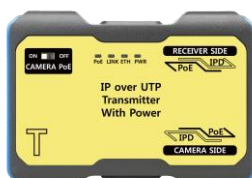




8-channel EoU Transmission kit with built-in PoE Switch HUB

SC-IPC0708HU

User Manual



TRANSMITTER



RECEIVER

Precaution and Safety Guidelines

The content of this guideline is intended to protect user safety and prevent property damage.

Please read these operating instructions carefully and use the device properly.



Warning (If you do not keep any of the below guidelines, you may get seriously injured or cause somebody's death.)

■ Be sure to install the product after unplugging power cord. Also, do not use many power plugs at the same time.

- It may cause abnormal heat, fire and electric shock.

■ Do not leave the device in a place where water will fall or splash. Also, do not place anything with water on it, such as a vase of flowers.

- A malfunction or fire may result if liquid gets inside the device

■ Do not bend the power cord by excessive force. Make sure the power cord is not crushed by heavy things.

- It may cause fire.

■ Do not open the lid arbitrarily as this device has high voltage part inside. Never disassemble, repair or modify it.

- Abnormal work could result in fire, electric shock, and injury.

■ Do not install this product in places with high humidity, dust, or soot.

- It may cause electric shock and fire.

■ Do not tug at the power cord section or unplug the power plug with wet hands. If the power cord is loose, do not plug in.

- There may be a risk of fire and electric shock.

■ Always keep the location clean and dust-free during or after installing the device. When cleaning the device, be sure to wipe it with a dry towel and do not use water, thinner, or organic solvents.

- It may cause malfunction or fire

■ Keep the device in a cool place where doesn't let direct sunlight. Keep it at a proper temperature and avoid heating appliances like candle or heater. Also, keep the equipment or tools away from places where people come and go.

- There is a risk of damage to the surface of the device and a risk of failure, electric shock or fire.

■ Pay attention to possible hazards in the workplace, such as wet floor, ungrounded power extension cables, old power cords and a lack of safety earth. Consult your place of purchase or professional if problems arise.

- It may cause fire and electric shock.

■ Keep the back of the product more than 15 cm and the sides more than 5 cm from the wall. Installing the product too close to the wall may bend, compress too much, or break the cable as various external input / output connectors such as power cords protrude from the back of the product.

- It may cause fire, electric shock and personal injury.

■ Concerning the input voltage for operating this device, a voltage range must be within 10% of rated voltage. Also, do not use a heat source such as a hair dryer, iron and refrigerator to the same power unit.

- It may cause abnormal heat, fire and electric shock.

■ When thunder or lightning strikes, please pay attention to the safety and unplug the power cord.



Caution (Failure to follow any of the following guidelines could result in personal injury or property damage.)

- **Avoid installing near strong magnetic fields or radio waves and wireless devices such as radio or TV.**
 - Install in a place that is free from magnetic, radio, or excessive vibration.
- **Proper ambient temperature and humidity are recommended.**
 - Avoid extremely high temperatures (above 50°C) or low (below -10°C), and humid conditions.
- **Do not place heavy items on the product or let foreign substances enter inside the device.**
 - It may cause failure.
- **Install the device in a well-ventilated place and avoid direct sunlight or heating devices.**
- **Install in a flat and stable place. Do not use an upright or inclined position.**
 - It may not work properly or it may be dangerous due to the device falling.
- **Strong shock or vibration may cause device failure. Be careful when using the device.**
 - Install the device in a location free from strong vibration.
- **If you notice any unusual noise or smell, unplug the power supply immediately and contact the place of purchase or service center.**
 - There may be a risk of fire and electric shock.
- **Rotate the air properly in the system operating room and secure the cover of the main body.**
 - It may be the cause of failure by environmental factors.
- **Contact the service center and have them checked regularly to keep the system working.**
 - We are not responsible for any damage caused by carelessness of the user.
- **Make sure the power cord is plugged into a grounded electrical outlet.**
 - There is a risk of electrical shock and personal injury.
- **Place the power plug in a location that is easy to operate.**
 - If a product fault has occurred, the power plug must be pulled out in order to switch off the device completely. The power switch on the main housing does not completely cut off the power supply.
- **When this device is used near devices that generate strong radio waves, such as Radio devices (TRANCEIVER, walkie-talkie, etc.), repeaters, etc. this can affect the video signal and abnormalities such as noise or cracks appear on the device. Do not use it, as this may cause the device to malfunction.**
- **Please be careful not to change the cable connection.**
- **When installing the product on a rack, be sure to install it separately from the equipment installed above and below.**
 - If there is no space for heat to be released between the products, equipment failure may occur due to heat saturation.
 - The life of the product may be shortened due to an increase in the internal temperature of the product.
- **UTP(Unshielded Twisted Pair) Cable is for indoor use only. Use a STP(Shield Twisted Pair) Cable which is shielded for outdoor use.**
- **Transmission distance may vary depending on the type of UTP cable.**
- **Refer to this user guide for any issues and enquiries. If you need professional assistance, please contact the place of purchase or our service center.**
- **Class A equipment (commercial broadcasting and communication equipment)**
 - This device is a business grade electromagnetic wave device (Class A). The seller or user is advised to take note of this, and the device is not intended for household use
- **Insulate the part where the cable connects to the connector so that the metal part is not exposed.**

1. Introduction

1-1. summary

This product is composed of transmitter, a 1-channel power superimposed IP transmission device, and 8-channel receiver with Switch HUB function.

Using an existing UTP cable, it transmits power to the transmitter and IP camera with one UTP cable, and at the same time receives the IP camera signal and transmits multi-channel IP camera data to NVR 1Port. It can also shorten the construction period and reduce the construction cost.

When using CAT.5e cable, network data can be transmitted up to 800m (when 10Mbps is set), so it can compensate for the shortcomings of the short transmission distance of Ethernet equipment using the existing UTP cable.

1-2. Product Features

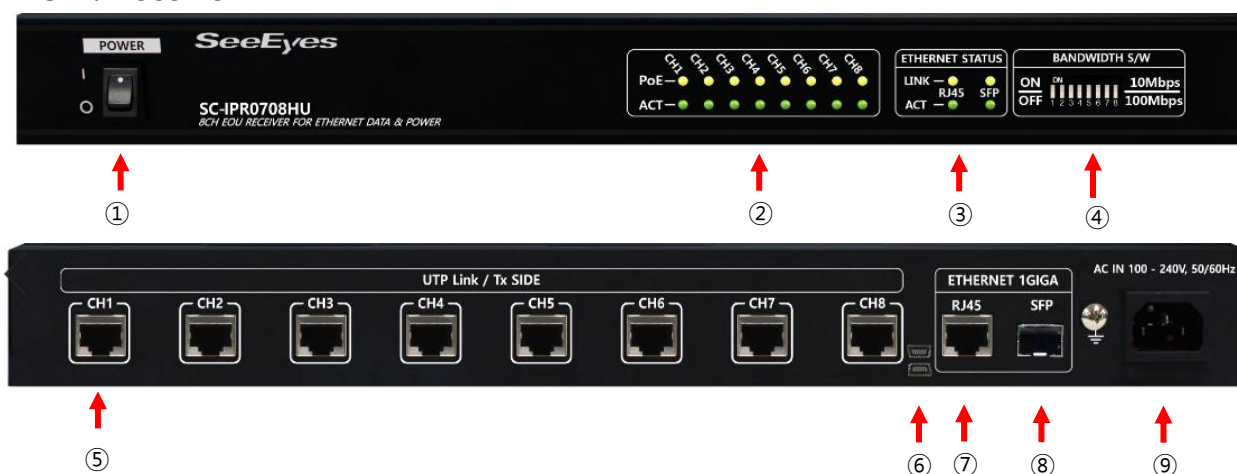
- Overlapping power and network data via 1 UTP cable
- Long-distance transmission of Network Data via 1 UTP cable
- ※ Transmission distance: 10Mbps setting → 800m / 100Mbps setting → 500m (based on CAT.5e)
- Built-in 10/100Mbps control switch to optimize transmission bandwidth by distance
- 8-channel receiver with Switching HUB function
 - RJ-45, SFP port provided (Choose 1)
- Safe power transmission with automatic line diagnosis function
- PoE ON/OFF switch mounted on transmitter
- Reduces installation costs by utilizing existing UTP cable lines
- PoE function (overlapping power) is installed, so there is no need to install power lines, so installation cost and construction period are reduced
- MULTICAST support
- Built-in surge protection circuit

2. Product Components

Receiver	POWER CORD	User's Manual	Bracket /SCREW Set
			
Transmitter	RJ-45 CABLE(8EA)	Mounting BRACKET(8EA)	
			

3. Name and function of each part

3-1. Receiver



① **POWER** : Power ON/OFF Switch

② **1~8channel Status LED**: Power status of each channel and Link/Act. information display.

Name	State	State Description
PoC	light on	Successful power input status of each channel
	flashing	Transmitter side power supply error of each channel (short circuit, disconnection, overcurrent)
	lights out	No power input for each channel
LINK/ACT	flashing	Successful connection status with the transmitter of each channel
	lights out	No connection with the transmitter of each channel

③ **UpLink Status LED**: NVR's Link and Act information display.

ETHERNET STATUS	Name	Satus Description
	LINK	Lit: Ethernet connection status successful Off: Ethernet not connected
	ACT	Blinking: Ethernet data is present Off: No Ethernet data

④ **Transmission distance extension switch (Bandwidth)** : 100Mbps, 10Mbps setting switch.

- You can change the transmission distance for each channel by turning ON↔OFF switches 1~8. ※ The factory default setting is 100 Mbps.

SWITCH		Transmission distance
ON	10Mbps	Maximum Transmission distance based on CAT.5e. : 800m
OFF(Default)	100Mbps	Maximum Transmission distance based on CAT.5e: 500m

⑤ **RJ-45 LINK from TRANSMITTER**: Transmitter connection terminal (RJ-45 8 ports).

⑥ **Program update port (manufacturer only)**: Product update terminal.

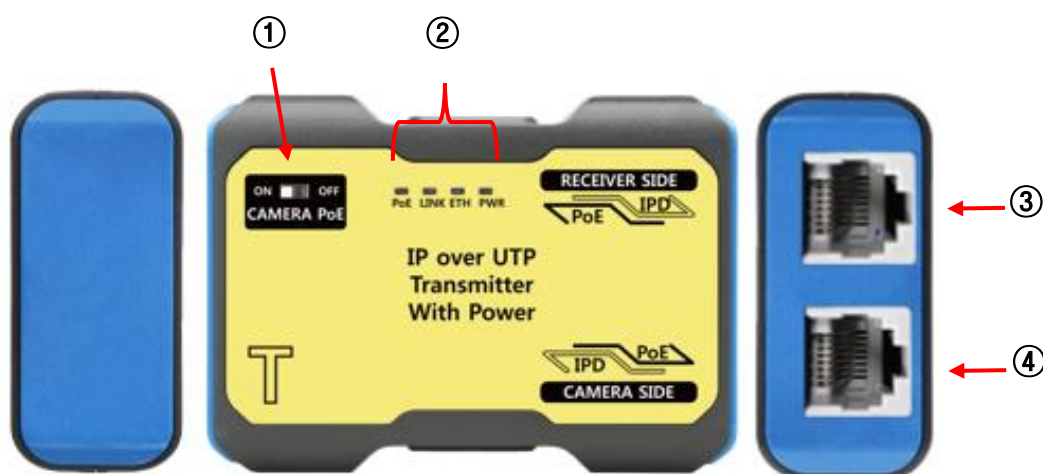
⑦ **NVR SIDE**: Connection terminal for NVR or Network device (RJ-45 1Port).

⑧ **SFP**: Connection terminal with NVR or Network device using optical module.

⑨ **AC INLET**: AC power input terminal.

※ Only one of the NVR SIDE RJ45 and SFP ports can be used.

3-2. Transmitter



① **CAMERA PoE:** Switch for setting the power supply of the IP PoE camera.

※ When connecting an IP PoE camera, set the CAMERA PoE switch to ON.

※ When the product is shipped, the PoE switch is set to PoE ON.

※ If you connect an IP camera that does not support PoE, set the CAMERA PoE switch to OFF.

② Status LED

Name	color	Status Description
PWR	Red	Lights up: power input is successful Off: No power input
ETH	Green	Blinking: Successful Ethernet connection Off: Ethernet not connected
LINK	Green	Lit: Successful connection with the receiver Off: Not connected to the receiver
PoE	Red	Lit: Successful PoE input to IP camera Off: No PoE to the IP camera Blinking: IP camera power supply error (short circuit, disconnection, overcurrent)

③ **RECEIVER SIDE:** Receiver connection and video output terminal.

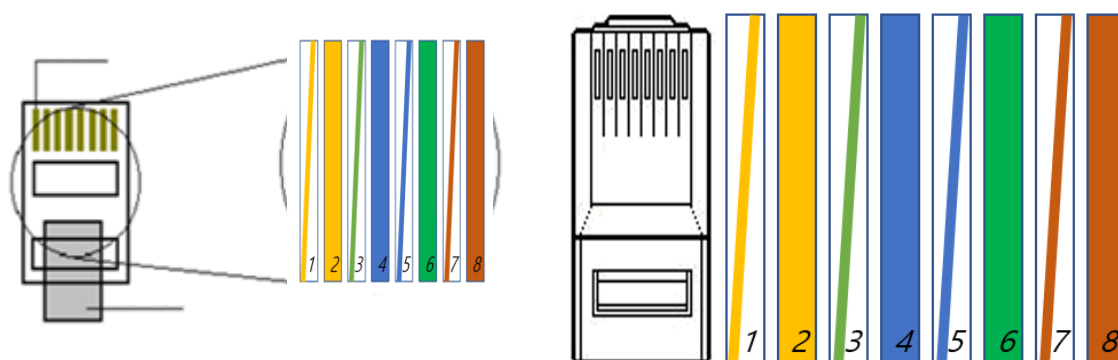
④ **CAMERA SIDE:** IP camera connector.

※ Precautions

Power is supplied with the UTP cable, so be sure to connect only to the dedicated product.

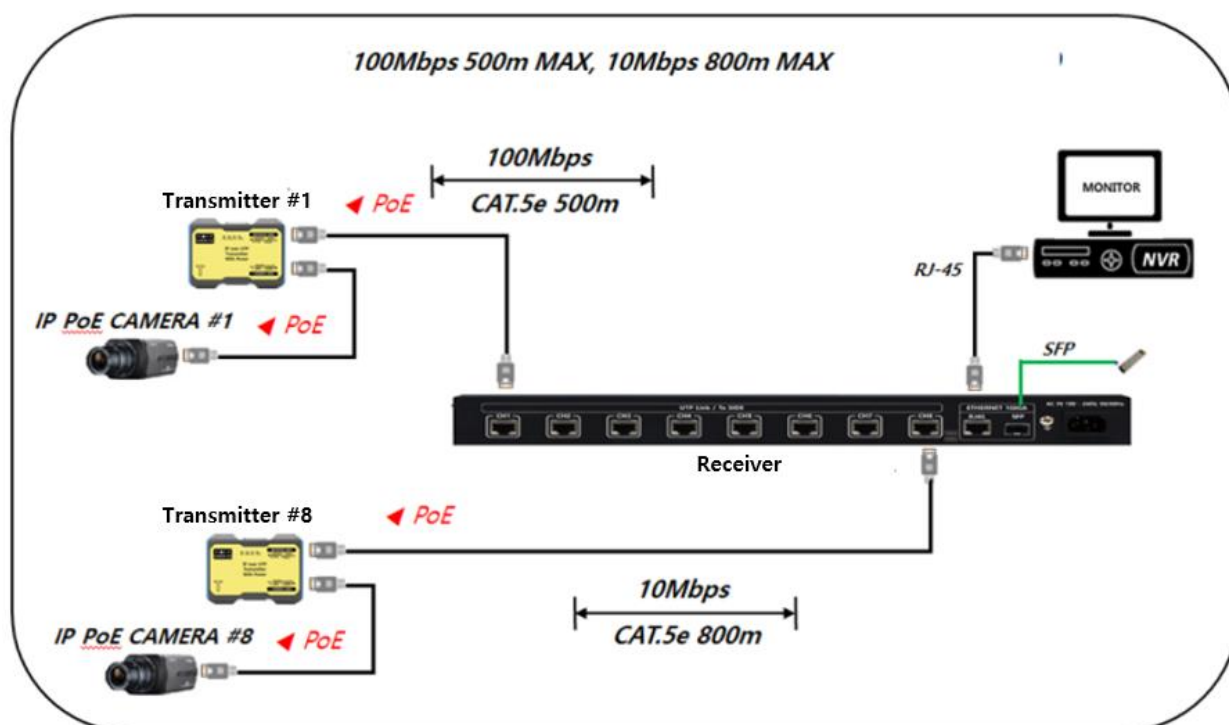
Otherwise, the product may be damaged or destroyed. When the product is booted, the LEDs turn on sequentially and then operate.

4. CABLE PIN Array (10/100, Mode B)



Number	Color		10/100 Mode B	
	T568A	T568B		
1	white + green	white + orange	Rx+	
2	green	Orange	Rx-	
3	white + orange	white + green	Tx+	
4	blue	blue		DC+
5	white + blue	white + blue		DC+
6	Orange	green	Tx-	
7	white + brown	white + brown		DC-
8	Brown	Brown		DC-

5. Product configuration example



6. Power supply table (Actual value)

Transmission distance(Cat.5e)	Bandwidth	48V SMPS	Loop Resistance
100m	100Mbps	13.3W	19.3Ω
200m	100Mbps	12.5W	30.1Ω
300m	100Mbps	11.6W	56.5Ω
400m	100Mbps	10.7W	78.1Ω
500m	100Mbps	6.6W	96.2Ω
600m	10Mbps	3.7W	114.5Ω
700m	10Mbps	3W	133Ω
800m	10Mbps	2.6W	155.5Ω

※ The cables in the table above are based on Cat.5e made by LS.

※ Cable transmission distance may vary depending on specifications such as camera and NVR.

※ When using the PoE function of the transmitter, the transmission distance may vary depending on the camera type.

In particular, use a dedicated camera power supply for IP PTZ cameras that use a lot of power or cameras that use a lot of IR LEDs. It is also recommended that the cable distance between the camera and the transmitter is less than 1m.

※ For transmissions over 500 m, check the power consumption of the camera and supply the camera with the external power supply of the camera (set the CAMERA PoE switch on the transmitter to OFF).

7. Product installation notes

※ It is not recommended when products are in contact or connected to each other.

※ If the product is powered by PoE, it is recommended to ground the camera after checking the video.

※ When using a surge protector, it is recommended that the cable distance between the camera and the transmitter is a maximum of 50 m.

※ The use of a LAN cable extension (coupler) leads to signal attenuation. The use of multiple advanced gender links is not recommended.

8. Product specification

Model name		Transmitter
Power input		PoE (Power input from Receiver via PoE)
Power output		Midspan PoE support (Type B only, PoE Switch On/Off available)
Bandwidth		100Mbps Full Duplex
Connection port	RJ-45 (TIA/EIA568B Type)	RJ-45 (TIA/EIA568B Type)
	RJ-45 (TIA/EIA568B Type)	RJ-45 (TIA/EIA568B Type)
Camera PoE Switch		Slide switch : PoE power on/off selector switch
Operating Temperature / Operating Humidity		-10°C ~ +50°C / 0 ~ 80%
Material / Weight		ABS flame retardant / 52g
Dimensions		76(W) x 55(H) x 24(D)mm

Model name		Receiver
Maximum transmission distance (based on CAT.5e)		CAT.5e 100Mbps: 500m, 50Mbps: 600m transmission CAT.5e 10Mbps: 800m transmission
Power output		PoE (DC 48V)
Bandwidth		100Mbps Full Duplex
Power input		AC 100 ~ 240V
Power output		MAX.12W for each channel (@DC 48V)
Power consumption		220V MAX: 127W (8 channels, 12W output)
Connection port	NVR Port (choose one)	RJ-45 x 1(1Giga)
		SFP x 1(1Giga)
	TX Side	RJ-45 x 8
Bandwidth selector switch		10M / 100M
Operating Temperature / Operating Humidity		-10°C ~ +50°C / 0 ~ 80%
Material / Weight		Steel / 3.6kg
Dimensions		430(W) x 44(H) x 300(D) mm

9. Troubleshooting

Symptom	Identification method
No Power.	<Transmitter> • Check if the receiver's PoE LED is on and the transmitter's PWR LED is on. • Check the UTP cable connection. <Receiver> • Check the AC power cable. • Check that the power switch is ON. • Check if the PoE LED is operating normally.
No Video.	• Check whether the LINK LED on the product lights up and the ETH LED flashes. • Check whether the transmission distance exceeds the recommended transmission distance. • Check that the NETWORK CABLE is arranged correctly. • If you are using the PoE function of the transmitter, check that the PoE LED is lit. If it's turned off, set the PoE switch to ON..
No PoE supply	• Check the transmitter's PoE switch. • Check that the PoE LED on the transmitter is RED. • Check that the NETWORK CABLE is arranged correctly. • Make sure that your IP CAMERA is PoE capable.
The NETWORK connection is abnormal.	• Check that the NETWORK CABLE is arranged correctly. • Check the area for radio devices or devices that generate strong radio waves. • Check whether the network configuration is designed correctly.
The video status is not stable	• Check the NETWORK cable connection. • Check the mutual compatibility between the NVR and the camera. • Check the camera's performance status.

10. Warranty Certificate

This product has passed thorough quality control and test, and if this gets broken during normal use, we provide the two-year warranty service.

Model No.		
Serial No.		
Distributor		
Date you purchased		
Place you purchased		
Warranty Period		Two (2) year from the date of purchase
Purchaser	Name	
	Address	

- Please check this warranty indication first.
- Please contact your distributor after checking out any defect in the products.
- The standard for repairing, replacement or reimbursement follows Customer.
- Warranty content any defect under normal use within the warranty service period we give you free repair service according to the warranty certificate.
- We charge you with the fee of parts and service despite of free warranty service period.

Any breakage made without care such as:

- Breakdown due to natural disasters (lightning, fire, flood, tsunami, etc.)
- When disassembled or repaired by the user
- When connecting power other than rated power.
- When you want to reassemble for full system or replace parts within warranty service period.
- When unauthorized person modified or made damage on the product trying to repair it.
- Failure due to careless handling of the user
- When replacing consumables
- Lightning strike.
- Please note that we don't support the breakage after warranty service period expired. If the customer wants to get it repaired, we charge them with the fee.
- The specification is subject to change without prior notice for quality improvement.



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