60	✓	✓	✓
1280×768p@60/75/85	✓	✓	✓
1280×800p@60/75/85	✓	✓	✓
1280×800p@60RB	✓	✓	✕
1280×960p@60/85	✓	✓	✓
1280×1024p@60/75/85	✓	✓	✓
1360×768p@60	✓	✓	✓
1366×768p@60	✓	✓	✓
1400×1050p@60	✓	✓	✓
1400×1050p@60RB	✓	✓	✕
1440×900p@60/75	✓	✓	✓
1440×900p@60RB	✓	✓	✕
1600×900p@60RB	✓	✓	✕
1600×1200p@60	✓	✓	✓
1680×1050p@60	✓	✓	✓
1920×1080i@50/60	✓	✓	✕

Supported Resolutions (Hz)	Input HDMI	Output HDMI	Output Cat.6
1920×1080p@24/25/30	✓	✓	✓
1920×1080p@50/60	✓	✓	✓
1920×1200p@60	✓	✓	✓
1920×1200p@60RB	✓	✓	×
2560×1440p@60RB	✓	✓	×
2560×1600p@60RB	✓	✓	×
2048×1080p@24/25/30	✓	✓	×
2048×1080p@50/60	✓	✓	×
3840×2160p@24/25/30	✓	✓	✓
3840×2160p@50/60 (4:2:0)	✓	✓	✓
3840×2160p@24, HDR10	✓	✓	×
3840×2160p@50/60 (4:2:0), HDR10	✓	✓	×
3840×2160p@50/60	✓	✓	✓
4096×2160p@24/25/30	✓	✓	✓
4096×2160p@50/60 (4:2:0)	✓	✓	50
4096×2160p@24, HDR10	✓	✓	×
4096×2160p@50/60 (4:2:0), HDR10	✓	✓	×
4096×2160p@50/60	✓	✓	50

8.3 Audio Specifications

8.3.1 Digital Audio

HDMI Input / Output	
LPCM	
Max Channels	8 Channels
Sampling Rate (kHz)	32, 44.1, 48, 88.2, 96, 176.4, 192
Bitstream	
Supported Formats	Standard

Cat.6 Output	
LPCM	
Max Channels	8 Channels
Sampling Rate (kHz)	32, 44.1, 48, 88.2, 96, 176.4, 192
Bitstream	
Supported Formats	Standard

![CYP logo]

8.4 Cable Specifications

Cable Length	HD	FHD	4K UHD	4K UHD⁺	8K UHD
High Speed HDMI Cable					
HDMI Input	10m	10m	5m	3m	×
HDMI Output	10m	10m	5m	3m	×
Ethernet Cable					
Cat.6/6A/7	60m				×

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 color) & 4K@50/60Hz (4:2:0, 8-bit color)
  - 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 color)
  - HDMI transmission rates between 18Gbps and 48Gbps
  - 24G-SDI (SMPTE ST 2083, 24Gbps)

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)
Cat.5e	Enhanced Category 5 cable
Cat.6	Category 6 cable
Cat.6A	Augmented Category 6 cable
Cat.7	Category 7 cable
DAC	Digital-to-Analog Converter
dB	Decibel
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
Gbps	Gigabits per second
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDR	High Dynamic Range
kHz	Kilohertz
LED	Light-Emitting Diode
LPCM	Linear Pulse-Code Modulation
MHz	Megahertz
PD	Powered Device
PoC	Power over Cable
PSE	Power Sourcing Equipment
SNR	Signal-to-Noise Ratio
THD+N	Total Harmonic Distortion plus Noise
TMDS	Transition-Minimized Differential Signaling
UHDTV	Ultra-High-Definition Television
USB	Universal Serial Bus
VGA	Video Graphics Array

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