satson®

# IR-EXT-050C

## IR over CAT5 Extender

## User Manual



CAT-5e/6/7 SINGLE

RoHS Compliance FC CE

Made in Taiwan

# Safety and Notice

The **IR-EXT-050C IR over CAT5 Extender** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the IR-EXT-050C 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.

# Introduction

The **IR-EXT-050C IR over CAT5 Extender** boosts up your IR control distance at least 100m (330ft). With single cost effective CAT-5 cable, users can readily extend and duplicate IR access to IR controllable devices such as Blue-ray disc players and TV to increase application flexibility. Typical applications include digital signage, education and demonstration system, and home theater. IR-EXT-050C includes two units: transmitting (IR-EXT-050C [Tx]) and receiving (IR-EXT-050C [Rx]) units.

## Features

- Support full bandwidth of IR signal, 20KHz ~ 60KHz
- Built-in IR splitter on TX and RX unit
- Bi-directional IR path
- Super long extension distance
- Single power supply on either TX or RX unit
- Easy to install
- Wall mounting housing design for easy and robust installation

***The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.***

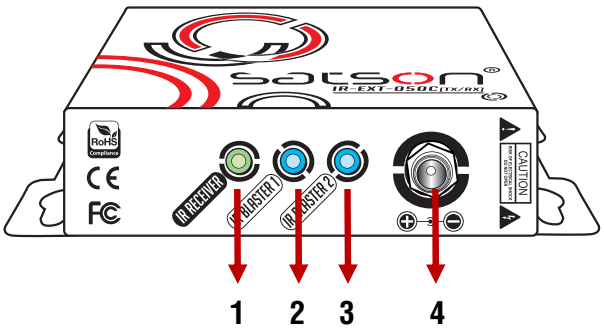
# Specifications & Package Contents

| Model Name | | IR-EXT-050C | |
|---|---|---|---|
| **Technical** | | **TX** | **RX** |
| Role of usage | | Transmitter and Splitter | Receiver and Splitter |
| IR bandwidth | | 20 ~ 60 KHz | |
| ESD protection | | Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] | |
| Input | | 1x 3.5mm | 1x RJ-45 + 1 x 3.5mm |
| Output | | 1x RJ-45 + 2x 3.5mm | 2 x 3.5mm |
| RJ-45 connector | | WE/SS 8P8C with 2 LED indicators | |
| 3.5mm connector | | Earphone jack for IR Transmitter or Receiver cable | |
| IR remote control | | Electro-optical characteristics: τ = 25°<br>Carrier frequency: 20-60kHz | |
| **Mechanical** | | | |
| Housing | | Metal enclosure | |
| Dimensions (L x W x H) | Model | [TX/RX] 75 x 55 x 25mm [3.0”x2.2”x1”] | |
| | Package | 270 x 175 x 80mm [10.6” x 6.9” x 3.1”] | |
| | Carton | 450 x 370 x 300mm [1’6” x 1’3” x 1’] | |
| Weight | Model | 270g [9.5oz] | |
| | Package | 670g [1.5 lbs] | |
| Fixedness | | Wall-mounting case with screws upon request | |
| Power supply | | Inter-locked 5V 2A DC | |
| Power consumption | | 1 Watts [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 IR-EXT-050C<br>1x User Manual<br>1x 5V 2A interlocked wall wart power adapter | |

***In fact, there is no diffference between TX and RX. Therefore customer can take any as TX or RX without any limitation.***

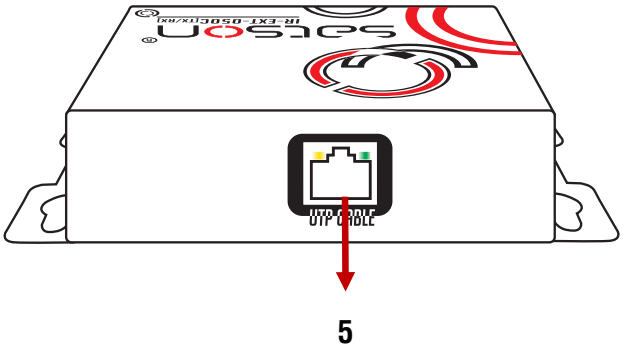
# Panel Descriptions

## IR-EXT-050C-TX/RX Front Panel




1. **IR receiver:** Connect to a IR receiver cable
2. **IR local output1:** Connect to a IR transmitter cable
3. **IR local output2:** Connect to a IR transmitter cable
4. **+5V power input:** Connect to the +5V power adaptor

## IR-EXT-050C-TX/RX Rear Panel




5. **RJ-45 output**: Plug in a CAT-5/5e/6 cable that needs to be linked to the RJ-45 connector of another unit.

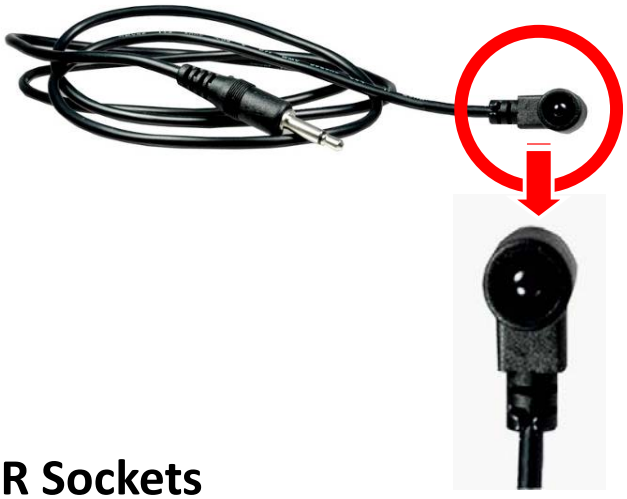
# Hardware Installation

1. Connect the IR receiver cables to both TX and RX units.
2. Connect the IR transmitter cables to both TX and RX units.
3. Connect one Cat-5/5e/6 cable between TX and RX unit.
4. Make sure your Cat-5/5e/6 cables are tightly connected and not loose.
5. Plug the +5V power supply to the power jack on either TX or RX unit.

# IR Pass-through

## IR Extenders

**IR Blaster**



**IR Receiver**

## IR Sockets

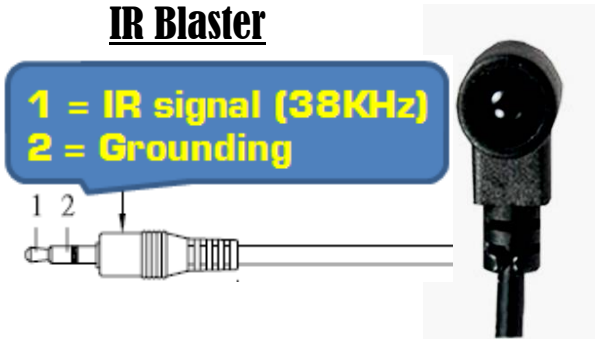
**IR Blaster**: Plug in the IR blaster here to emit all IR command signals received from the IR receiver to control the source devices.

**IR Receiver**: Plug in the IR receiver here to receive all IR command signals from the IR remote controls of the source devices.

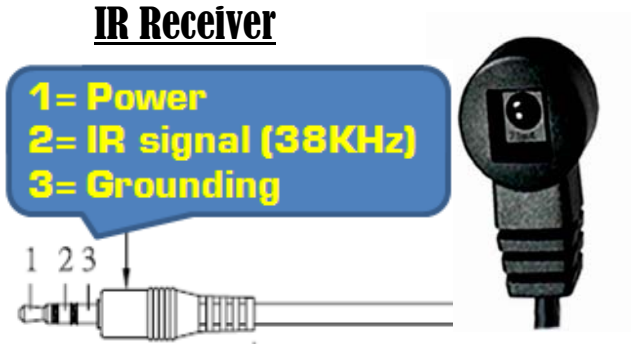
***CAUTION!***
***Wrongly insert IR blaster and IR receiver to wrong 3.5mm infrared sockets may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets.***

## Definition of IR Earphone Jack

**IR Blaster**




**IR Receiver**




***You can buy any IR extension cables in the market that are compatible to the definition of the IR sockets for the matrix if necessary for replacement use. However, IR cables longer than 2m (6-ft) may not work.***

# Notice

1. The transmission length is largely affected by the type of Cat-5/5e/6 cables. The testing result shows solid UTP cables (usually in bulk cable 300m/1000ft form) can transmit a lot longer signals than stranded UTP cables (usually in patch cord form). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat-5e cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
2. EIA/TIA-568-B termination (T568B) for LAN cables is recommended for better performance.
3. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use shielded STP cables to improve EMI problems, which is worsen in long transmission.
4. Because the quality of the Cat-5/5e/6 cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables.

## Performance Guide for HDMI over CAT5/6 Cable Transmission

| Performance rating | | Type of CAT5/6 cable | | |
|---|---|---|---|---|
| **Wiring** | **Shielding** | **CAT5** | **CAT5e** | **CAT6** |
| Solid | Unshielded (UTP) | ★★★ | ★★★★ | ★★★★★ |
| | Shielded (STP) | ★★★ | ★★★ | ★★★★ |
| Stranded | Unshielded (UTP) | ★ | ★★ | ★★ |
| | Shielded (STP) | ★ | ★ | ★★ |
| **Termination** | | Please use **EIA/TIA-568-B** termination (**T568B**) at any time | | |

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