CH-POE

Power over Ethernet/HDBaseT Power Injector

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

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
RDV1	2020/06/16	Preliminary release

CONTENTS

1. INTRODUCTION

HDBaseT has a large share of the video extension market when it comes to the extension of uncompressed video and other extenders that rely on Ethernet for extension are gaining in popularity. With the idea of simplifying the installation process, reducing cable clutter, and removing the need for power outlets near every endpoint, we designed this product. It allows system integrators to improve the practicality of a wide range of extension products. This Power over Ethernet/HDBaseT Power Injector is designed to easily deliver power to any standard HDBaseT products that support PoH, or Ethernet products that support the PoE (IEEE 802.3af) standard. Power can be selectively provided to one or both of the 2 ports on the unit enabling it to potentially power both ends of a point-to-point extension system at the same time. This power suppling unit is a cost, and headache, saving piece of equipment and is small enough to be conveniently installed just about anywhere it might be needed.

2. APPLICATIONS

- Lecture hall or classroom installations
- Showroom or kiosk display installations
- Home entertainment installation

3. PACKAGE CONTENTS

- 1× Power over Ethernet/HDBaseT Power Injector
- 1× 48V/0.83A DC Power Supply
- 1× Power Cord
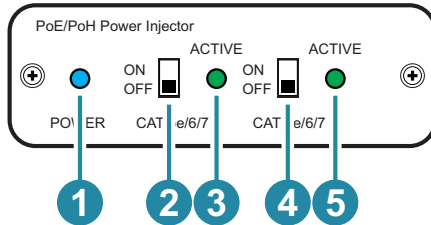- 1× Operation Manual

4. SYSTEM REQUIREMENTS

- The use of industry standard Cat.6, Cat.6A or Cat.7 cable is highly recommended.

5. FEATURES

- HDCP 1.x and 2.2 compliant
- Signals up to 10.2Gbps bandwidth are bypassed without modification other than the addition of PoE/PoH
- Data path is bi-directional, pin to pin, and signal agnostic
- Supports DC 48V to products using Power over HDBaseT or Power over Ethernet (IEEE 802.3af)
- Provides PoE/PoH over distances of up to 100 meters to compatible powered devices (PD)
- Independent power switches to selectively control power availability for each port
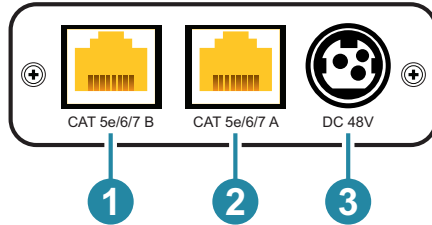
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel

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

2 **CAT 5e/6//7 A Switch:** Enables or disables providing PoE/PoH on Ethernet port A.

3 **ACTIVE A LED:** This LED will illuminate to indicate that PoE/PoH is being provided to Ethernet port A.

Note: The LED will only illuminate when power is actively being used by the connected device.

4 **CAT 5e/6//7 B Switch:** Enables or disables providing PoE/PoH on Ethernet port B.

5 **ACTIVE B LED:** This LED will illuminate to indicate that PoE/PoH is being provided to Ethernet port B.

Note: The LED will only illuminate when power is actively being used by the connected device.

6.2 Rear Panel

1 **CAT 5e/6/7 B Port:** Connect to a compatible unit with a single Cat.5e/6/7 cable for bypassed transmission of all data signals. PoE/PoH can also be supplied to compatible PD devices if the feature has been enabled via the appropriate front panel switch.

Note: The PoE/PoH function is designed to transmit power to compatible units only.

2 **CAT 5e/6/7 A Port:** Connect to a compatible unit with a single Cat.5e/6/7 cable for bypassed transmission of all data signals. PoE/PoH can also be supplied to compatible PD devices if the feature has been enabled via the appropriate front panel switch.
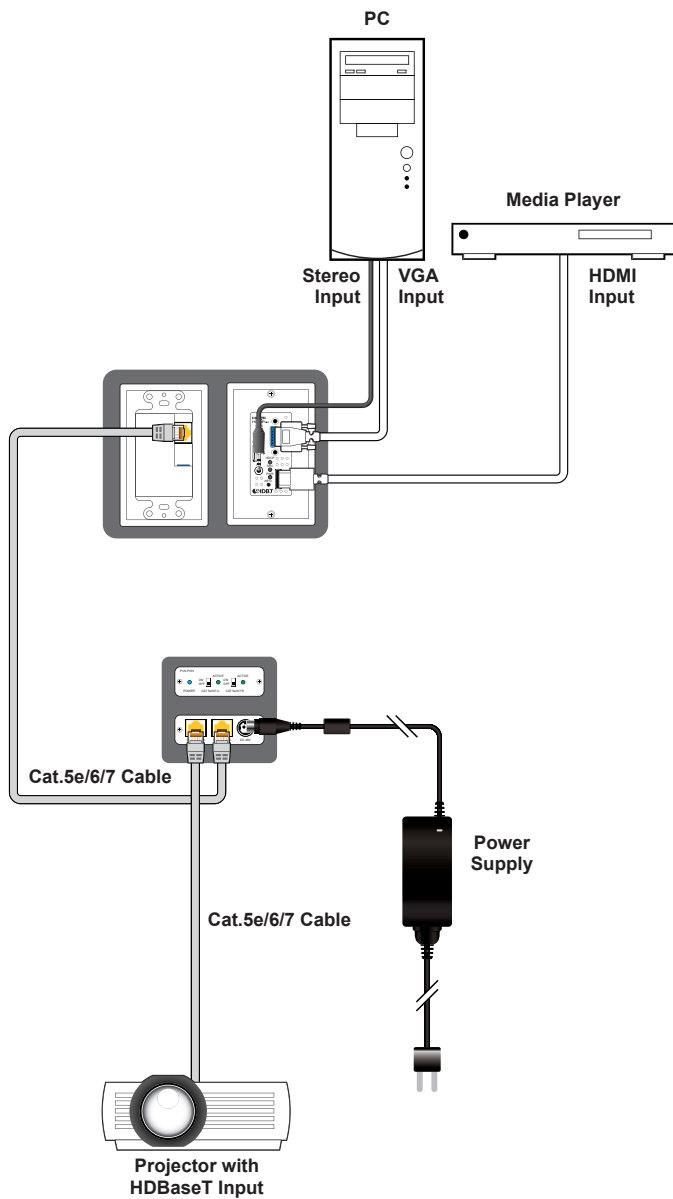
Note: The PoE/PoH function is designed to transmit power to compatible units only.

3 **DC 48V Port:** Plug the 48V DC power adapter into this port and connect it to an AC wall outlet for power.

7. CONNECTION DIAGRAM

PC

Media Player

Stereo Input   **VGA Input**   **HDMI Input**

Cat.5e/6/7 Cable

Cat.5e/6/7 Cable

Power Supply

Projector with HDBaseT Input

8. SPECIFICATIONS

8.1 Technical Specifications

Cat.5e/6/7 Bandwidth	10.2Gbps
Input Port	1×Cat.5e/6/7 (RJ-45)
Output Port	1×Cat.5e/6/7 (RJ-45)
Power Supply	48V/0.83A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)
Dimensions (W×H×D)	71mm×72mm×23mm [Case Only] 71mm×76mm×23mm [All Inclusive]
Weight	130g
Chassis Material	Metal (Aluminum)
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	10.6W

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8.2 Cable Specifications

Cable Length	1080p		4K30	4K60
	8-bit	12-bit	(4:4:4) 8-bit	(4:4:4) 8-bit
Ethernet Cable				
Cat.5e/6	100m			×
Cat.6A/7	100m			×

Bandwidth Category Examples:

- **1080p (FHD Video)**
  - Up to 1080p@60Hz, 12-bit color
  - Data rates lower than 5.3Gbps or below 225MHz TMDS clock

- **4K30 (4K UHD Video)**
  - 4K@24/25/30Hz & 4K@50/60Hz (4:2:0), 8-bit color
  - Data rates higher than 5.3Gbps or above 225MHz TMDS clock but below 10.2Gbps

- **4K60 (4K UHD⁺ Video)**
  - 4K@50/60Hz (4:4:4, 8-bit)
  - 4K@50/60Hz (4:2:0, 10-bit HDR)
  - Data rates higher than 10.2Gbps

8.3 HDBaseT Features

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

9. ACRONYMS

ACRONYM	COMPLETE TERM
Cat.5e	Enhanced Category 5 cable
Cat.6	Category 6 cable
Cat.6A	Augmented Category 6 cable
Cat.7	Category 7 cable
Gbps	Gigabits per second
HDBT	HDBaseT
kHz	Kilohertz
LAN	Local Area Network
LED	Light-Emitting Diode
MHz	Megahertz
PD	Powered Device
PoH	Power over HDBaseT
PoE	Power over Ethernet
PSE	Power Sourcing Equipment
4K UHD	4K Ultra-High-Definition (10.2Gbps max)
4K UHD[+]	4K Ultra-High-Definition (18Gbps max)