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Key Digital®, led by digital video pioneer Mike Tsinberg, develops and manufactures high quality, cutting-edge technology solutions for virtually all applications where high quality video imaging is important. Key Digital® is at the forefront of the video industry for Home Theater Retailers, Custom Installers, System Integrators, Broadcasters, Manufacturers, and Consumers.

KD-CATHD250Lite

HDBT/HDMI "Lite" via Single CAT5e/6 (Tx/Rx)
Extenders with Full Buffer System, IR

KD-CATHD250POE

HDBT/HDMI "Lite POE" via Single CAT5e/6 (Tx/Rx)
Extenders with Full Buffer System, IR, Power Over Ethernet

Setup Guide



Key digital®

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The Experts in Digital Video Technology and Solutions™

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Table of Contents

About KD-CATHD250Lite/POE	1
Connections	2
Extending IR and RS-232 Control	4
Application Example	4
Settings	5
Specifications	6
Important Product Warnings & Safety Instructions	8
How to Contact Key Digital	9
Warranty	9

About KD-CATHD250Lite/POE

The FatCAT Series™ KD-CATHD250Lite/POE allow extension of 1080p/60, 1920x1200, 3D signals up to 200 ft. on CAT5e/UTP; 250 Ft on CAT6/STP with KD-CAT6STP1X cable. 4K signal extension is 120 ft. with all cabling. KD-CATHD250Lite/POE carry IR and RS-232 for controlling remotely located equipment.

Key Features

- Auto-adjustment of feedback, equalization and amplification depending on the length of cabling used
- Extends either IR or RS-232 control signals
- Full support for 12-Bit Deep Color Video
- Supports lossless compressed digital audio:
 - » Dolby® TrueHD, Dolby® Digital Plus and DTS™-HD Master Audio

Key Benefits

- HDMI, IR and RS-232 signals combined over a single CAT cable
- Daisy chaining of Tx and Rx units allow almost unlimited extension of HDMI, RS-232 and IR signals
- Supports HDBaseT® Technology

Advanced HDMI® Features

- **3D** – Capability to pass 3D stereoscopic signal formats
- **4K** – Capability to pass 4K by 2K resolutions



Accessories

- (2) 5V 2A DC Power Supply (KD-CATHD250Lite)
 - » KD-CATHD250Lite requires power on both Tx and Rx units
- (1) 12V 2A (KD-CATHD250POE)
 - » KD-CATHD250POE only requires power on the Tx unit, which extends power to the Rx unit
- (2) Mounting Brackets
- (2) Locking HDMI Cable Clips
- (1) Grounding Wire

⚠ CAT6/STP CABLING IS STRONGLY RECOMMENDED FOR OPTIMUM SIGNAL TRANSMISSION, ESPECIALLY IN HARSH ENVIRONMENTS

⚠ You MUST use the Power Supply provided with your unit or you VOID the Key Digital® Warranty and risk damage to your unit and associated equipment.

⚠ Please read all instructions to insure safe operation of the product.

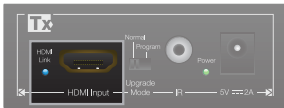
Connections

Before making any connections, power off your source and display devices.

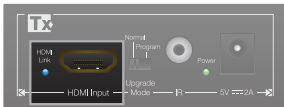


Tx Extender:

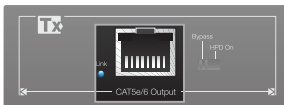
- Using a short HDMI cable, connect your source device to the HDMI port labeled "HDMI Input". To connect DVI use appropriate DVI to HDMI adapters.



- Connect the CAT cable on the Tx extender to the port labeled "CAT5e/6 Output".



- If desired, you can connect IR or RS-232 signals to the 3.5mm jack at this time. Refer to the below pin assignment chart for pin assignments.



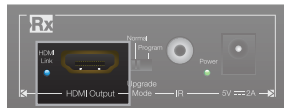
→ Tx Pin Assignment Chart

Mode	Tip	Ring	Sleeve
IR	IR In	IR Out	Gnd
RS232	RxD	TxD	Gnd



Rx Extender:

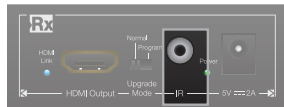
- Using a short HDMI cable, connect your display device to the HDMI port labeled "HDMI Output".



- Connect the CAT cable on the Rx extender to the port labeled "CAT5e/6 Input".



- If you are extending IR or RS-232 signals, connect them to the 3.5mm jack. Refer to the below pin assignment chart for pin assignments.



→ Rx Pin Assignment Chart

Mode	Tip	Ring	Sleeve
IR	IR Out	IR In	Gnd
RS232	TxD	RxD	Gnd

- Power up the extenders using the included power supplies and then power up your source and display equipment.
 - » KD-CATHD250Lite requires power on both Tx and Rx units
 - » KD-CATHD250POE only requires power on the Tx unit, which extends power to the Rx unit

Extending IR and RS-232 Control

You can extend IR or RS-232 control signals over the KD-CATHD250Lite/KD-CATHD250POE baluns, for controlling remotely located equipment.

To extend control signals, follow the below pin assignment charts.

NOTE: The pin assignments are different on the Tx and Rx units.

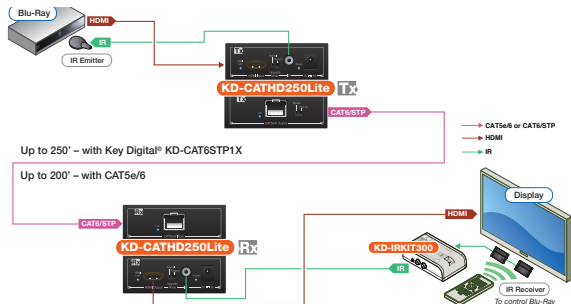
→ Tx Pin Assignment Chart

Mode	Tip	Ring	Sleeve
IR	IR In	IR Out	Gnd
RS232	RxD	TxD	Gnd

→ Rx Pin Assignment Chart

Mode	Tip	Ring	Sleeve
IR	IR Out	IR In	Gnd
RS232	TxD	RxD	Gnd

Application Example



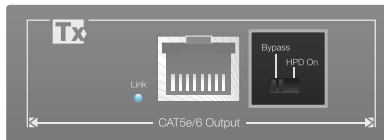
Daisy Chain Example:



Settings

Forced HPD:

The KD-CATHD250Lite/KD-CATHD250POE baluns allow modifying HPD (Hot Plug Detection) protocol between the source and display. Modifying HPD protocol will allow overcoming HPD handshake incompatibility between the source and display. Modifying HPD protocol may also help fix other problems related to HDMI connectivity.



Range and Resolution:

→ Using KD-CAT6STP1X Super CAT6 Shielded cabling:

All resolutions up to 1080p, 1920x1200, 3D up to 250 ft.; 4K up to 120'

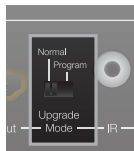
→ Using Third-Party CAT5e/6 cabling: All resolutions up to 1080p, 1920x1200, 3D up to 200 ft.; 4K up to 120'



NOTE: Use metal shielded RJ45 connectors with soldered ground wires when terminating the CAT6 STP.

Firmware Updates:

The KD-CATHD250Lite/POE Tx and Rx have an “Operation Mode” switch. The 2 position slide switch is marked “**Normal**” and “**Program**”. This switch should only be used in the “**Program**” position when updating the unit’s firmware. Be sure the switch is in the “**Normal**” mode for standard operation.



Specifications

Technical:

- Inputs Tx (Each): (1) HDMI, (1) 3.5mm Stereo (as either input or output)
- Outputs Tx (Each): (1) CAT5e/6
- Inputs Rx (Each): (1) CAT5e/6
- Outputs Rx (Each): (1) HDMI, (1) 3.5mm Stereo (as either input or output)
- HDMI® and HDCP Licensing: Fully licensed and compatible with all HDMI and HDCP technologies
- Link and Range: 1080p/60, 1920x1200, 1080i/60, 720p, 1080p/24; up to 250 ft. when used with KD-CAT6STP1X cabling, up to 200 ft. when used with CAT5e/6 cabling. 4K resolution up to 120'.
- Lossless Compressed Digital Audio Support: Dolby® TrueHD, Dolby® Digital Plus and DTS™-HD Master Audio
- DDC Signal (Data): Input DDC Signal: 5 Volts p-p (TTL)
- HDMI Video/Audio Signal: Input Video Signal: 1.2 Volts p-p
- HDMI Connector: Type A, 19 Pin Female
- RJ45 Connector: Shielded Link Connector
- Control Extension Connector: 3.5mm Stereo Jack
- I2C Communication: EDID and HDCP bi-directional transparency from Display to Source
- CEC Support: To the main input and output HDMI channel.

General

- Regulation: CE, RoHS, WEEE
- Enclosure: Black Metal
- Product Dimensions (Each): L = 6" W = 4.1" H = 1.2"
- Shipping Carton Dimensions: L = 7.48" W = 6.54" H = 5.2"
- Product Weight (Each): 1 lb
- Shipping Weight: 3 lbs
- Power: UL Certified Power Supply – 5V / 2A, 110-240 VAC, 50-60 Hz
- Power Consumption: Tx - 2.5 Watts, Rx - 5 Watts

Accessories

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- (2) Mounting Brackets
- (2) Locking HDMI Cable Clips
- (1) Grounding Wire



Important Product Warnings

1. Connect all cables before providing power to the unit.
2. Test for proper operation before securing unit behind walls or in hard to access spaces.
3. If installing the unit into wall or mounting bracket into sheet-rock, provide proper screw support with bolts or sheet-rock anchors.



Safety Instructions

Please be sure to follow these instructions for safe operation of your unit.

1. Read and follow all instructions.
2. Heed all warnings.
4. Do not use this device near water.
5. Clean only with dry cloth.
6. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Only use attachments/accessories specified by the manufacturer.
9. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way including:
 - » Damage to the power supply or power plug
 - » Exposure to rain or moisture



Power Supply Use

You MUST use the Power Supply provided with your unit or you VOID the Key Digital® Warranty and risk damage to your unit and associated equipment.

How to Contact Key Digital

System Design Group (SDG)

For system design questions please contact us at:

- » Phone: 914-667-9700
- » E-mail: sdg@keydigital.com

Customer Support

For customer support questions please contact us at:

- » Phone: 914-667-9700
- » E-mail: customersupport@keydigital.com

Technical Support

For technical questions about using Key Digital® products, please contact us at:

- » Phone: 914-667-9700
- » E-mail: tech@keydigital.com

Repairs and Warranty Service

Should your product require warranty service or repair, please obtain a Key Digital® Return Material Authorization (RMA) number by contacting us at:

- » Phone: 914-667-9700
- » E-mail: rma@keydigital.com

Feedback

Please email any comments/questions about the manual to:

- » E-mail: customersupport@keydigital.com

Warranty

All Key Digital® products are built to high manufacturing standards and should provide years of trouble-free operation. They are backed by a limited two-year parts and labor warranty.