Ethernet Extender
## User Manual

This Ethernet extender consists of one SV–Unit and one IPC–Unit. It can transfer Ethernet signal from IPC–Unit to carrier signal and extend it to SV–Unit through coaxial cable or network cable. Then it transfers carrier signal to Ethernet signal. It can fully satisfy the transmission requirements of long distance Ethernet signal, and be widely used in security network surveillance and network transformation project where coaxial cables and ethernet cables are arranged mixed.

Application
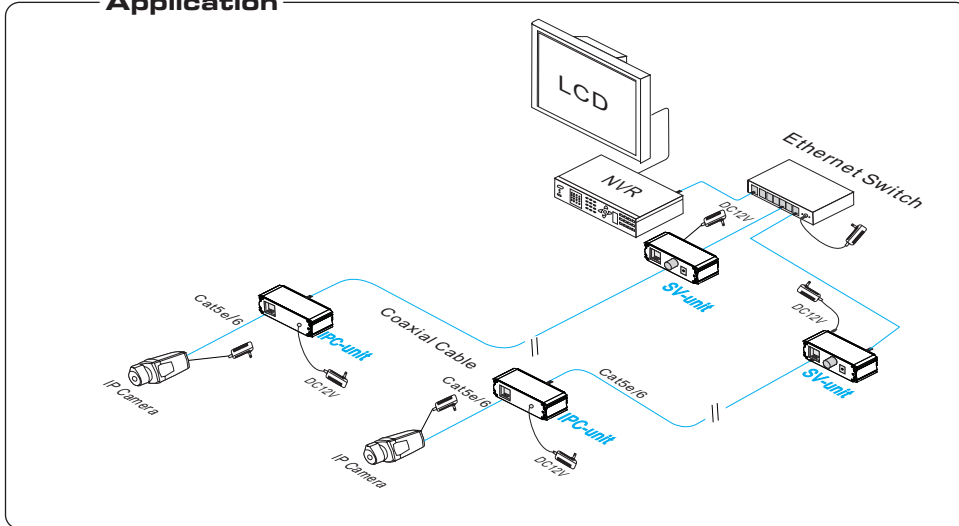
■Feature

● The equipment consists of two parts: SV–Unit and IPC–Unit. SV–Unit has 12V DC port, one RJ45 input port and two output ports: BNC and RJ45; IPC–Unit has two input ports: BNC and RJ45, one RJ45 output port and one 12V DC port;

● Adopt advanced transmission technoloy to transmit Ethernet signal up to 1200m through coaxial cable and transmit Ethernet signal up to 700m through network cable;

● Ethernet delay less than 1ms; meet point to point application;

● Standard: IEEE802.3 10BASE–T, IEEE802.3u 100BASE–TX;

● Protection: excellent circuit isolation protection, superior product anti–thunder , anti–satic and anti–interference;

● Appearance: durable and delicate, meet MIT rack installation standard, working temperature: 0℃ ~ 55℃;

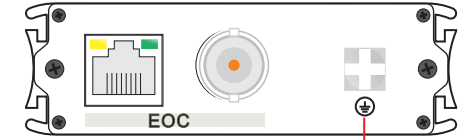● Installation: Plug–and–play, no setting required.

⚠ Caution

1) Please use 75–5 standard or above coaxial cable and Cat5e/6 cable to get the longest transmission distance!

2) BNC connector and RJ45 port of the equipment can't be used at the same time!
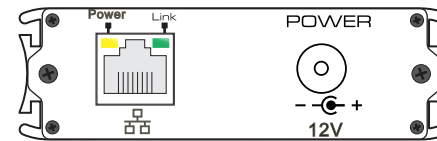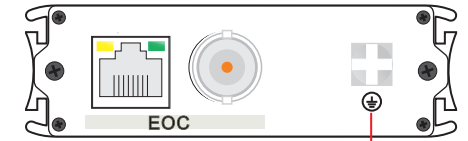

■Board diagram
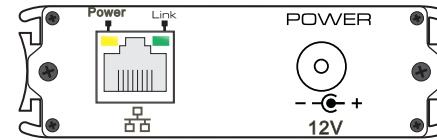
Grounding terminal

Grounding terminal

⚠ Caution

Device must be connected with lightning protection grounding; otherwise protection level will reduce; please use above No.20 wire to connect the grounding terminal.

Instruction:

LED Status	RJ45 input/output port		EOC RJ45
	Yellow Light	Green Light	Yellow /Green Light
Flash	/	Indicate communication	/
On	Indicate power supply normal	Indicate cable connected	Indicate cable connection normal

■Installation steps

Please check the following items before installation. If any missing, please contact the dealer.

● Ethernet Extender   1 pcs
● MIT hanger   2 pcs
● User mannal   1 pcs
● Power adapter   1 pcs

Please follow below installation steps

1) Please turn off the signal source and the device's power, installation with power on may damage the device;

2) Check if the network cable and other transmission line is occupied by other device;

3) Use a network cable to connect RJ45 port of SV–Unit and Ethernet switch, use another network cable or coaxial cable to connect EOC port of SV–Unit and EOC port of IPC–Unit;

4) Use a network cable to connect IP camera with RJ45 port of IPC–Unit;

5) Check if the installation is correct and device is good, make sure all the connection is reliable and power up the system;

6) Make sure the network is normal.

■ Specification

Item		Description
Power	Power Supply	Power adapter supply
	Voltage Range	DC 12V
	Consumption	< 2W
Ethernet Port Parameter	Ethernet Port	EOC: 0−−100Mbps Ethernet port:10/100Mbps; transmission bandwidth changes based on transmission distance, please refer to table 1
	Transmission Distance	EOC coaxial cable: 0−1200m EOC network cable: 0−700m
	Transmission Medium	75−5 or above coaxial cable and Cat5e/6 cable
Ethernet Exchange	Ethernet standard	IEEE802.3 10BASE−T, IEEE802.3u 100BASE−TX
	Ethernet delay	< 1ms
Status	LED Indicator	Input/output ports: power status(RJ45 yellow) network signal transmission(RJ45 green); EOC: indicate cable connection(RJ45 yellow/green)
Protection Level	ESD	1a Contact Discharge level 3 1b Air Discharge level 3 IEC61000−4−2
	Communication Port Anti−thunder Protection	IEC61000−4−5 level 3
Operation Environment	Working Temperature	0℃~55℃
	Storage Temperature	−40℃~85℃
	Humidity(No−Condensing)	0~95%
Mechanical	Dimension(L × W × H)	63.2mm × 82mm × 25mm
	Material	Aluminum
	Color	Black
	Weight	IPC:134g; SV:134g

Products are subject to change without prior notice

■ Trouble Shooting

Please find the following solution when the device doesn't work

● Please confirm if the installation according to factory installation request;

● Please confirm if the RJ45 cable order is in accordance with the EIA/TIA568A or 568B industry standards;

● The maximum transmission distance depends on the signal source and cable quality, please do not exceed the maximum transmission distance;

● Please replace a failure device with a proper one to check if the device is broken; If the problem still exists, please contact the factory.

Table 1:

SV<->IPC cable length L	Bandwidth (Mbps)	
	75-5 coaxial cable	Cat5
100m	54.8	61
200m	54.6	53.7
300m	54.5	52.7
400m	54.4	51.3
500m	54.1	51
600m	53.9	47.1
700m	53.6	35.1
800m	53.1	/
900m	52.2	/
1000m	50.3	/
1100m	48.5	/
1200m	47.2	/

Picture 1:

Ethernet switch — 100m → SV — L → IPC — 100m → Camera
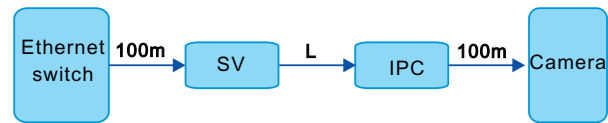
Instruction: Test data in table 1 is required under a lab environment by the test method in picture 1. In actual case, there maybe some differences due to different cables and environments.