SeeEyes®

High Power IP Over Coaxial Transmission Solution

SC-IPC601(SC-IPC601T, SC-IPC601R)

User Manual

SC-IPC601T

(1 channel Transmitter)

SC-IPC601R

(1 channel Receiver)

SeeEyes Co., Ltd.

Precaution and Safety Guidelines

The content of this guideline is to protect the safety of users and prevent property damage.
Be sure to read this user's manual thoroughly and use the device correctly.

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 several power plugs at the same time.**

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

■ **Do not leave the device at any place that water falls or splashes. Also, do not put anything full of water such as a flower vase on the device.**

   - It may cause malfunction or fire if liquid goes into 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.**

   - By abnormal working, it may cause fire, electric shock and personal 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 of the appliance clean during or after installation to prevent dust. Especially when cleaning the device, wipe it with dry towel and do not use water, thinner or organic solvent.**

   - It may damage the case of this device, and cause malfunction or electric shock.

■ **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.**

- It may cause 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.

■ **Concerning the input voltage for operating this device, a voltage range must be within 10% of rated voltage, and the power outlet must be grounded. 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.

Caution (If you do not keep any of the below guidelines, you may get injured or suffer property loss.)

■ **Proper ambient temperature and humidity are recommended.**
  - Avoid extremely high temperatures(over 50°C) or low(below -10°C), and humid conditions.

■ **Install in well ventilated place, and avoid direct sunlight or heat appliance.**

■ **Be sure to plug the power cord with grounded outlet.**
  - There is a risk of electrical shock and personal injury.

■ **Do not use this device in close proximity to a device that produces strong waves such as radio set(TRANCEIVER, Walkie-talkie, etc.) or repeater. It may affect the video signal, or cause disorders such as noise or crack on the screen.**

■ **Transmission distance may vary depending on the type of coaxial and UTP cable.**

■ **Disconnect the power plug with care during thunder and lightning.**

■ **When connecting cables, install as "U" shape in order to prevent rainwater/dew/fog from getting into the product.**

■ **Refer to the user's manual for problems or questions besides the above. Contact our service center if you need assistance from a professional technician.**

■ **When you extend or terminate coaxial cable, it should be connected in the following way.**
  - BNC-M(Male) - BNC-JJ - BNC-M(Male): BNC Connector connection example(for HD-SDI)

■ **Make the joint part of the cables insulated completely not to expose the metal parts.**

■ **When using the product in outdoor, we recommend to use STP(Shield Twisted Pair) because UTP(Unshielded Twisted Pair) Cable is for indoor use.**
  - Use UTP cable above than standard CAT.5e.

■ **Make sure to read this user's manual thoroughly since this product has PoC function that might generate a problem such as malfunction when connected with other products.**

■ **Configure in separate for general network use (Internet, indoor, etc.) and CCTV usage.**
  - It might be the cause of problem.

■ **Be careful not to change the Network cable connection.**
  - Refer to the Cable Connection way below.

Network cable wiring

TIA / EIA 568B Type		Pin No.	Color		Function
		1	White	Orange	TX+
		2	Orange		TX-
		3	White	Green	RX+
		4	Blue		PWR+
		5	White	Blue	PWR+
		6	Green		RX-
		7	White	Brown	PWR-
		8	Brown		PWR-

1. Introduction of item

1-1. Summary

The 1-channel power overlapping IP transmission set consists of the transmitter SC-IPC601T and the receiver SC-IPC601R.

This is a product developed as a high power support type product of SC-IPC07P among our company's IP coaxial transmission device series. Transmitter (SC-IPC601T) PoE output of up to 60Watt is supported, enabling high-performance and high-capacity IP cameras to be transmitted over long distances using PoC technology.

It supports a PoC(power over coaxial) function to supply power to the transmitter and camera, so no separate power cable is required. In addition, since only a single coaxial cable is needed, construction period and construction cost can be reduced. Because this product can transmit Ethernet data over a long distance using a coaxial cable between transmitter and receiver, it can also compensate for the disadvantages of conventional network transmission distance.

1-2. Product Features

• Possible to support IEEE 802.3af/at/bt standard
• Possible to supply power to IP cameras (PoE Type B supported / max. 60W)
• Transmission bandwidth: up to 100 Mbps
• 700m(2100ft) transmission of power + Ethernet data via RG-59 coaxial cable (10Mbps)
• Auto MDI/MDIX function support
• Safe power transmission with automatic line diagnosis function
• Camera-side transmitter PoE function ON/OFF setting possible
• Built-in surge protection circuit

2. Product components

SC-IPC601T	SC-IPC601R	Power cord	DC 56V Adapter	User manual
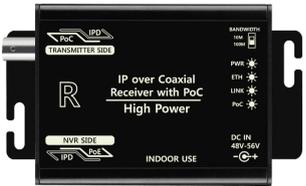
※ **Accessories included with the product are subject to change.**

3. Name and function of each part

3-1. SC-IPC601T(Transmitter)

① **CAMERA PoE Switch:** IP PoE camera power supply setting switch.

　※ 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.

　※ When connecting an IP camera that does not support PoE, set the CAMERA PoE switch to OFF.

② **Status LED indicator**

Name	Colour	Status description
PWR	Red	On: Power input on OFF: No power input
ETH	Green	Blinking: Ethernet connected Off: Ethernet unconnected
LINK	Green	On: Connected with the receiver Off: Not connected with the receiver
PoE	Red	On: PoE input to the IP camera Off: No PoE input to the IP camera Blinking: IP camera side power supply error (short circuit, disconnection, overcurrent)

　※ When the product boots, it lights up in sequence and operates.

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

④ **CAMERA SIDE:** IP camera connection terminal.

## 3-2. SC-IPC601R(Receiver)

① **NVR SIDE:** NVR or PoE hub connection terminal.

② **DC 48-56V IN:** DC adapter (48V or 56V) power input terminal.

③ **TRANSMITTER SIDE:** Transmitter connection terminal and video input terminal.

④ **Status LED Indicator**

Name	Colour	Status description
PWR	Red	On: Power input on OFF: No power input
ETH	Green	Blinking: Ethernet connected Off: Ethernet unconnected
LINK	Green	On: Connected with the transmitter Off: Not connected with the transmitter
PoC	Red	On: PoC(Power over Coaxial) input to the transmitter Blinking: Transmitter side power supply error (short circuit, disconnection, overcurrent)

⑤ **Bandwidth Select Switch:** Support 100Mbps / 10Mbps settings.

※ 10M: Transmission at 10Mbps (based on RG-59, 10Mbps: 700m(2100ft) transmission).

※ 100M: Transmission at 100Mbps (based on RG-59, 100Mbps: 300m(900ft) transmission).

※ When the product is booted up, it lights up in sequence and operates.

4. Product configuration example

4-1. When installing IP PoE camera (PoE switch on transmitter)
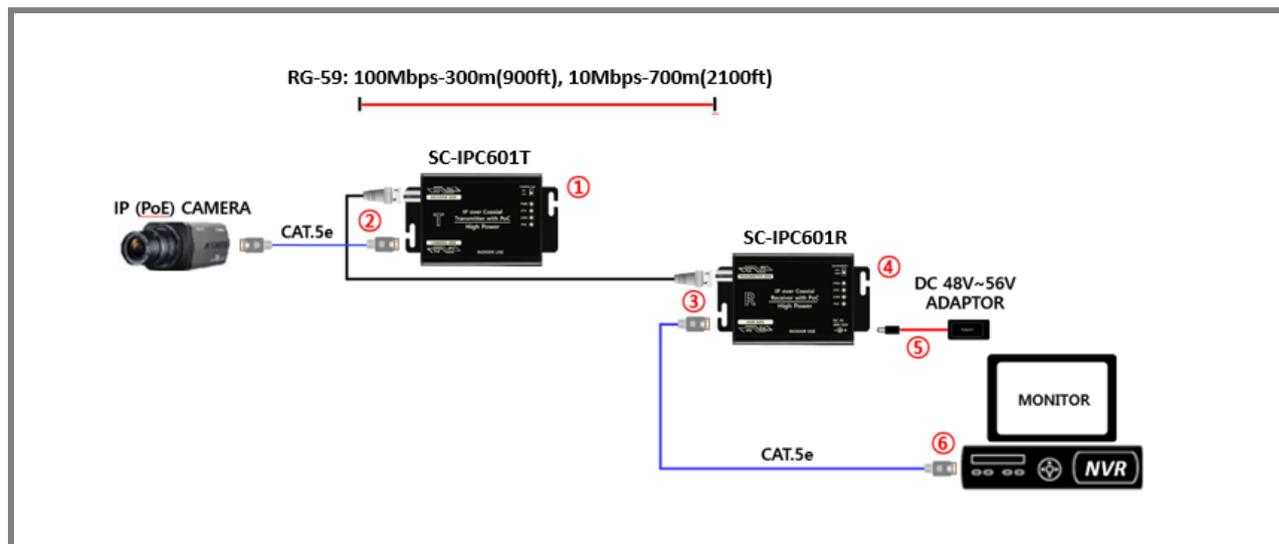
< Product installation guide >

① Set the CAMERA PoE switch of the SC-IPC601T (transmitter) to ON (PoE LED lights up).

※ When connecting a camera that does not support PoE, set the transmitter's CAMERA PoE switch to OFF.

② Connect the IP PoE CAMERA to the transmitter and connect the coaxial cable.

③ Connect that coaxial cable to the receiver. Then connect the receiver and NVR or PoE hub.

④ Check the transmission distance, and set the transmission bandwidth setting switch of SC-IPC601R to the corresponding transmission bandwidth.

※ 10M: Transmission at 10Mbps (based on RG-59, 10Mbps: 700m(2100ft) transmission).

※ 100M: Transmission at 100Mbps (based on RG-59, 100Mbps: 300m(900ft) transmission).

⑤ Apply power by connecting a DC adapter (48V or 56V) to the DC Jack of the receiver.

⑥ Check the camera video through the monitor connected to the NVR.

※ When connected successfully, the LINK LED of the transmitter and receiver turns on, and the ETH LED blinks.

5. Precautions for product installation

※ Use a dedicated adapter individually for each product. It is not recommended to input power to multiple products with one adapter.

※ It is not recommended if the products are in contact with each other or tied together.

※ When supplying power to the receiver through PoE, it is not recommended to connect the adapter to the DC Jack.

※ When installing the product by supplying power through 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 be less than 50M.

※ Using a LAN cable extension gender (coupler) causes signal attenuation. The use of multiple extension gender connections is not recommended.

6. Specifications

MODEL		SC-IPC601T
Power input		PoC (Power over Coaxial from SC-IPC601R)
Power output		Midspan PoE support (Type B Only, PoE SW On/Off settings)
Bandwidth		10/100Mbps
Connection port	RECEIVER SIDE	BNC-F, 75Ω
	CAMERA SIDE	RJ-45 (TIA/EIA568B Type)
LED status indicator	PWR	RED LED
	ETH	GREEN LED
	LINK	GREEN LED
	PoE	RED LED
CAMERA PoE SW		Slide switch : PoE On/Off Selection Switch
Operating temperature / humidity		-10℃ ~ 50℃ / 0 ~ 80%
Material / Weight		Aluminium / 110g
external dimensions		104(W) x 25(H) x 60(D)mm

MODEL		SC-IPC601R
Power input		AC Adapter (DC 48-56V) or PoE Hub (IEEE 802.3af/at/bt)
Power output		PoC
Transmission distance RG-59		100Mbps: 300m(900ft) 10Mbps: 700m(2100ft)
Bandwidth		10/100Mbps
Connection port	TRANSMITTER SIDE	BNC-F, 75Ω
	NVR SIDE	RJ-45 (TIA/EIA568B Type)
	DC 48V-56V IN	DC-JACK
LED status indicator	PWR	RED LED
	ETH	GREEN LED
	LINK	GREEN LED
	PoC	RED LED
Bandwidth Select Switch		10M / 100M
Operating temperature / humidity		-10℃ ~ 50℃ / 0 ~ 80%
Material / Weight		Aluminium / 108g
external dimensions		104(W) x 25(H) x 60(D)mm

7. Transmission distance per coaxial cable type

DC 56V/1.16A	5C-HFBT	5C-2V	3C-2V	RG-58	RG-59
20m(60ft)	100Mbps/59W	100Mbps/60W	100Mbps/57W	100Mbps/59W	100Mbps/58W
100m(300ft)	100Mbps/52W	100Mbps/54W	100Mbps/46W	100Mbps/53W	100Mbps/53W
200m(600ft)	100Mbps/45W	100Mbps/48W	100Mbps/31W	100Mbps/43W	100Mbps/41W
300m(900ft)	100Mbps/35W	100Mbps/41W	100Mbps/21W	100Mbps/32W	100Mbps/31W
400m	100Mbps/27W	100Mbps/32W	10Mbps/16W	10Mbps/25W	10Mbps/22W
500m	100Mbps/21W	100Mbps/26W	10Mbps/13W	10Mbps/21W	10Mbps/19W
600m	10Mbps/18W	10Mbps/23W	10Mbps/11W	10Mbps/18W	10Mbps/17W
700m(2100ft)	10Mbps/16W	10Mbps/20W	10Mbps/9W	10Mbps/15W	10Mbps/13W
800m	10Mbps/14W	10Mbps/17W	X	10Mbps/13W	X
900m	10Mbps/12W	10Mbps/15W	X	X	X
1000m(3000ft)	10Mbps/11W	10Mbps/13W	X	X	X

PoE(802.3bt, DC 54V/4.7A)	5C-HFBT	5C-2V	3C-2V	RG-58	RG-59
100m(300ft)	100Mbps/47W	100Mbps/49W	100Mbps/42W	100Mbps/48W	100Mbps/48W
200m(600ft)	100Mbps/41W	100Mbps/43W	100Mbps/27W	100Mbps/38W	100Mbps/35W
300m(900ft)	100Mbps/30W	100Mbps/36W	100Mbps/18W	100Mbps/28W	100Mbps/26W
400m	100Mbps/23W	100Mbps/27W	10Mbps/14W	10Mbps/22W	10Mbps/19W
500m	100Mbps/18W	100Mbps/22W	10Mbps/11W	10Mbps/18W	10Mbps/16W
600m	10Mbps/16W	10Mbps/19W	10Mbps/9W	10Mbps/15W	10Mbps/14W
700m(2100ft)	10Mbps/13W	10Mbps/17W	10Mbps/7W	10Mbps/13W	10Mbps/11W
800m	10Mbps/12W	10Mbps/15W	X	10Mbps/11W	X
900m	10Mbps/10W	10Mbps/13W	X	X	X
1000m(3000ft)	10Mbps/9W	10Mbps/11W	X	X	X

※ The transmission distance may vary slightly depending on the quality of the coaxial cable used and the quality of connectors.

※ Depending on the power characteristics of the camera to be applied, there may be a difference of about 20 to 30% compared to the supplyable power figure in the table, and the cable transmission distance may vary depending on the specifications of the camera, NVR, etc.

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

   In particular, for IP PTZ cameras and cameras with many IR LEDs that consume a lot of power, use a dedicated camera power adapter. It is recommended that the cable distance between the camera and the transmitter be less than 1 m.

※ When inputting power to the receiver through a PoE hub, it is recommended that the network cable distance be less than 1m.

8. Troubleshooting

Symptoms	Check points
No Power	<transmitter> • Check that the receiver's PoC LED is turned on and the transmitter's PWR LED is turned on. • Check the coaxial cable connection. <receiver> • Check if the PWR LED operates normally. • Check adapter or PoE hub input status. • Make sure you use the dedicated AC adapter (DC 56V/1.16A).
No Video	• Check if the LINK LED of the product is turned on and the ETH LED is blinking. • Check whether the transmission distance is outside the recommended transmission distance. • Check if the NETWORK CABLE arrangement is correct. • When using the transmitter's PoE function, check if the PoE LED is on, and if it is off, set the PoE switch to ON.
No PoE	• Check the status of the transmitter's PoE switch. • Make sure the PoE LED of the transmitter is lit RED. • Check if the NETWORK CABLE arrangement is correct. • Make sure your IP CAMERA has PoE function.
Unstable Network	• Check if the NETWORK CABLE arrangement is correct. • Check your surroundings for radios or devices that generate strong radio waves. • Check if the network structure is properly designed.
Unstable Video	• Check the coaxial cable and NETWORK cable connections. • Check the mutual compatibility between NVR and camera. • Check the camera's performance status.

9. 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.		
Date of purchase		
Place of purchase		
Purchaser	Name	
	Address	
Seller	Name	
	Address	
Warranty Period	Two (2) years from the date of purchase	

Any malfunctions occurring under normal handling conditions for two years after purchase will be repaired free of charge.

For repairs, please call the phone number indicated on the cover of the instruction manual. When reporting a failure, it is convenient to accurately inform the model name and failure status of the product, and to know the affiliation and name of the person in charge. Please read this user manual carefully before reporting a malfunction.

The shape and circuit of the product are subject to change without notice for performance improvement.

Failure according to the following items will be charged.
- ✓ Failure due to user negligence
- ✓ When connecting a power other than the rated power
- ✓ In case of disassembling or repairing at the user's discretion
- ✓ Failure due to natural disasters (lightning, fire, flood, tsunami, etc.)

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