satson®

HDMI-EXT-501CO

HDMI Extender over Single Coax with Bi-directional IR

Full HD 1080

7.1 CH AUDIO

CE

FC

RoHS Compliance

HDCP
HIGH-DEFINITION CONTENT PROTECTION

HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE

Blu-ray 3D READY

IR 20-60kHz

rev: 110705
Made in Taiwan

Safety and Notice

The **HDMI-EXT-501CO** **HDMI Extender over Single Coax with Bi-directional IR** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **HDMI-EXT-501CO** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

● Follow all instructions and warnings marked on this unit.

● Do not attempt to service this unit yourself, except where explained in this manual.

● Provide proper ventilation and air circulation and do not use near water.

● Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.

● Use only the power adapter and power cords and connection cables designed for this unit.

● Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

TABLE OF CONTENTS

INTRODUCTION

The **HDMI-EXT-501CO** **HDMI Extender over Single Coax with Bi-directional IR** boosts up your HDMI transmission range up to 120m (394ft) in HDTV 1080p format through single coaxial cable. HDMI-EXT-501CO is easy to install and works perfectly with Belden 1694A coaxial cables. Other coaxial cables can also work with HDMI-EXT-501CO and the transmission distance depends upon the quality and bandwidth of coaxial cables. In addition, HDMI-EXT-501CO is also equipped with bi-directional IR pass-through path. This bonus feature allows users to rely on the same coax cable to have IR control on IR equipped devices, such as TV and BD players, and HDMI-EXT-501CO makes IR control possible through only single coax cable along with high quality HDMI A/V signals.

The HDMI-EXT-501CO includes two units: transmitting (HDMI-EXT-501CO[TX]) and receiving (HDMI-EXT-501CO[RX]) units. The transmitting unit is used to capture the HDMI and HDCP input signals and carry the signals through only coaxial cable. The receiving unit is responsible for auto equalizing the transmitted HDMI multimedia data. The transmission range between the sending and receiving units can be up to 120m (394ft) under Full HD (1080p) with 7.1 channel audio.

FEATURES

- HDMI 1.3a compliant
- HDCP compliant
- Single coaxial cable
- 7.1-channel audio supported
- Extends the transmission range up to 120m (394ft) from the HDMI sources under Full HD resolution (1080p60 24-bit color depth) through Belden 1694A coaxial cable.
- Video resolutions support 480i, 576i, 720p, 1080i, and 1080p
- Bi-directional IR path
- Wall mounting housing design for easy and robust installation

i *The length depends on the characteristics and quality of the coax cables. Higher resolutions and longer transmission distances require low skew cables for best performance. Solid and shielded coax cable such as Belden 1694A with metal 75ΩBNC connectors is recommended.*

SPECIFICATIONS

Model Name	HDMI-EXT-501CO	
Technical	**HDMI-EXT-501CO[Tx]**	**HDMI-EXT-501CO[Rx]**
Role of usage	Transmitter [TX]	Receiver [RX]
HDMI compliance	HDMI 1.3a (Does NOT support 3D)	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 720p / 1080i / 1080p60 (Does NOT support 480p)	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
HDMI over Coax transmission range	Full HD [1080p 24-bit color] – up to 120m [394ft]	
HDMI Equalization	Auto	
Input TMDS signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
ESD protection	[1] Human body — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±4kV	
PCB stack-up	6-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	1x HDMI 1x IR socket	1x BNC 1x IR socket
Output	1x BNC 1x IR socket	1x HDMI 1x IR socket
IR remote control	Electro-optical characteristics: π = 25° / Carrier frequency: 20-60kHz	
HDMI connector	Type A [19-pin female]	
BNC connector	75Ω interlocking socket	
3.5mm connector	3.5mm earphone jack for IR blaster to control HDMI source device	

| Mechanical		
Housing		Metal enclosure
Dimensions [L x W x H]	Model	80 x 85 x 29mm [3.1" x 3.3" x 1.1"]
	Package	175 x 270 x 80mm [6.9" x 10.4" x 3.1"]
	Carton	370 x 450 x 300mm [1.3" x 1.6" x 1"]
Weight	Model	311g [11oz]
	Package	622g [1.37 lbs]
Fixedness		Interlocking power supply
Power supply		5V 4A DC
Power consumption		6 Watt [max]
Operation temperature		0~40°C [32~104°F]
Storage temperature		-20~60°C [-4~140°F]
Relative humidity		20~90% RH [no condensation]

PACKAGE CONTENTS

- 1x HDMI-EXT-501CO [TX & RX]
- 1x IR blaster
- 1x IR receiver
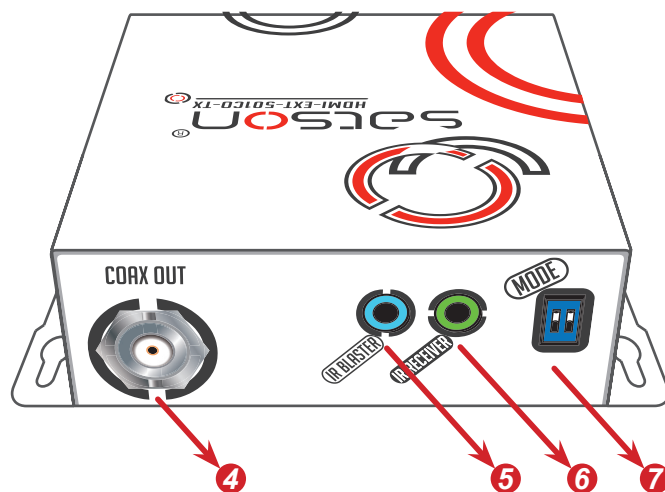- 2x DC 5V 2A wall wart
- 1x User Manual

Transmitting unit ▶ HDMI-EXT-501CO-TX
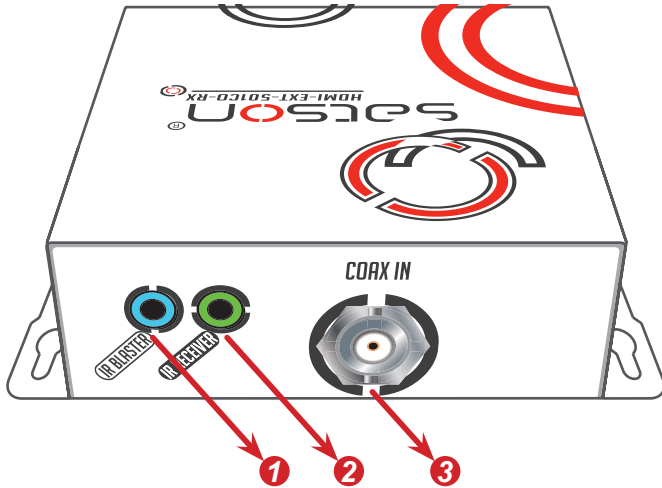
Front Panel
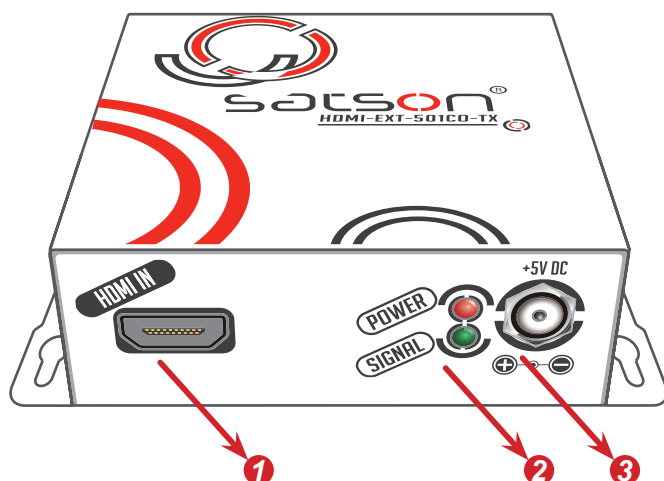
Rear Panel

1 **HDMI IN:** Connects to a HDMI source device with a HDMI male-to-male cable here

2 **POWER/SIGNAL LED:** Red light - POWER; Green light - SIGNAL ACTIVE.

3 **+5V DC:** Connects to 5V DC power supply.

4 **COAX OUT:** Connects to a high standard coaxial cable here

5 **IR BLASTER:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster

6 **IR RECEIVER:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver

7 **MODE:** Please see table below for detail information

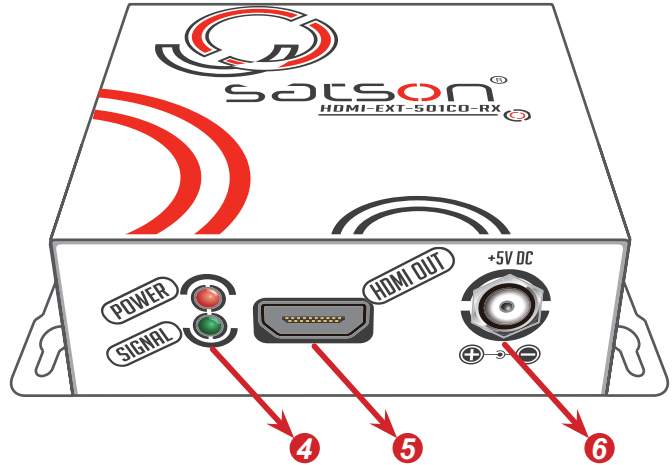| Pin #1	Pin #2	EDID feature
OFF (↑)	OFF (↑)	3G/HD/SD-SDI with multi-channel audio except DTS-HD Master & Dolby TrueHD
OFF (↑)	ON (↓)	3G/HD/SD-SDI With stereo PCM audio
ON (↓)	OFF (↑)	HD/SD-SDI With stereo PCM audio
ON (↓)	ON (↓)	EDID Learning Mode

Factory default: OFF-OFF [↑-↑]

# Receiving unit ► HDMI-EXT-501CO-RX

Front Panel

Rear Panel

1. **IR BLASTER:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster
2. **IR RECEIVER:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver
3. **COAX IN:** Connect to a high standard coaxial cable here.
4. **POWER/SIGNAL LED:** Red light - POWER; Green light - SIGNAL ACTIVE.
5. **HDMI OUT:** Connects to a HDMI display with a HDMI male-male cable here
6. **+5V DC:** Connects to a 5V DC power supply unit

EDID LEARNING

1. Please make sure the Pin #1 - Pin #2 of DIP switch is at On-On [⬇-⬇].
2. Connect the HDMI display to the HDMI port of TX.
3. Power on TX.
4. The green LED in the transmitting module will light up indicating the EDID learning procedure is complete.
5. Please DO NOT change the DIP switch, otherwise the built-in EDID Learning information will be lost.
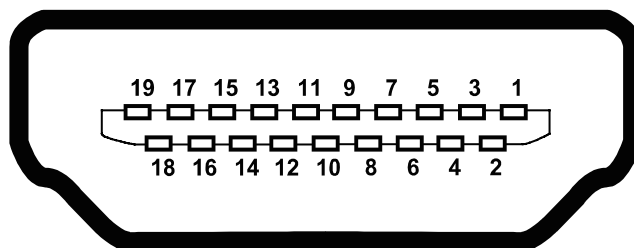
CONNECTION DIAGRAM

Coaxial Cable
HDMI Cable
IR Cable
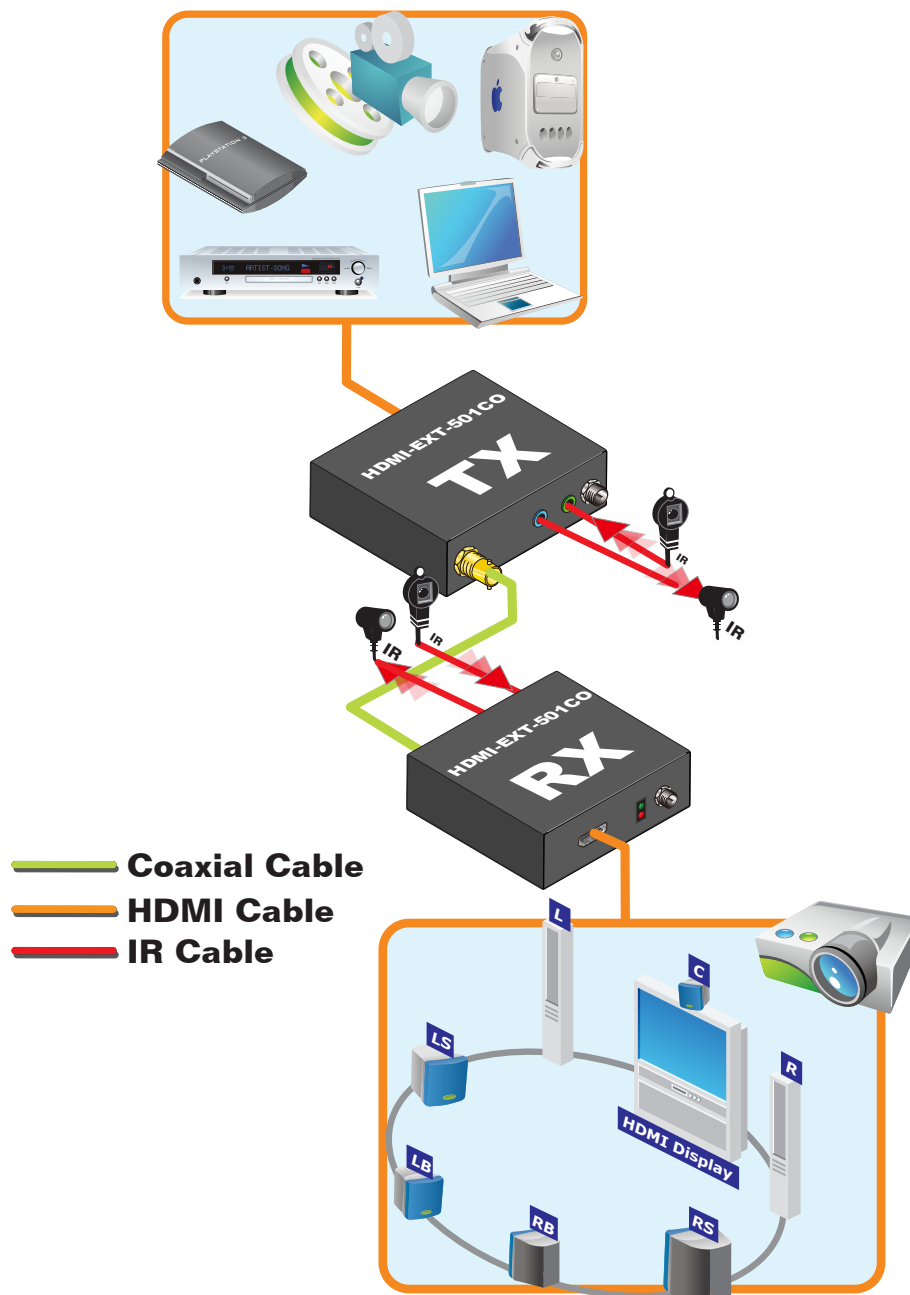
HDMI

Type A (Receptacle) HDMI

Pin 1	TMDS Data2+	Pin 8	TMDS Data0 Shield	Pin 15	SCL
Pin 2	TMDS Data2 Shield	Pin 9	TMDS Data0–	Pin 16	SDA
Pin 3	TMDS Data2–	Pin 10	TMDS Clock+	Pin 17	DDC/CEC Ground
Pin 4	TMDS Data1+	Pin 11	TMDS Clock Shield	Pin 18	+5V Power
Pin 5	TMDS Data1 Shield	Pin 12	TMDS Clock–	Pin 19	Hot Plug Detect
Pin 6	TMDS Data1–	Pin 13	NC		
Pin 7	TMDS Data0+	Pin 14	Reserved (N.C. on device)		

NOTICE

Since HDMI-EXT-501CO is sensitive to the HDMI source's input jitters, the input HDMI signals with larger jitters will shorten the transmission distance hugely, especially for full HD 1080p@60!

1. The lab testing result shows that Belden 1694A coaxial cables can transmit HDMI signals up to 120m (394ft).
2. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input #1] generally can produce better transmission performance among all HDMI inputs.
3. Please noticed that audio must be 48KHz and 480p is not supported.

satson®