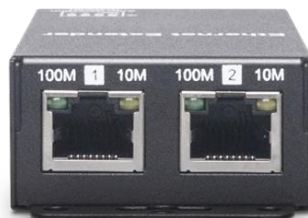# SC&T

IP/ PoE Extender

User Manual

Model : IP09K

Ethernet over CAT5e Extender

Introduction

IP09 is an IP extender that can use a single CAT5e (or greater) cable to send TCP/IP signal to a remote IP-enabled device, with transmission distance up to 800M and bandwidth up to 100Mbps. Furthermore, the high bandwidth allows IP09 to send multiple IP signals over one Ethernet cable and split these signals for different IP devices. It's perfect solution for CCTV security system to extend IP cameras to a remote NVR for recording.

Features

- Signal Extension up to 800M over CAT5e.
- Bandwidth up to 70Mbps.
- Able to send multiple IP signals over single Ethernet cable.
- Supports Auto MDI/MDI-X and full/ half duplex mode.
- Built-in 1.5KV (Line to Line) surge protection.

Transmission Distance Chart

The transmission distance report below is tested through the COMMSCOPE 57535-2 (CAT5e 24AWG) cables.

| Mode	Data Rate	Transmission Distance
100BASE-TX	100Mbps	**130M**
100BASE-T1	100Mbps	**300M**
Long Reach 100	100Mbps	**500M**
10BASE-T	10Mbps	**250M**
Long Reach 10	10Mbps	**800M**

※ The distance may vary by installation conditions, quality of cables, and the performance of connecting devices.
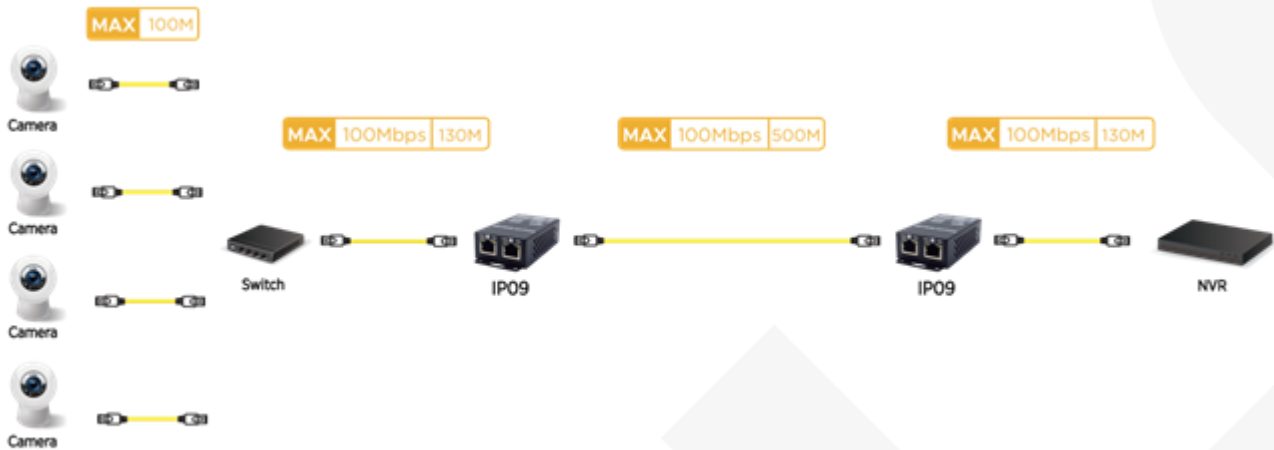※ 10BASE-T / 100BASE-TX and Long Reach 100Mbps mode use 2 pair wire to transmit
※ 100BASE-T1 and Long Reach 10Mbps mode use 1 pair wire to transmit only
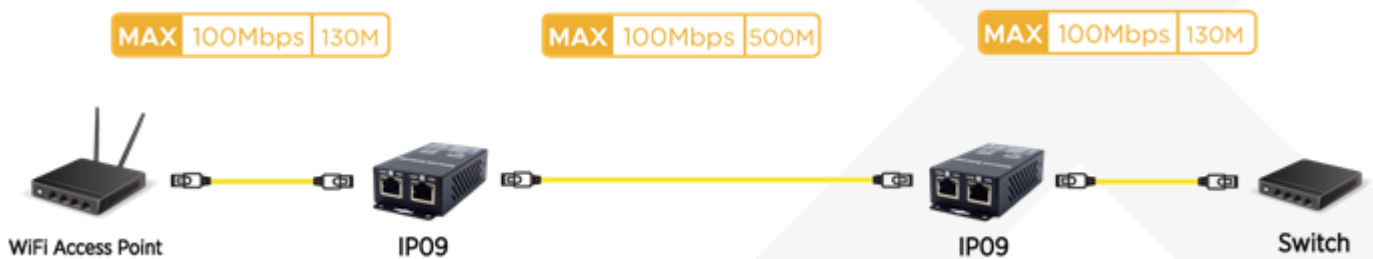
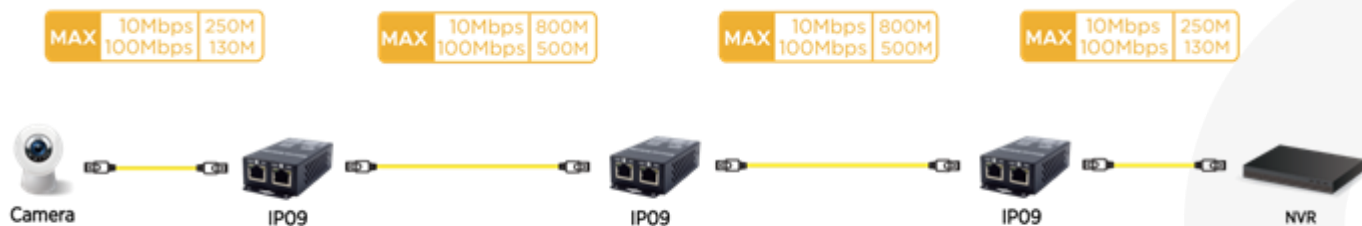## Installation View

(1) Point to Point Transmission
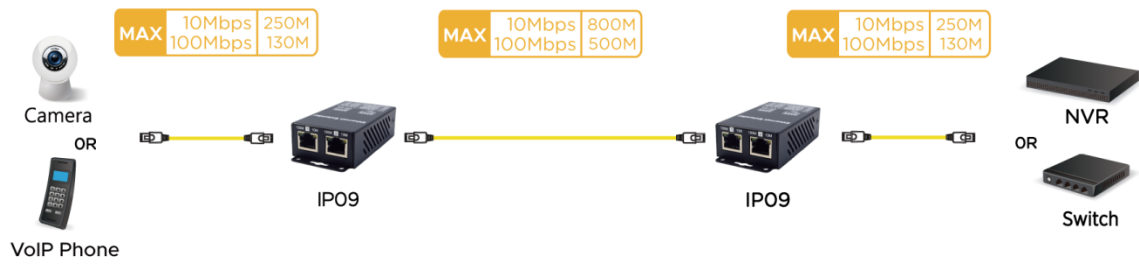
(2) Multi-Camera Video Transmission

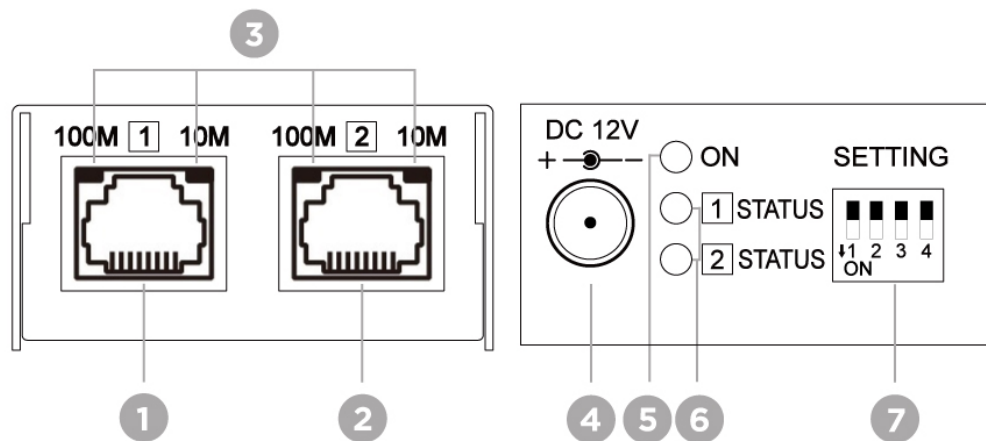(3) Wifi Acess Point Extending Transmission

(4) Extra Long Distance Transmission

(5) Extra Long HDMI Transmission

Panel Review

No.	Interface	Functionality
1	RJ45 Connector	Port 1；To connect networking devices or another IP09 (Refer to Description 1,2,3)
2	RJ45 Connector	Port 2；To connect networking devices or another IP09 (Refer to Description 1,2,3)
3	RJ45 LED	To indicate the network connection status (Refer to Description 4)
4	Power Jack	To connect DC12V 0.5A adapter
5	Power LED Indication	To indicate the power status (Refer to Description 5)
6	Status Indication	⒈Status：Port 1 mode indication (Refer to Description 6) ⒉Status：Port 2 mode indication (Refer to Description 6)
7	DIP Switch	To select the desired mode (Refer to Description 7)

Description

1. Link speed of port 1 and 2 must be sync, or they are not able to activate network connection.
2. Once the port 1 and 2 remain unlinked, the IP09 will automatically turn to Power Saving mode.
3. RJ45 Pinout

(PIN TIA/EIA-568B)	
PIN	Wire Color
1	Orange-white
2	Orange
3	Green-white
4	Blue
5	Blue-white
6	Green
7	Brown-white
8	Brown

1 2 3 4 5 6 7 8
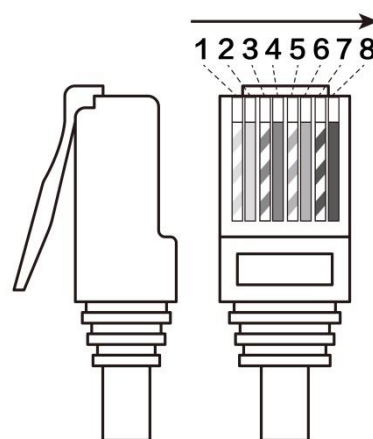
4. RJ45 LED

Data Rate	LED On	LED Off	LED Blinking
100Mbs	Enable	Disable	Data Transferring
10Mbps	Enable	Disable	Data Transferring

5. Power LED Indication

Green On	Green Off	Light Breathing
Power On	Power Off	Power Saving

6. Status Indication

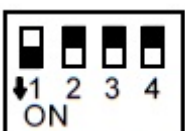| Blue On	Blue Off	Light Blinking	Blink twice
Long Reach	Ethernet	100BaseT-T1	Hardware Failure

7. Dip Switch Setting:

7.1. Auto Mode / Default (Highly Recommended)
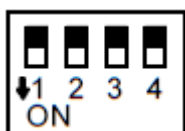
Dip switch 1-2-3-4 all up (OFF)
Auto Mode enable auto negotiation which automatically set up the link speed and transmssion protocol.

7.2 Auto+EEE Mode

Dip switch 1 down (ON), 2-3-4 up (OFF)
Auto+EEE mode supports Energy-Efficient Ethernet based on Auto Mode.

7.3 Advanced Mode
Please refer to the chart below to manually set up the Link Speed, and Modes

No.	Mode	↑ OFF	↓ ON
1	LINK SPEED	10Mbps	100Mbps
2	ETHERNET	Disable	Enable
3	100BASE-T1	Disable	Enable
4	LONG REACH	Disable	Enable

※Link speed of 10Mbps is not supported on 100BASE-T1 mode

Auto-Negotiation Priority

Priority	Mode
1 (Highest)	Long Distance 100Mbps
2	100BASE-T1
3	Long Distance 10Mbps
4	100BASE-TX Full Duplex
5	100BASE-TX Half Duplex
6	10BASE-T Full Duplex
7 (Lowest)	10BASE-T Half Duplex

IP09K Package Included

2 x IP09.
2 x DC12V 0.5A Power Adapter.
4 x Screw
4 x Screw Plug

Specification

ITEM NO.	IP09
Support	
Compliance	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3bw 100BASE-T1 Ethernet IEEE 802.3 Nway Auto-Negotiation IEEE 802.3x Full Duplex Operation And Flow Control IEEE 802.3az Energy Efficient Ethernet
Network Bandwidth	10/ 100Mbps
Max. Transmission Distance	800M at 10Mbps, 500M at 100Mbps
Ports & Interfaces	
Input	1 x RJ45
Output	1 x RJ45
Power Interface	2 x (2mm) DC Jack
Power	
Power Supply	DC 12V 500mA Regulated
Power Consumption	1W (Max)
Ambient Temperature	
Operation	0 to 55℃
Storage	-20 to 85℃
Humidity	Up to 95%
Physical Characteristics	
Dimensions	49 x 91.8 x 25mm
Weight	120g

RoHS $C \epsilon$ FC