

# CH-1106TX & RX

HDMI v1.3 to CAT6  
Transmitter & Receiver  
with IR return control

*Operation Manual*



CH-1106TX & RX



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## • **Safety Precautions**

Please read all instructions before attempting to unpack or 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 module openings or empty slots, as you may damage parts.
- Do not attach the power supply cabling to building surfaces.
- Do not allow anything to rest on the power cabling or allow it to be abused by persons walking on it.
- To protect the equipment from overheating, do not block the slots and openings in the module housing that provide ventilation.

## • **Revision History**

<i>Version No</i>	<i>Date</i>	<i>Summary of Change</i>
<b>V1</b>	<b>20091020</b>	<b>Preliminary Release</b>

# ***Table of Contents***

<b>1. Introduction</b> .....	1
<b>2. Applications</b> .....	1
<b>3. Package Contents</b> .....	1
<b>4. System Requirements</b> .....	1
<b>5. Features</b> .....	2
<b>6. Specifications</b> .....	3
<b>7. Operation Controls and Functions</b> .....	4
7.1 Front Panel .....	4
7.2 Rear Panel .....	5
<b>8. Pin Assignment</b> .....	6
8.1 IR Cable Pin Assignment .....	6
8.2 RJ-45 Pin Definitions .....	6
<b>10. Connection and Installation</b> .....	7
<b>11. Acronyms</b> .....	9

## **1. Introduction**

The HDMI 1.3 transmitter and receiver over CAT6 is the ideal device to send your HDMI signals over long distances. Instead of using expensive HDMI cables, your existing CAT6 cables/sockets can replace HDMI cables while performing the same functions like transferring Deep Color (12 bits/color) video and lossless compressed (Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio) digital audio. Moreover, you can use the existing remote to control the source and connect it to another transmitter and receiver to extend your HDMI signal to distances you never thought possible. This HDMI 1.3 Transmitter and receiver is your only choice when looking for an HDMI extender.

## **2. Applications**

- Showroom display/control
- Home entertainment systems
- Commercial displays
- Lecture room display/control

## **3. Package Contents**

- HDMI 1.3 Transmitter x 1
- HDMI 1.3 Receiver x 1
- IR Eye Receiver cable x 1
- IR Eye Blaster cable x 1
- 5V DC power supply adaptor x 2
- Operation Manual x 1

## **4. System Requirements**

HDMI input source equipment, output HDMI displayer, two CAT6 cables and source equipment's remote control.

## 5. Features

- HDMI 1.3, HDCP 1.1 and DVI 1.0 compliant.
- Supports digital video formats in Deep Color Mode at up to 36 bits (12bits/ color) and new lossless compressed (Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio) digital audio .
- Supports CAT-6 cables for data/DDC transmission
- Equalizes and recovers any incoming TMDS data before re-transmitting it in flawless quality regardless of the incoming signal.
- HDMI cable distance testing showed with 1080p/8bits & 12bits resolution the Input/Output distance can reach up to 15/15 meters away. With CAT6 cable, distance test with 1080p/8bits & 12bits resolution the I/O source can run up to 45/20m away.

### **Note:**

- A. Cable tested with CAT-6E /23AWG/Solid, using cables of another type may result in a different operating distance.
  - B. Cable distance tested with equipment PS3 40G, 37" Philips 8 bit LCD TV and 37" SamSung 12 bit LCD TV.
  - C. Figures provided in this manual are for reference only, actual figures may depend on the source and display used along with the type of cable.
- Supports CEC bypass and xvYCC
  - Includes an IR Receiver and Blaster
  - Supports wide range of IR frequencies from 20~60KHz
  - Can be connected to another transmitter and receiver to extend an HDMI signal to an extreme distance

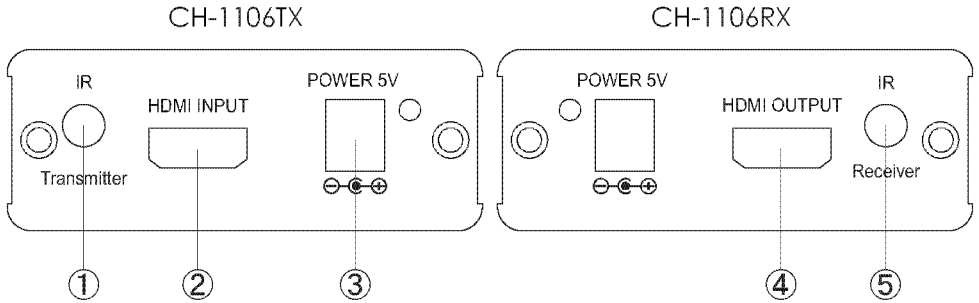
## 6. Specifications

Transmitter	1 x HDMI 1 x IR Blaster 1 x CAT-6 Output Video 1 x CAT-6 Output DDC
Receiver	1 x HDMI 1 x Receiver 1 x CAT-6 Input for Video, 1 x CAT-6 Input for DDC
HDMI Input Cable	1080p 8-bit (15M), 12-bit (15M)
HDMI Output Cable	1080p 8-bit (15M), 12-bit (15M)
CAT6 Cable	1080p 8-bit (45M), 12-bit (20M)
Power Supply	5V/1A (US/EU standards, CE/FCC/UL certified) (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: $\pm 8\text{kV}$ (air-gap discharge) $\pm 4\text{kV}$ (contact discharge)
Dimensions (mm)	78.5(W) x 117(D) x 30(H) / Transmitter 78.5(W) x 72(D) x 30(H) / Receiver
Weight(g)	200 / Transmitter 90 / Receiver
Chassis Material	Aluminum
Silkscreen Color	Silver
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Power Consumption	3.6W/TX, 3.6W/RX
Relative Humidity	20 ~ 90% RH (non-condensing)



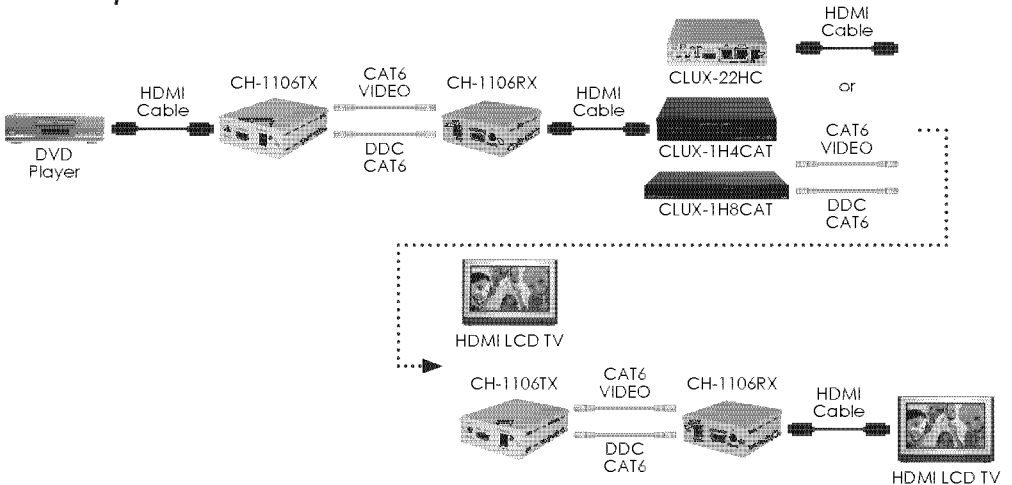
# 7. Operation Controls and Functions

## 7.1 Front Panel



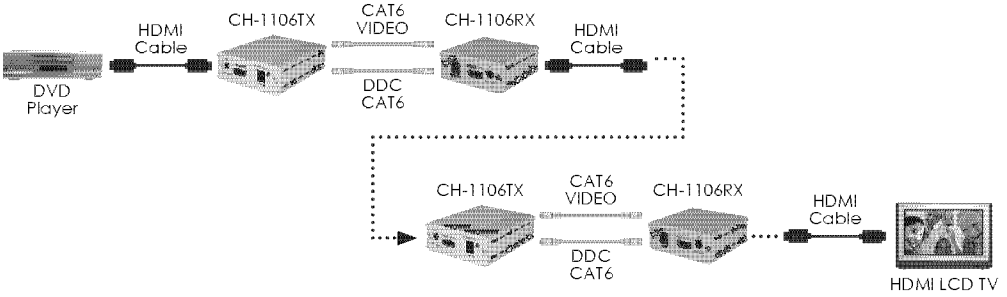
- ① IR Transmitter: This slot is where you connect the IR blaster cable. Place the IR eye in front of the source equipment(s) in order to send an IR signal, the IR blaster has a frequency range from 20KHz to 60KHz.
- ② HDMI INPUT: This slot is where you connect the HDMI or DVI output port of your source equipment such as DVD/Blu Ray players or set-top-boxes with an HDMI cable or receiver unit, you may also connect this device to another unit from the same family or some other type of splitter to further extend an HDMI signal.

**Example:**



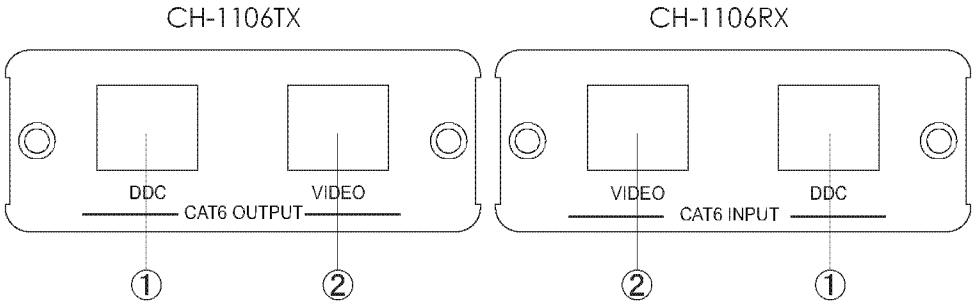
- ③ Power: This slot is where you plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet.
- ④ HDMI OUTPUT: This slot is where you connect the HDMI or DVI input port of your display such as HDTV's or HD monitors or you can connect this device to another unit from the same family or some other type of splitter to further extend an HDMI signal.

**Example:**



- ⑤ IR Receiver: This slot is where you connect the IR receiver cable and place the IR eye in front of the display then use the existing remote controls to control input source equipment(s). The IR receiver accepts the frequency range from 20KHz to 60KHz.

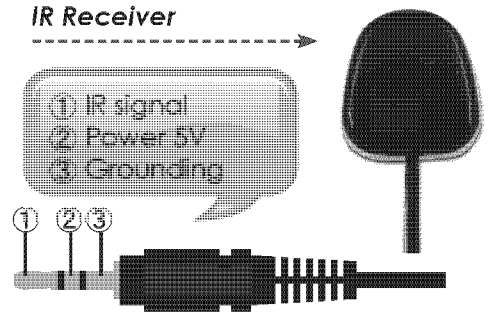
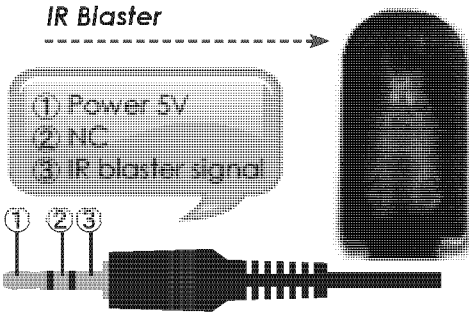
**7.2 Rear Panel**



- ① DDC input/output: Connect the DDC output of transmitter to the DDC input of the receiver unit using a CAT-6 cable.
- ② Video input/output: Connect the video output of the transmitter to the video input of the receiver unit using a CAT-6 cable.

## 8. Pin Assignment

### 8.1 IR Cable Pin Assignment

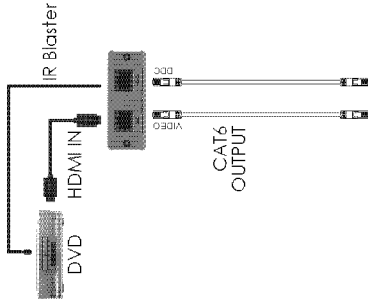
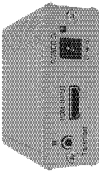


### 8.2 RJ-45 Pin Definition

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

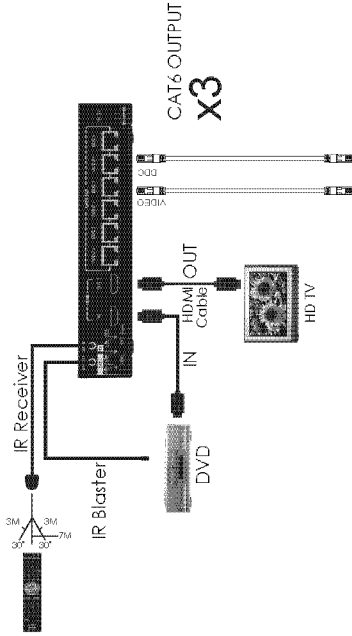
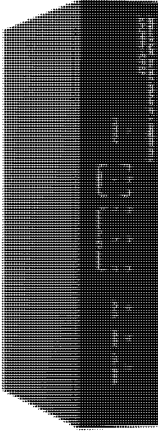
# 10. Connection and Installation

CH-106TX  
CH-1106TX



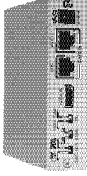
AorBotC

CLUX-1H4CAT  
CLUX-1H8CAT

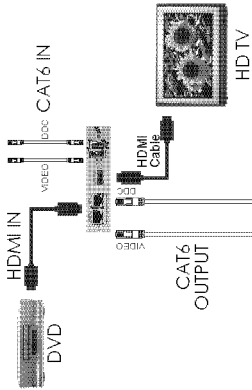


AorBotC

CLUX-22HC

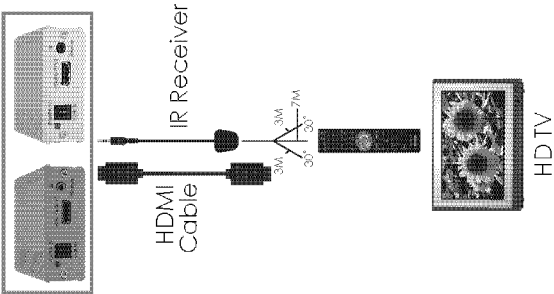


CH-106TX  
CH-1106TX  
CLUX-1H4CAT  
CLUX-1H8CAT  
CMLUX-4H4CAT  
CLUX-22HC

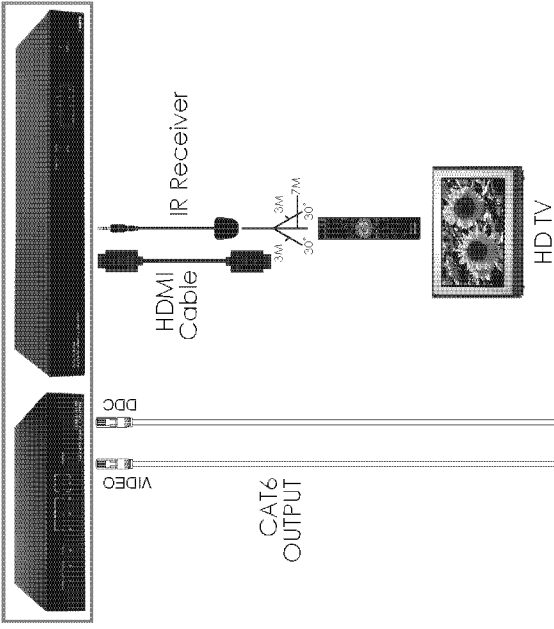


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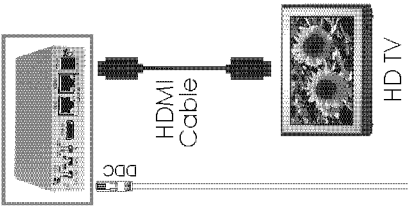
**A**  
CH-106RX / CH-1106RX



**B**  
CLUX-1CAT4H / CLUX-1CAT8H

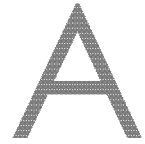


**C**  
CLUX-22HC



A or B or C

A or B or C



# Acronyms

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<b>Acronym</b>	<b>Complete Term</b>
CAT6	Category 6 cable
DVI	Digital Visual Interface
ESD	Electrostatic Discharge
GND	Ground
HDCP	High-Bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
IR	Infrared





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