



# CH-514TXL/RXL

HDBaseT™ Lite HDMI over Single CAT5e/6/7 Extender



Operation Manual





## **DISCLAIMERS**

The information in this manual has been carefully checked and is believed to be accurate. Cypress Technology assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

Cypress Technology assumes no responsibility for any inaccuracies that may be contained in this document. Cypress also makes no commitment to update or to keep current the information contained in this document.

Cypress Technology reserves the right to make improvements to this document and/or product at any time and without notice.

## **COPYRIGHT NOTICE**

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means—electronic, mechanical, magnetic, optical, chemical, manual, or otherwise—without express written permission and consent from Cypress Technology.

© Copyright 2012 by Cypress Technology.

All Rights Reserved.

Version 1.1 August 2011

## **TRADEMARK ACKNOWLEDGMENTS**

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.



## 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 DD/MM/YY	SUMMARY OF CHANGE
VR0	21/12/12	Preliminary Release
VR1	04/03/13	
VS2	01/07/13	Updated Text/Diagrams

## CONTENTS

<b>1. Introduction</b> .....	<b>1</b>
<b>2. Applications</b> .....	<b>1</b>
<b>3. Package Contents</b> .....	<b>1</b>
<b>4. System Requirements</b> .....	<b>1</b>
<b>5. Features</b> .....	<b>2</b>
<b>6. Operation Controls and Functions</b> .....	<b>3</b>
6.1 Transmitter Front and Rear Panels.....	3
6.2 Receiver Front and Rear Panels .....	4
6.3 Transmitter and Receiver Top Panels..	5
6.4 IR Cable Pin Assignment.....	5
<b>7. Connection Diagram</b> .....	<b>6</b>
<b>8. Specifications</b> .....	<b>8</b>
<b>9. Acronyms</b> .....	<b>9</b>



## 1. INTRODUCTION

The HDBaseT™ Lite HDMI over Single CAT5e/6/7 Extender incorporating 2-way IR signal transfer allows for a more efficient system setup and is easy to install. Uncompressed video and audio can be transmitted to distances of up to 60 meters (1080p) or up to 35 meters (4K×2K) and supports High Definition Audio and 3D signals.

Designed with HDBaseT Lite technology for greater flexibility in custom installations with full HDMI and 2-way IR control signal transfer over a single CAT5e/6/7 cable.

## 2. APPLICATIONS

- Residential entertainment sharing and control
- University lecture hall display and control
- Retail sales display and control
- Meeting room presentation and control
- Commercial advertising display and control

## 3. PACKAGE CONTENTS

- 1×HDMI over Single CAT5e/6/7 Transmitter
- 1×HDMI over Single CAT5e/6/7 Receiver
- 1×IR Blaster
- 1×IR Extender
- 2×5 V/2.6 A DC Power Adaptor
- Operation Manual

## 4. SYSTEM REQUIREMENTS

HDMI source equipment such as DVD/Blu-ray player/PC and TV/monitor/projector with HDMI input. HDMI and CAT5e/6/7 cables.

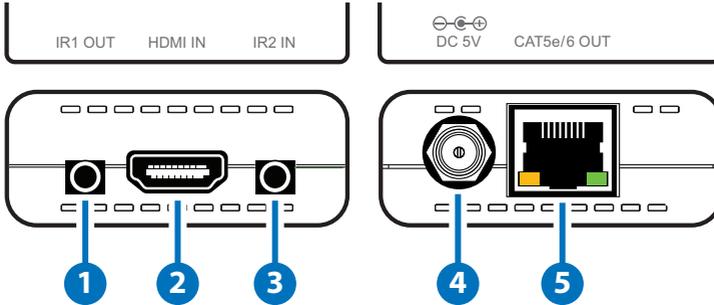
## 5. FEATURES

- HDMI including 3D and 4K×2K (Ultra HD) support, HDCP and DVI compliant
- Supports HDCP repeater and CEC bypass
- Supports HDBaseT Lite Technology including 2-Way IR and RS-232
- Supports transmission distance of up to 60 meters through CAT5e/6/7 cable (1080p or 3D) or 35 meters (4K×2K)
- Supports HDMI input up to 15 meters at 8-bit resolution or 10 meters at 12-bit resolution and output up to 15 meters at 8-bit or 12-bit resolution
- Audio support up to LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio
- Compact size with stylish design

*Note: When displaying a 3D signal with a higher bandwidth than 225 MHz or a 4K×2K resolution source, a High Speed HDMI cable is required.*

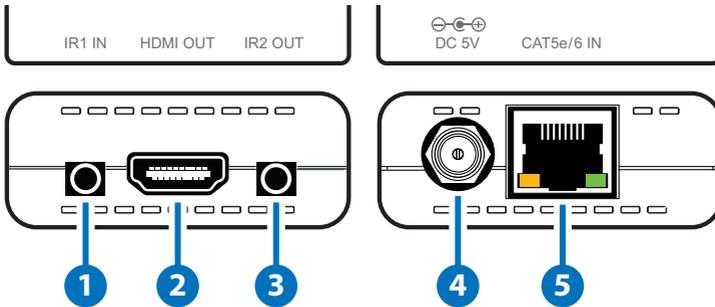
## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Transmitter Front and Rear Panels



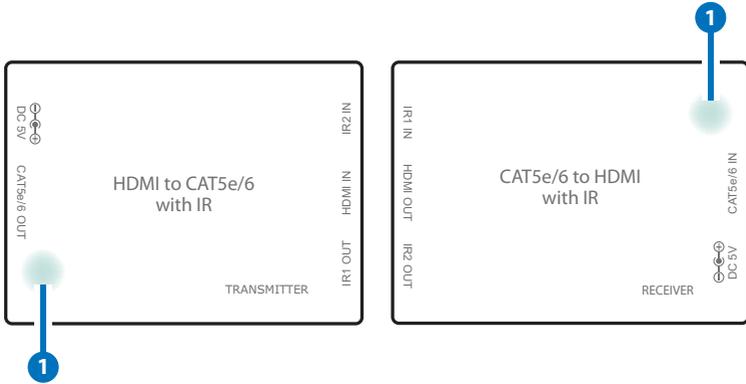
- 1 IR1 OUT:** Connect to the supplied IR blaster for IR signal transmission to the source equipment. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- 2 HDMI IN:** Connect to an HDMI source device such as a DVD player or Set-top Box with HDMI cable or DVI to HDMI cable.
- 3 IR2 IN:** Connect to the supplied IR extender cable for IR signal reception and transmission to IR2 OUT on the receiver unit. Ensure that remote being used is within the direct line-of-sight of the IR extender.
- 4 DC 5V:** Connect the 5V DC power supply to the unit and plug the adaptor into an AC outlet.
- 5 CAT5e/6 OUT:** Connect to the receiver unit with a single CAT5e/6/7 cable for transmission of all data signals. The yellow LED will illuminate when both transmitter and receiver are connected together and are powered. The green LED will illuminate when the device is connected to the power supply.

## 6.2 Receiver Front and Rear Panels



- 1 **IR1 IN:** Connect the supplied IR extender cable for IR signal reception and transmission to IR1 OUT on the transmitter unit. Ensure that the remote control being used is within the direct line-of-sight of the IR extender.
- 2 **HDMI OUT:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.
- 3 **IR2 OUT:** Connect to the supplied IR blaster for IR signal transmission to the display equipment. Place the IR blaster in direct line-of-sight of the equipment to be controlled.
- 4 **DC 5V:** Connect the 5V DC power supply to the unit and plug the adaptor into an AC outlet.
- 5 **CAT5e/6 IN:** Connect to the transmitter unit with a single CAT5e/6/7 cable for transmission of all data signals. The yellow LED will illuminate when both the transmitter and receiver are connected and are powered. The green LED will illuminate when the device is connected to the power supply.

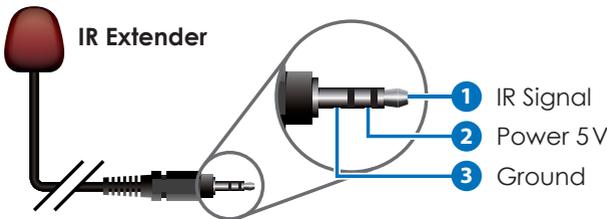
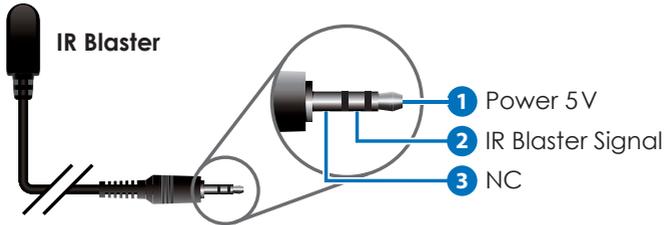
### 6.3 Transmitter and Receiver Top Panels



#### 1 LINK LED

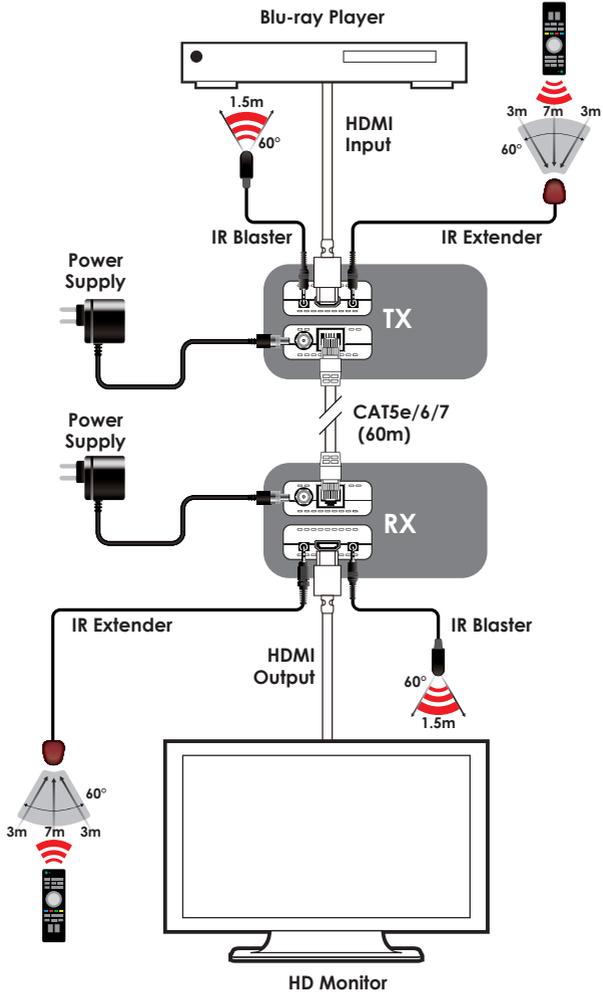
This LED will illuminate in blue when the devices are connected with a CAT5e/6 cable. If the data transmission has an error the LED will blink.

### 6.4 IR Cable Pin Assignment

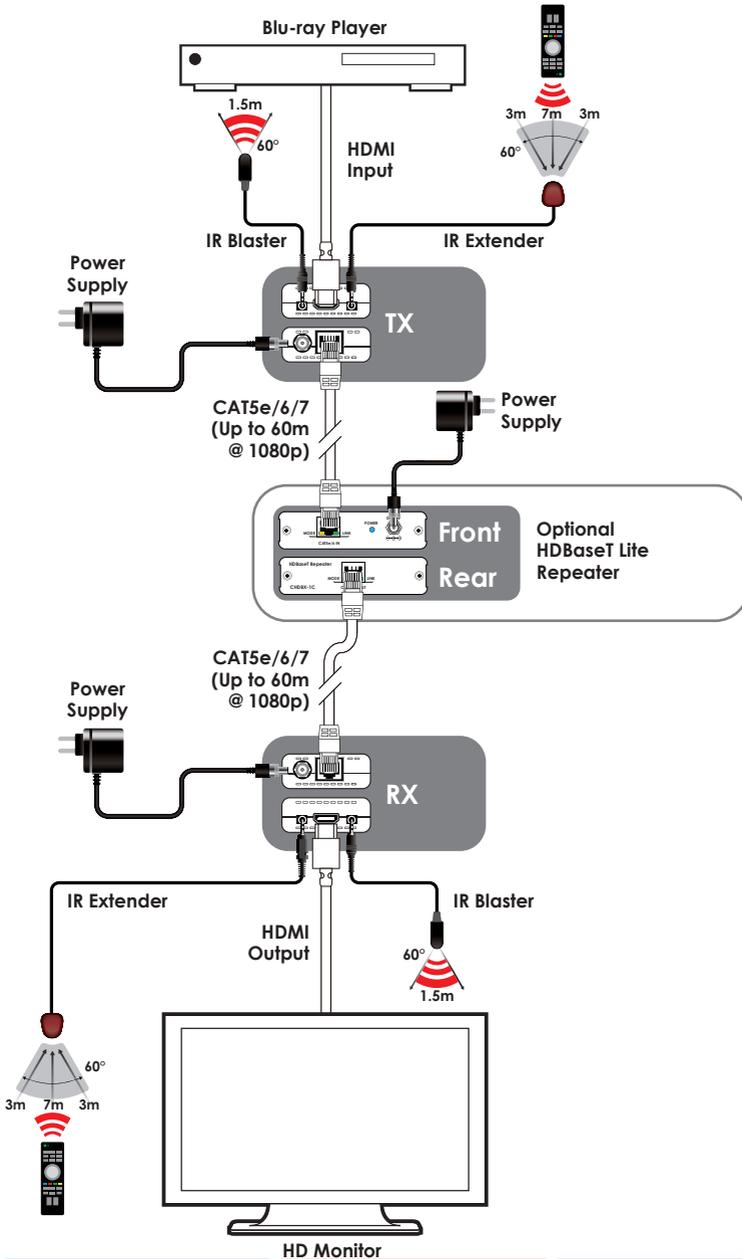


## 7. CONNECTION DIAGRAM

### Example 1: Direct Connection



## Example 2: Using a Repeater to Extend the Operating Distance



## 8. SPECIFICATIONS

<b>Video Bandwidth</b>	300 MHz/10.2 Gbps
<b>Transmitter</b>	
<b>Input</b>	1×HDMI, 1×IR Extender
<b>Output</b>	1×CAT5e/6/7, 1×IR Blaster
<b>Receiver</b>	
<b>Input</b>	1×CAT5e/6/7, 1×IR Extender
<b>Output</b>	1×HDMI, 1×IR Blaster
<b>ESD Protection</b>	Human Body Model: ±8kV (air-gap discharge) ±4kV (contact discharge)
<b>Power Supply</b>	5V/2.6A DC (US/EU standards, CE/FCC/UL certified)
<b>Dimensions</b>	55 mm (W)×82mm(D)×22.5mm (H)/Each
<b>Weight</b>	56 g/TX, 64 g/RX
<b>Chassis Material</b>	Plastic
<b>Silkscreen Color</b>	White
<b>Operating Temperature</b>	0 °C~40 °C/ 32 °F~104 °F
<b>Storage Temperature</b>	-20 °C~60 °C/-4 °F~140 °F
<b>Relative Humidity</b>	20~90% RH (non-condensing)
<b>Power Consumption</b>	3W/TX, 5.5W/RX



### CAT5e/6/7 Cable Specification:

LENGTH	BANDWIDTH	DATA RATE	SUPPORTED VIDEO
Up to 60m	Up to 225MHz	Up to 5.3Gbps	<b>HD Video</b> Up to 1080p@60Hz/36-bit, 3D (data rate lower than 5.3 Gbps or bandwidth below 225MHz).
Up to 35m	Greater than 225MHz	Greater than 5.3Gbps	<b>Ultra HD Video</b> Up to 4K×2K@30Hz.

## 9. ACRONYMS

ACRONYM	COMPLETE TERM
<b>CAT5e</b>	Category 5 Cable
<b>CAT6</b>	Category 6 Cable
<b>CAT7</b>	Category 7 Cable
<b>CEC</b>	Consumer Electronics Control
<b>DVI</b>	Digital Visual Interface
<b>HDCP</b>	High-bandwidth Digital Content Protection
<b>HDMI</b>	High-Definition multimedia Interface
<b>IR</b>	Infrared





**CYPRESS TECHNOLOGY CO., LTD**  
Home page: <http://www.cypress.com.tw>

MPM-CH514TXLRXL