



## CH-106TXN & RXN

HDMI over CAT5e/6 Transmitter and Receiver Set  
with IR Source Control



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 DD/MM/YY	SUMMARY OF CHANGE
VR0	17/01/13	Preliminary Release
VS1	19/04/13	Updated format/diagrams



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## 1. INTRODUCTION

This HDMI over CAT5e/6 Transmitter and Receiver Set with IR Source Control can extend HDMI signals over dual CAT5e/6 cabling up to 45m. It has the added benefit of allowing the control of a source device with your existing Remote Control with the included IR Extender and Blaster cables.

## 2. APPLICATIONS

- Showroom Display and Control
- Home Entertainment systems
- Commercial/Retail Installations
- Commercial Display
- University Lecture Hall display

## 3. PACKAGE CONTENTS

- 1×HDMI over CAT5e/6 Transmitter with IR Source Control
- 1×HDMI over CAT5e/6 Receiver with IR Source Control
- 1×IR Extender Cable
- 1×IR Blaster Cable
- 2×5 V/2.6 A DC Power Supply Adaptor
- Operation Manual

## 4. SYSTEM REQUIREMENTS

HDMI source device such as a DVD/Blu-ray player and HDMI equipped display (TV or monitor), dual CAT5e/6 cables and the source device's remote control

## 5. FEATURES

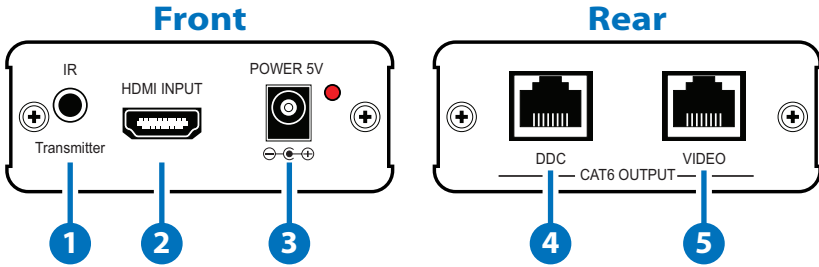
- Compliant with HDMI, HDCP 1.1 and DVI 1.0 standards
- Supports high definition digital video and lossless, compressed digital audio (Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio)
- Supports dual CAT5e/6 cables for Video/Audio and data/DDC transmission
- Equalizes and recovers incoming TMDS data before re-transmitting it in optimum quality
- Supports high definition resolutions, up to 1080p@8-bit
- Supports HDMI input cable length of up to 6 meters and output cable length of 10 meters at 1080p/8-bit resolution
- Supports transmission of 1080p@8-bit resolution signals up to 45 meters over dual CAT5e/6 cables
- Supports CEC bypass and x.v.YCC
- Supports a wide range of IR frequencies, from 30 kHz to 50 kHz

### Note:

1. *This system was tested with CAT6/23AWG solid core cables, results may vary with cables of a different specification.*
2. *Cable distance tested with the following devices: PS3 20G, 37" Philips 8 bit LCD TV and 37" Samsung 12 bit LCD TV*
3. *Figures provided in this manual are for reference only, actual performance may vary depending on the source and display devices as well as the type of cable being used.*

## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Transmitter Front and Rear Panels



#### 1 IR TRANSMITTER

Connect to the supplied IR blaster cable for IR signal transmission. Place the IR blaster in direct line of sight of the equipment to be controlled.

#### 2 HDMI INPUT

Connect to an HDMI source such as a DVD or Blu-ray player.

#### 3 POWER 5V

Connect the 5V DC power supply to the unit and plug the adaptor into an AC outlet.

#### 4 DDC OUTPUT

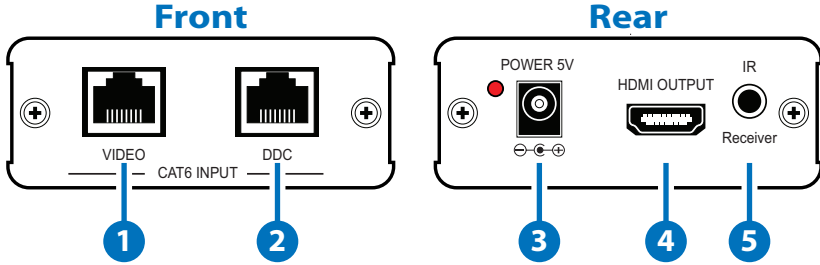
Connect the DDC output of the transmitter to the DDC input of the receiver using a CAT5e/6 cable.

#### 5 VIDEO OUTPUT

Connect the video output of the transmitter to the video input of the receiver using a CAT5e/6 cable.



## 6.2 Receiver Front and Rear Panels



### 1 VIDEO INPUT

Connect the video output of the transmitter to the video input of the receiver using a CAT5e/6 cable.

### 2 DDC INPUT

Connect the DDC output of the transmitter to the DDC input of the receiver using a CAT5e/6 cable.

### 3 POWER 5V

Plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet.

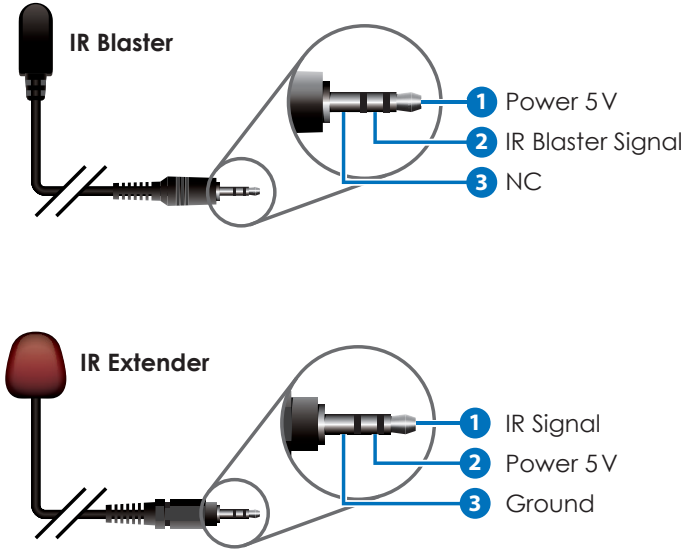
### 4 HDMI OUTPUT

Connect the HDMI output to the HDMI or DVI input (with a HDMI to DVI adaptor) of a display such as an HDTV or HD monitor.

### 5 IR RECEIVER

Connect to the supplied IR extender cable for IR signal reception. Ensure that remote control being used is within the direct line-of-sight of the IR extender.

### 6.3 IR Cable Pin Assignment



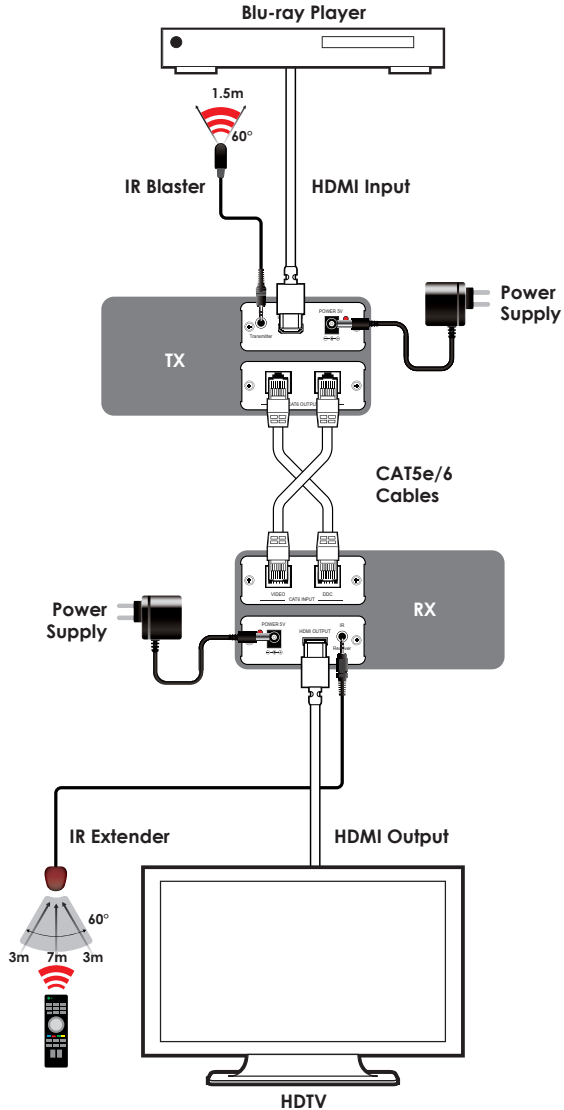
### 6.4 RJ-45 Pin Definition

PIN	VIDEO	DDC
1	TMDS2+	SCL
2	TMDS2-	N/A
3	TMDS1+	SDA
4	TMDS1-	Power 5V
5	TMDS0+	GND
6	TMDS0-	IR
7	TMDS0+	HPD
8	TMDS0-	CEC

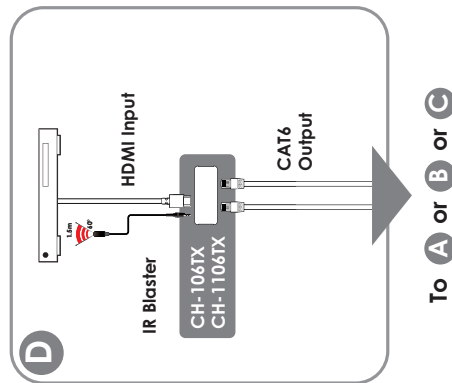
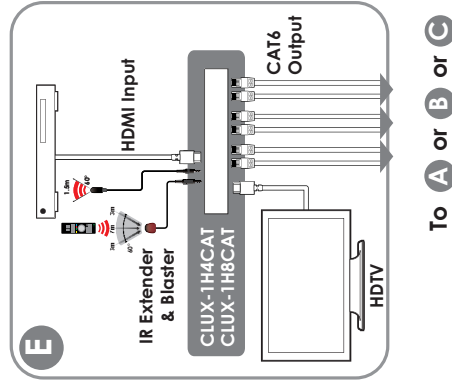
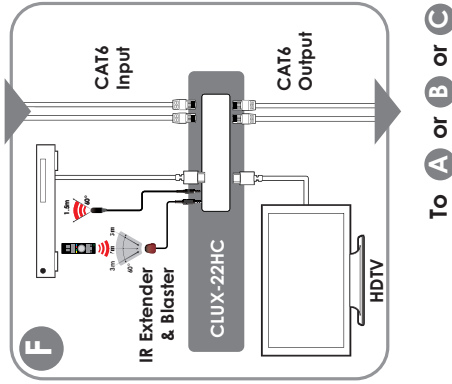
## 7. CONNECTION DIAGRAMS

### 7.1 Typical Connection Example

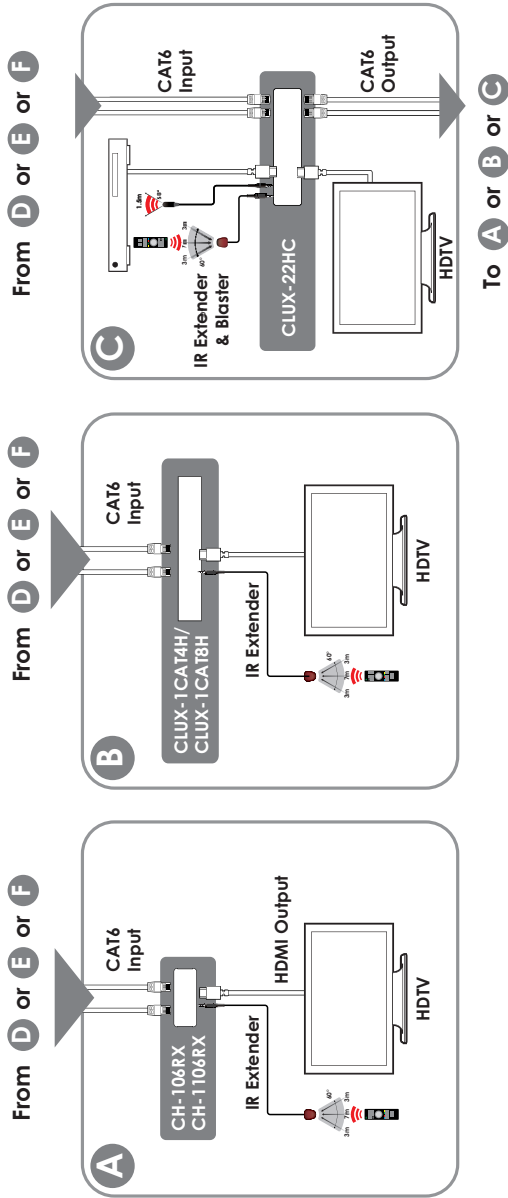
Typical Connection Example:



## 7.2 Input Connection Examples



### 7.3 Output Connection Examples





## 8. SPECIFICATIONS

### 8.1 Technical Specifications

<b>Transmitter</b>	1×HDMI, 1×IR Blaster, 1×CAT5e/6 Output Video, 1×CAT5e/6 Output DDC
<b>Receiver</b>	1×HDMI, 1×IR Extender, 1×CAT5e/6 Input Video, 1×CAT5e/6 Input DDC
<b>HDMI Input Cable</b>	1080p/8-bit (6 m)
<b>HDMI Output Cable</b>	1080p/8-bit (10 m)
<b>CAT5e/6 Cable</b>	1080p/8-bit (45 m)
<b>Power Supply</b>	5 V/2.6 A DC (US/EU standards, CE/FCC/UL certified))
<b>ESD Protection</b>	Human body model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)
<b>Dimensions</b>	78.5 mm (W)×72 mm (D)×30 mm (H)/each
<b>Weight</b>	140 g/each
<b>Chassis Material</b>	Aluminum
<b>Color</b>	Silver
<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>	2.7 W/TX, 3.2 W/RX

## 8.2 Compatible Products

The models (Dual CAT5e/6) listed below are compatible with each other:

- CH-106TX/CH-106RX/CH-106TXN/CH-106RXN
- CH-1106TX/CH-1106RX/CH-1106RXN
- CMLUX-4H4CAT
- CLUX-1H8CAT
- CLUX-1H4CAT
- CLUX-1CAT8H
- CLUX-1CAT4H
- CLUX-22HC

## 9. ACRONYMS

ACRONYM	COMPLETE TERM
<b>CAT5e</b>	Category 5 Cable
<b>CAT6</b>	Category 6 Cable
<b>CEC</b>	Consumer Electronics Control
<b>DDC</b>	Display Data Channel
<b>DVI</b>	Digital Visual Interface
<b>ESD</b>	Electrostatic Discharge
<b>GND</b>	Ground
<b>HDCP</b>	High-bandwidth Digital content protection
<b>HDMI</b>	High Definition Multimedia Interface
<b>IR</b>	Infrared



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