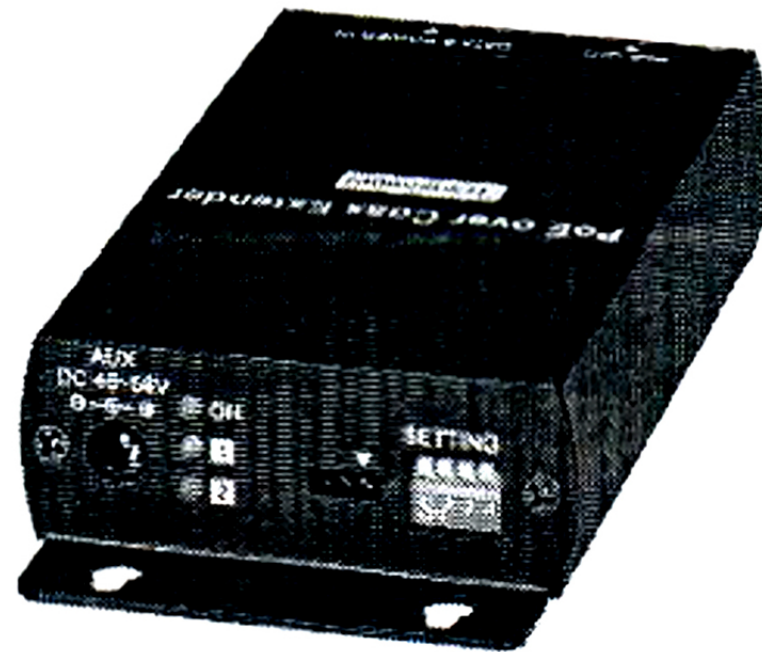


IP/PoE CABLING TRANSMISSION

ITEM NO: RA086 PoE Extender over Coaxial cable



RA086R

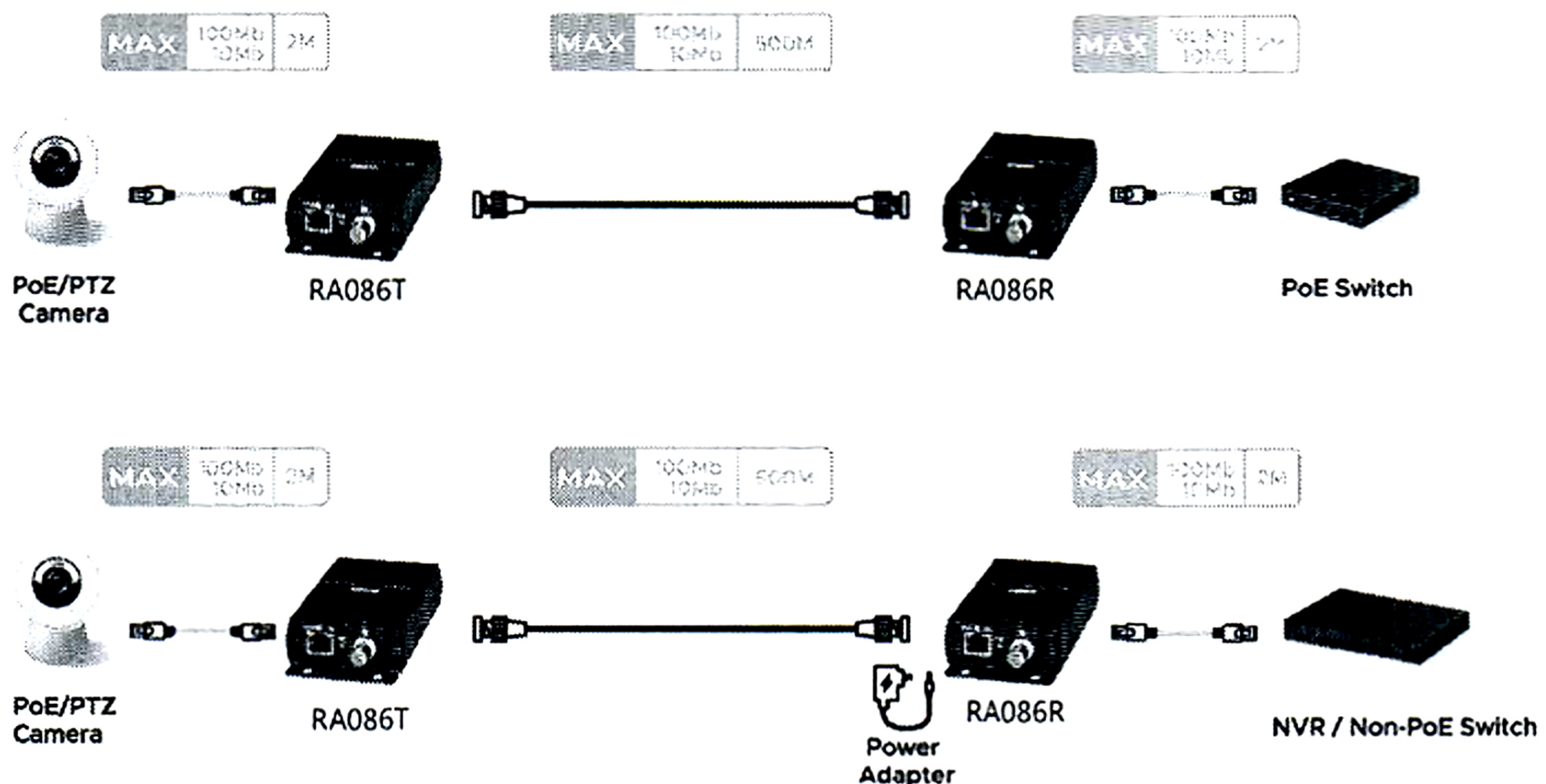


RA086T

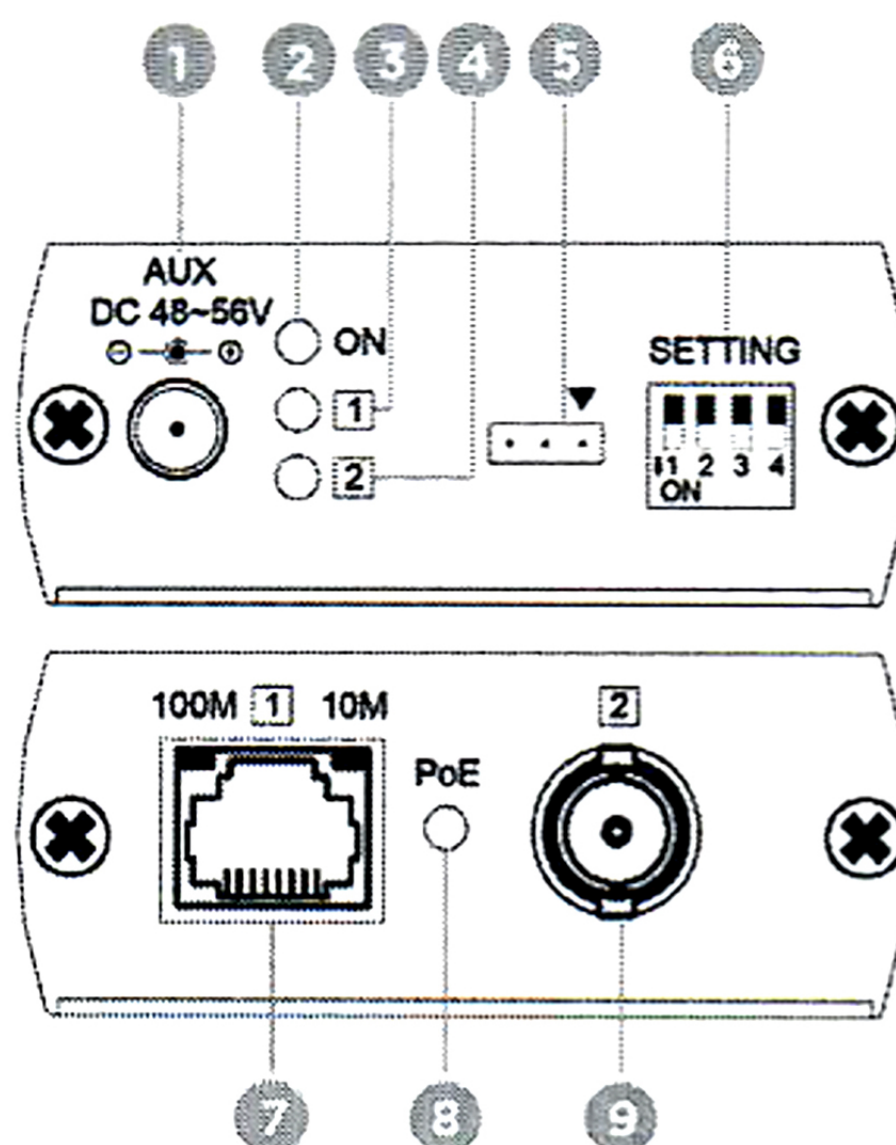
Features:

- Able to use one coaxial cable to extend PoE signal to up to 1KM
- BNC side support 10BASE-T, 100BASE-TX, 100BASE-TI standard.
- Data Rate: 500 meters at 100Mbps, above 500 meters at 10Mbps.
- Support PoE IEEE 802.3af, 802.3at, 802.3bt
- Power from either a PoE switch or an external power adapter
- Support Auto MDI/MDI-X.
- Support Full duplex and half duplex mode.
- Support EEE Energy-Efficient Ethernet.
- BNC side built-in 30KV (ESD), 40A (EFT), and 30A surge protection.
- RJ45 side built-in 30KV (ESD), 40A (EFT), and 2KA surge protection.

Installation :



Panel Review:



No.	Interface	Function
1	Power Jack	To connect with DC48 ~ 56V adapter
2	Power LED Indication	To indicate the power status (Refer to Description 1)
3	Status Indication	☐ Status : Port 1 mode indication (Refer to Description 3)
4	Status Indication	☒ Status : Port 2 mode indication (Refer to Description 3)
5	Jumper	Reserved
6	DIP Switch	To select the desired mode (Refer to Description 5)
7	RJ45 Connector	Port 1 ; To connect with networking devices or RA086 (Refer to Description 4)
8	PoE LED Indication	To indicate the PoE connection status (Refer to Description 2)
9	BNC Connector	Port 2 ; To connect with RA086T/ RA086R

Description:

1 Power LED Indication

Green ON	Green OFF	Breathe
Power On	Power Off	Power Saving

2 PoE LED Indicator

Blue ON	Blue OFF
PoE On	PoE Off

3 Status Indication:

Port 1 Mode Status:

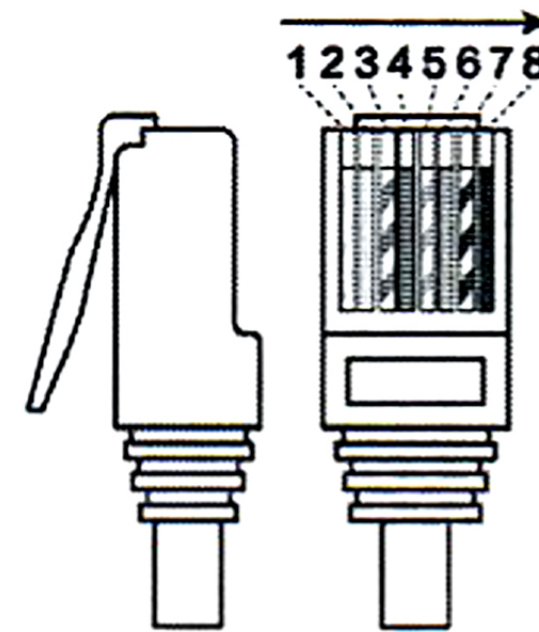
Blue ON	Blue OFF	Light Blinking
Long Distance	Unlinked or Ethernet	100Base-T1

Port 2 Mode Status:

Blue ON	Blue OFF	Light Blinking
Long Distance	Unlinked	100Base-T1

4 RJ45 Pinout

PIN	Data	PoE
1. Orange-white	TX+ (DATA1+)	PoE+ (Data Pair)
2. Orange	TX- (DATA1-)	PoE+ (Data Pair)
3. Green-white	RX+ (DATA2+)	PoE- (Data Pair)
4. Blue		PoE+ (Spare Pair)
5. Blue-white		PoE+ (Spare Pair)
6. Green	RX- (DATA2-)	PoE- (Data Pair)
7. Brown-white		PoE- (Spare Pair)
8. Brown		PoE- (Spare Pair)



※10BASE-T, 100BASE-TX and long distance 100Mbps mode use two pairs of wires to transfer data.

※100BASE-T1, long distance 10Mbps mode use one pair of wires to transfer data.

※Power is transferred through four pairs of wire.

5 DIP Switch Setting

SWITCH	SETTINGS/ FUNCTION							
SW1	Auto Mode (Default)	OFF ↑	Auto Mode with EEE	ON ↓	100Mbps	ON ↓	10Mbps	OFF ↑
SW2		OFF ↑		OFF ↑		ON ↓		ON ↓
SW3		OFF ↑		OFF ↑		ON ↓		ON ↓
SW4		OFF ↑		OFF ↑		ON ↓		ON ↓

5.1 Auto Mode/ Default: Enable Auto-Negotiation which automatically sets up the link speed and transmission protocol.

5.2 Auto+EEE Mode: Energy-Efficient Ethernet based on Auto Mode.

5.3 Advanced Mode:

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

NO	Function	↑ OFF	↓ ON
1	Link Speed	10Mbps	100Mbps
2	Ethernet	Disable	Enable
3	100BASE-T1	Disable	Enable
4	Long Distance	Disable	Enable

5.4 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

Power and Transmission Distance :

The reports below show the extension distance and the amount of power transferred by distance.

All statistics are from the result of using 24AWG CAT5e, 75Ω RG59/RG6U coaxial cables to test.

1. Transmission distance & data rate by different modes

The statistics are gotten from the testing result of using COMMScope (57535-2) CAT5e cables.

Mode	Data Rate	Distance
100BASE-TX with EEE	100Mbps	100M
100BASE-TX	100Mbps	130M
100BASE-T1	100Mbps	300M
Long Distance	100Mbps	500M
10BASE-T with EEE	10Mbps	100M
10BASE-T	10Mbps	250M
Long Distance	10Mbps	800M

2. Transmission distance by different BNC connectors & data rate

Connector	Data Rate	Distance
RG59 (75-3)	100Mbps	300M
RG6U (75-5)	100Mbps	500M
RG59 (75-3)	10Mbps	500M
RG6U (75-5)	10Mbps	500M

3. Applying RG6U coaxial cable and power from 56V Power Adapter

Input Power	Distance	Output Power
110W (56V/1.96A)	100M	60W
100W (56V/1.79A)	200M	57W
86W (56V/1.54A)	300M	41W
88W (56V/1.59A)	400M	40W
61W (56V/1.09A)	500M	28W
47W (56V/0.84A)	600M	22W
39W (56V/0.69A)	700M	17W
37W (56V/0.67A)	800M	15W
27W (56V/0.48A)	900M	11W
25W (56V/0.45A)	1000M	10W

4. Applying RG6U coaxial cable and power from 48V Power Adapter

Input Power	Distance	Output Power
96W (48V/2.00A)	100M	50W
95W (48V/1.98A)	200M	47W
77W (48V/1.60A)	300M	30W
72W (48V/1.50A)	400M	28W
43W (48V/0.91A)	500M	19W
37W (48V/0.78A)	600M	15W
31W (48V/0.66A)	700M	11W
25W (48V/0.53A)	800M	9W
22W (48V/0.46A)	800M	7W
24W (48V/0.49A)	1000M	6W

5. Applying RG59 coaxial cable and power from 56V Power Adapter

Input Power	Distance	Output Power
96W (56V/2.00A)	100M	57W
74W (56V/1.33A)	200M	34W
50W (56V/0.9A)	300M	24W
39W (56V/0.7A)	400M	17W
31.8W (56V/0.57A)	500M	14W
25W (56V/0.45A)	600M	10W
24.6W (56V/0.44A)	700M	9W
18W (56V/0.34A)	800M	7W

6. Applying RG59 coaxial cable and power from 48V Power Adapter

Input Power	Distance	Output Power
96W (48V/2.00A)	100M	49W
65W (48V/1.37A)	200M	23W
39W (48V/0.81A)	300M	16W
28W (48V/0.58A)	400M	10W
21W (48V/0.44A)	500M	8W
16W (48V/0.33A)	600M	6W
14W (48V/0.29A)	700M	4W
12W (48V/0.26A)	800M	3W

7. Applying RG6U coaxial cable and power from 802.3at PoE Switch (Zyxel GS1900-8HP)

Input Power	Distance	Output Power
802.3at PoE Switch	100M	20W
	200M	20W
	300M	19W
	400M	17W
	500M	16W
	600M	15W
	700M	14W
	800M	12W
	900M	9W
	1000M	8W

8. Applying RG59 coaxial cable and power from 802.3at PoE Switch (Zyxel GS1900-8HP)

Input Power	Distance	Output Power
802.3at PoE Switch	100M	19W
	200M	17W
	300M	15W
	400M	13W
	500M	10W
	600M	8W
	700M	7W
	800M	4W

Package Include:

1 x RA086T

1 x RA086R

4 x Screw

4 x Screw Plug

Specification:

ITEM	RA086R	RA086T
Standard	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3bw 100BASE-T1 Ethernet IEEE 802.3 N-Way Auto-Negotiation IEEE 802.3x Full Duplex Operation and Flow Control IEEE 802.3az Energy Efficient Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt Power over Ethernet Plus Plus	
Data Rate	10 Mbps / 100 Mbps	
RJ45 Side Distance (Max)	10BASE-T 250M / 100BASE-TX 130M / 100BASE-T1 300M Long Distance 10Mbps 800M / Long Distance 100Mbps 500M	
BNC Side Distance (Max)	10Mbps / 100Mbps 500M	
Ethernet Connector	RJ45 x 1 (PoE)	
BNC Connector	75Ω x 1 (PoC)	
DC Jack (Auxiliary Power)	5.5mm * 2.1mm	
Power Supply	48 ~ 56V Regulated	
Power Consumption	1W	
Ambient Temperature	0 ~ 50℃	
Dimensions (mm)	67 x 135 x 27mm	
Weight (g)	205 g	215 g
Optional Power adapter	DC 56V 2.1A Power Adapter / DC 56V 1.6A Power Adapter	

RoHS   

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