Industrial 1-Port Coax/UTP Long Reach PoE + 4-Port 10/100TX PoE Extender
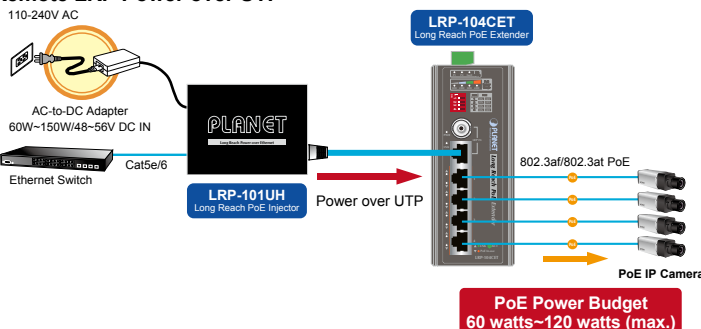
PLANET Long Reach PoE solution is designed to extend IP Ethernet transmission and inject power simultaneously into a remote 802.3af/at PoE compliant powered device (PD) beyond the 100 meters distance limit of Ethernet.

Perfect 1-to-4 PoE over Coaxial/UTP Extender in Harsh Environment

The LRP-104CET, a PLANET Long Reach PoE solution, is an industrial-grade **Single-port Long Reach PoE to 4-port 802.3af/at PoE Extender** delivered in an IP30 rugged strong case. It features long-range data and power transmission over **any existing coaxial**, **UTP**, **twisted-pair cable** or **telephone wires** for distance up to 1,000m and converts power to standard 802.3af/at PoE over another 100-meter Ethernet cable connected to four remote PoE PDs at the same time. The LRP-104CET provides one to multi applications for configure-free operation and deployment in climatically demanding environments with wide temperature range from **-20 to 70 degrees C**. It makes the installation of remote PoE powered devices easier and more efficiently.

Remote LRP Power over UTP

Physical Ports

- LRP interfaces
  - 1 BNC female, Long Reach PoE over Coaxial PD
  - 1 RJ45 connector, Long Reach PoE over UTP PD
- Copper interfaces
  - 4 10/100BASE-TX RJ45 ports with IEEE 802.3at PoE Plus PSE

Long Reach Power over Ethernet

- Power and Ethernet data transmission over coaxial up to 1km
- Power and Ethernet data transmission over UTP up to 500m
- Supports Long Reach PoE power up to 25 watts (depending on LRP Injector/Switch and cable distance)

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus/ end-span PSE
- Supports PoE power budget up to 120 watts (external DC power input)
- Supports PoE power up to 30 watts for each PoE port (external DC power input)
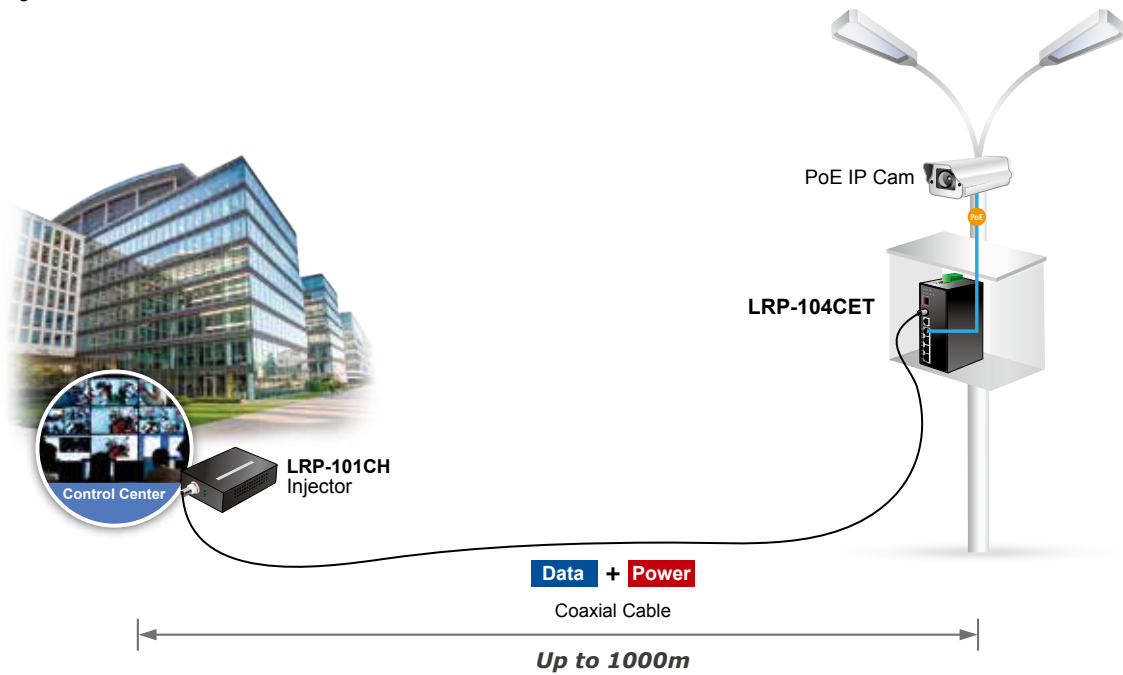- Auto detects remote PD

Industrial Design

- IP30 aluminum case
- DIN rail and wall-mount design
- -20 to 70 degrees C operating temperature
- 24~48V DC, redundant power with polarity reverse protect function
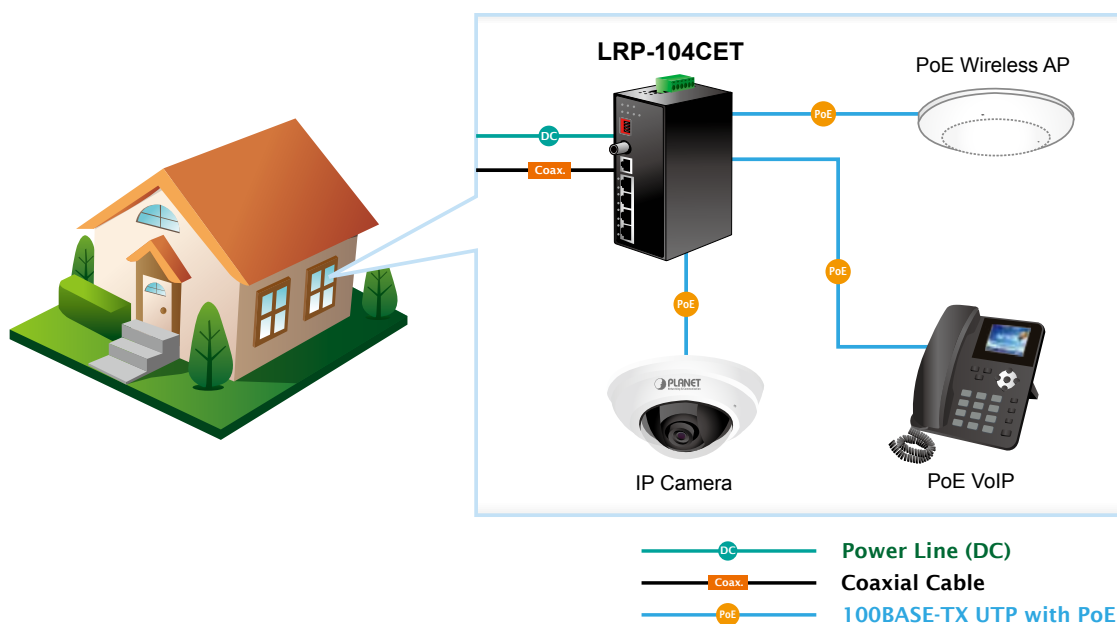
IP Ethernet and Power over Long Distance

The LRP-104CET provides a Long Reach PoE solution for adding PoE ports without running more cabling and achieves more flexible network applications without requiring an external power adapter.

A normal UTP cable can only be extended up to 100 meters, but with the LRP-104CET, the distance for PoE networking can be extended up to **1,000 meters (3,280ft.)** when functioning with PLANET LRP injector or LRP switch over 75 ohm coaxial cable or up to **500 meters (1,640ft.)** over twisted-pair UTP cable, without affecting the quality of video transmission. Thus, it eliminates the need for an additional electrical outlet as its single power source can provide power to a PoE PD at long range via the LRP-104CET.

PoE IP Cam

LRP-104CET

LRP-101CH Injector

Control Center

Data + Power

Coaxial Cable

Up to 1000m

Two Types of Power Input: Remote LRP Power through BNC/RJ45 and Local Power

In the Long Reach PoE mode, the LRP-104CET's PoE budget depends on the output of the Long Reach Poe Injector or Long Reach Switch, but with External DC Power input, it is possible to increase the PoE budget up to 120W. It means the four IEEE 802.3at PDs (powered device) can be powered by the LRP-104CET. It also features a strong dual power input system (**Dual 24V~48V DC**) incorporated into customer's automation network to enhance system reliability and uptime.

LRP-104CET

PoE Wireless AP

IP Camera

PoE VoIP

Power Line (DC)

Coaxial Cable

100BASE-TX UTP with PoE

Configure-free Installation

The LRP-104CET can be used immediately without the need of configuration and is also compliant with all kinds of IP network protocols. Moreover, the rich diagnostic LEDs and PoE Power Usage LEDs on the front panel show the operating status of the individual port and the whole system. The DIP switch can control PoE output of each port by turning ON or OFF, enabling the administrator to efficiently manage the network.

Stable Operating Performance under Difficult Environments

PLANET Long Reach PoE Extender is the perfect solution for extended data and power transmission for warehouses, parking lots, campuses, casinos, and many more. It can operate stably under temperature range from **-20 to 70 degrees C** which enables the users to conveniently apply the device in any harsh environment. Without the problem of power source, it makes the installation of remote PoE powered devices easier and more efficiently.
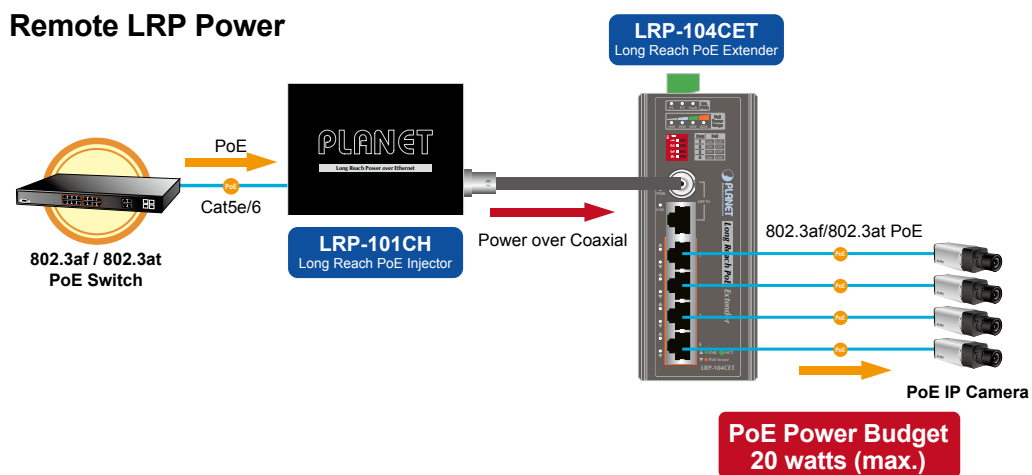
Applications

One Power Sourcing for Multi Powered Devices Solution

PLANET Long Reach PoE solution is designed to extend IP Ethernet transmission and inject power simultaneously into a remote 802.3af/at PoE compliant powered device (PD) beyond the 100 meters distance limit of Ethernet. The solution works in pairs for point to point and point to multi-point connectivities.
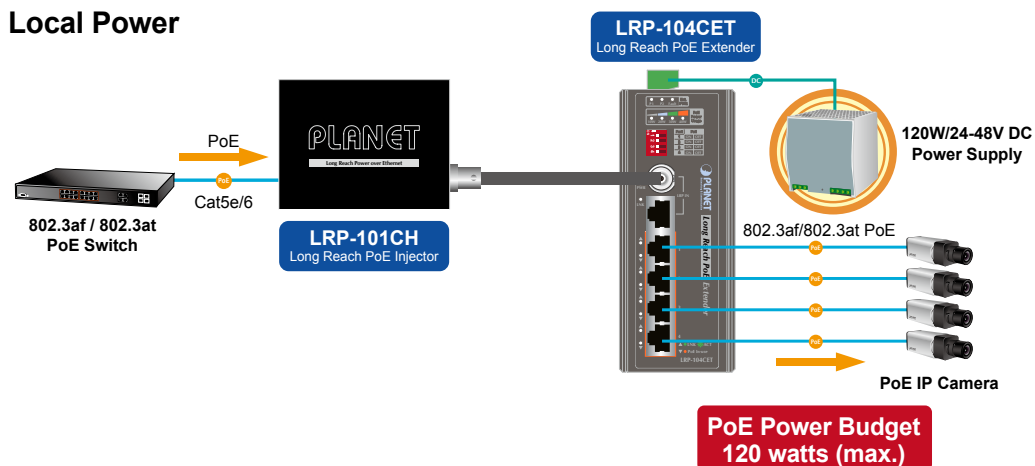
Point to Multi Points

Type 1: Remote LRP Power through BNC/RJ45 with DC 56V input

The LRP-101 Injector, powered by IEEE 802.3at/af PoE or DC power adapter, transmits data and power over coaxial/ UTP cable to the LRP-104CET extender. An IEEE 802.3at/af compliant PoE PD will then automatically be powered by the LRP-104CET via UTP cabling.

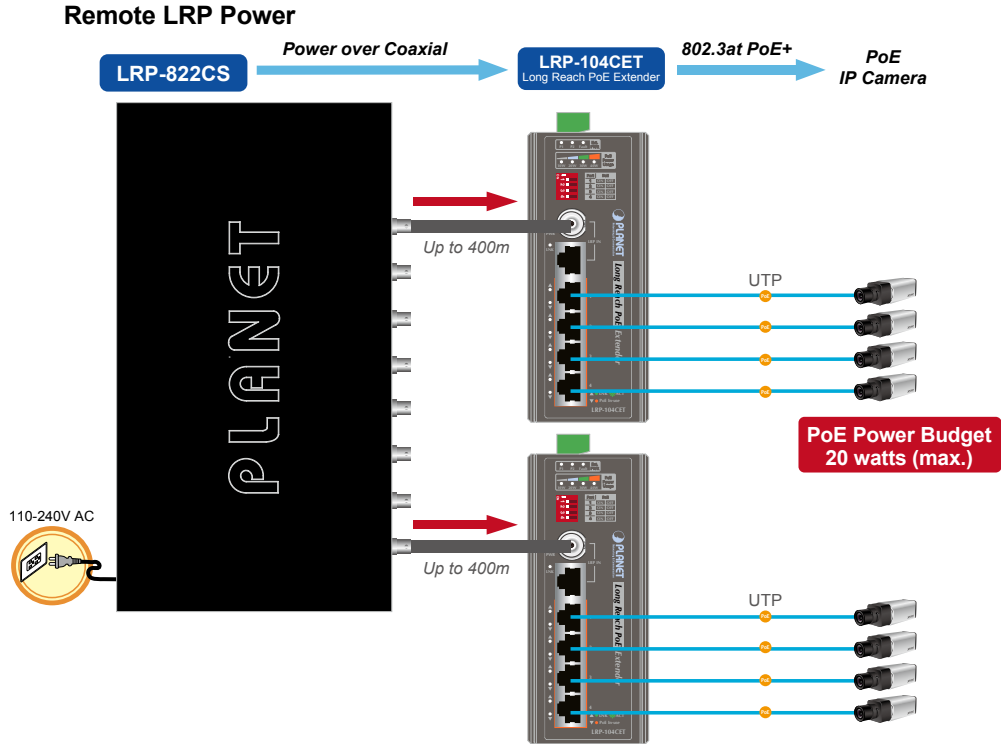**Type 2: Local Power with External DC Input (DC 24V~48V)**

The LRP-101 Injector, powered by IEEE 802.3at/af PoE or DC power adapter, transmits data through coaxial/ UTP cable to the LRP-104CET extender powered by external DC power. An IEEE 802.3at/af compliant PoE PD will then automatically be powered by the LRP-104CET via UTP cabling.
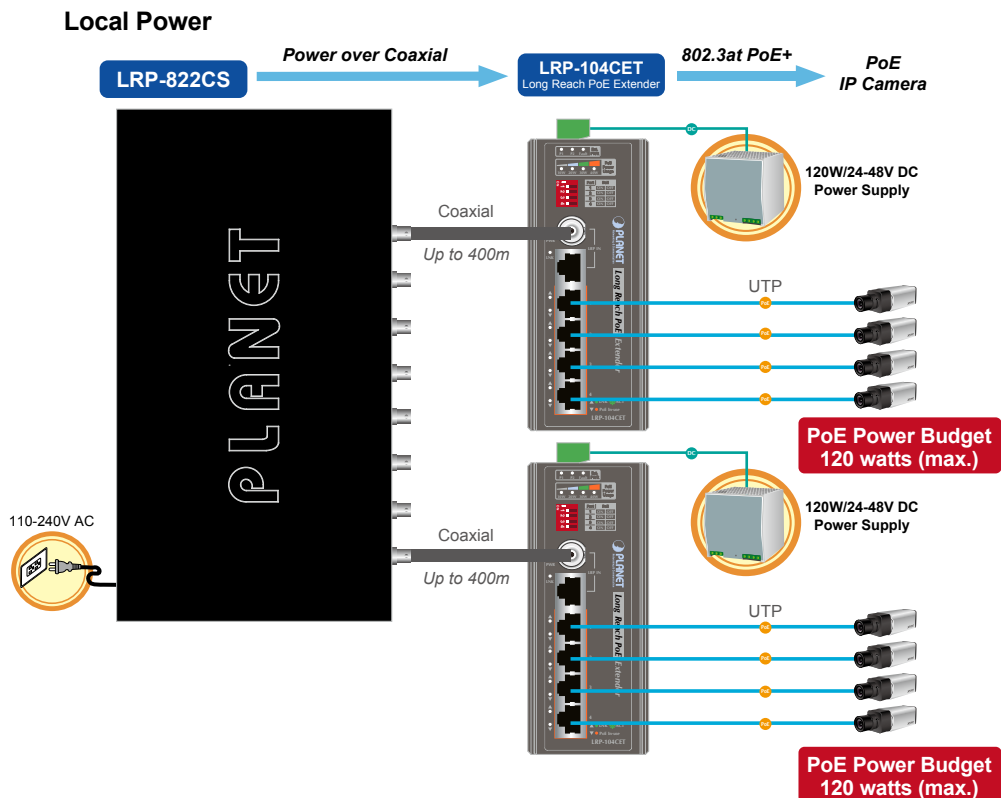
Multi Points to Multi Points:

Type 1: Remote LRP Power through BNC with DC 56V input

The LRP Switch, powered by itself, transmits data and power over coaxial cable to the LRP-104CET extender. An IEEE 802.3at/af compliant PoE PD will then automatically be powered by the LRP-104CET via UTP cabling.

Remote LRP Power

Type 2: Local Power with External DC input (DC 24V~48V)

Powered by external DC power, the LRP Switch transmits data through coaxial cable to the LRP-104CET extender. An IEEE 802.3at/af compliant PoE PD will then automatically be powered by the LRP-104CET via UTP cabling.
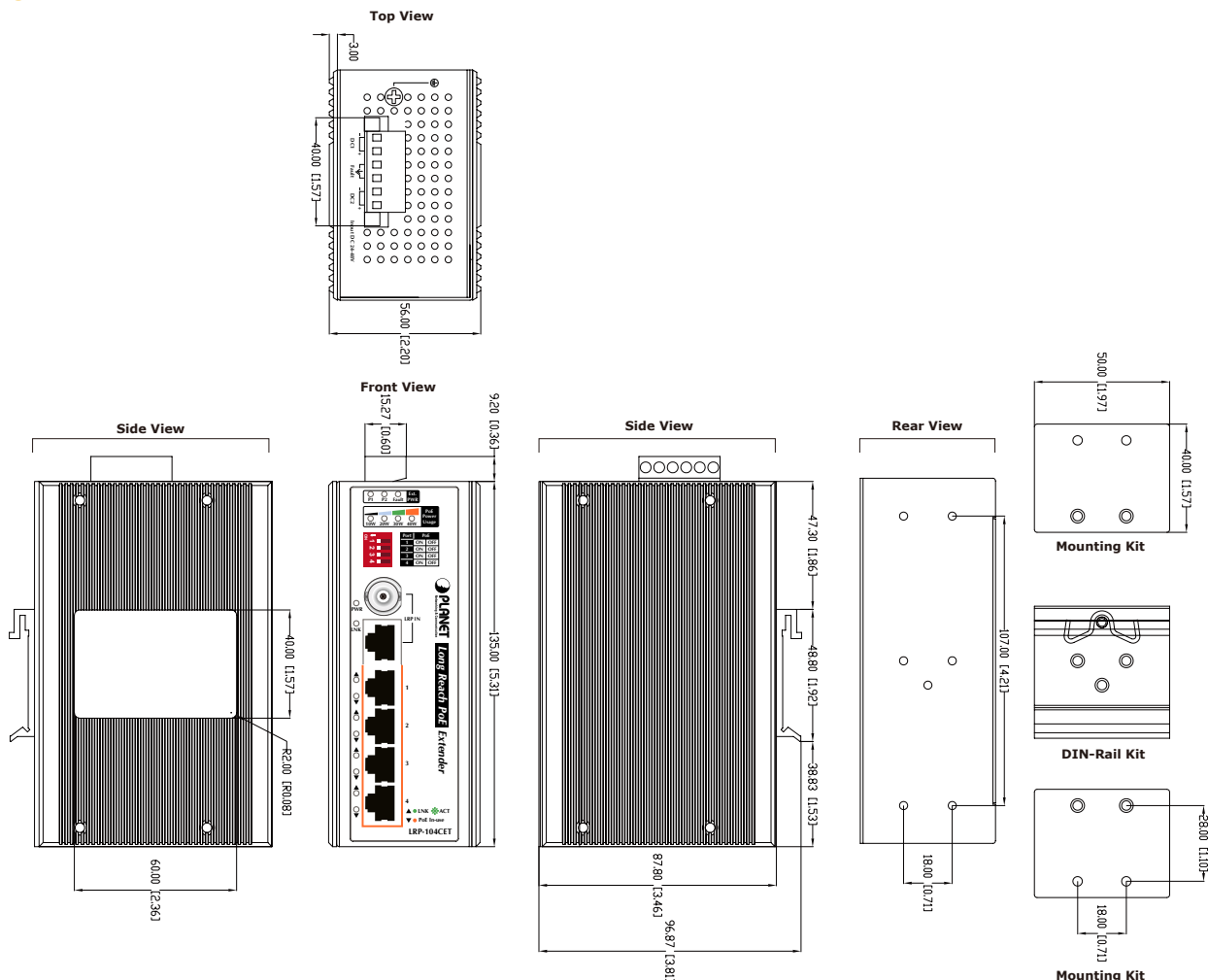
Local Power

Specifications

Model	LRP-104CET		
Hardware Specifications			
Ethernet Interface	Copper Ports	Four 10/100BASE-TX RJ45 auto-MDI/MDI-X	
	PoE Injector Ports	Four ports with 802.3at/af PoE injector function with Port-1 to Port-4	
	Functionality	Four DIP switches to control PoE output on or off with Port-1 to Port-4	
	PoE Standards Compliance	IEEE 802.3at Power over Ethernet Plus/PSE	
	PoE Type	End-span	
	PoE Power output	52V DC, PoE output depends on LRP Injector or LRP Switch	
		52V DC, 25 watts per port (external DC input)	
	Cabling	Ethernet: 10BASE-T: 2-pair UTP Cat.3, 4 and 5	
		Ethernet: 100BASE-TX: 2-pair UTP Cat.5, 5e and 6	
	Maximum Distance	100m	
	Maximum Frame size	1522 bytes	
SRAM Packet Buffer	Connectivity	One BNC female	One RJ45 connector
Jumbo Packet Size		Long Reach PoE over Coaxial PD	Long Reach PoE over UTP PD
Long Reach PoE Interface	Power Input	44~ 56V DC	
	Power Pin Assignment	BNC center pole: DC+	RJ45 Pins 1, 3, 5, 7: VCC+
		BNC shield: DC-	RJ45 Pins 2, 4, 6, 8: VCC-
	Cabling	Coaxial cable: 75 ohm	Cat. 3, 4, 5, 5e UTP cable (100 meters, max.)
		RG-6/U cable, less than 12Ω/1000 ft.	EIA/TIA-568 100-ohm STP (100 meters, max.)
		RG-59/U cable, less than 30Ω/1000 ft.	
	Maximum Distance	Max. 200m with PoE+ output (656ft.)	Max. 100m with PoE+ output (328ft.)
		Max. 400m with PoE output (1,312ft.)	Max. 400m with PoE output (1,312ft.)
		Max. 1000m without PoE output (3,280ft.)	
	Long Reach Ethernet Standard	IEEE 1901	
	Modulation Type	Wavelet-OFDM	
	Security	128-bit AES encryption	
	Frequency Band	2 ~ 28 MHz	
	Encryption	AES 128-bit	
	LRP Compatibility	With power over coaxial input:	With power over UTP input:
		■ LRP-101CH – 1-Port LRP Injector	■ LRP-101UH – 1-Port LRP Injector
		■ LRP-822CS – 8-Port LRP over Coax Switch	
		■ • LRP-1622CS – 16-Port LRP over Coax Switch	
LED Indicator	3 x LED for External Power Supply:	Green: DC Power 1	
		Green: DC Power 2	
		Red: Power Fault	
	4 x LED for PoE Usage:	Green: 10W/20W/30W/40W	
	2 x LED for Long Reach PoE In:	Green: PWR	
		Green: LNK	
	2 x LED for each RJ45 interface (Port-1 and Port-4)	Green: 10/100Mbps LNK/ACT	
		Orange: PoE-in-use	
Installation	DIN rail kit and wall-mount kit		
Dimensions (W x D x H)	135 x 87.8 x 56 mm		
Weight	644g		
Power Requirements	44~56V DC power over coaxial input		
	DC 24~48V, redundant power with polarity reverses protection function		
Power Consumption/ Dissipation	130 watts/446BTU (Ethernet with PoE Full Loading)		
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V DC		
Enclosure	Aluminum case		
Standards Conformance			
Standards Compliance	IEEE 802.3 Ethernet/10BASE-T		
	IEEE 802.3u Fast Ethernet/100BASE-TX		
	IEEE 802.3x Full-Duplex Flow Control		
	IEEE 802.3at Power over Ethernet Plus		
Regulatory Compliance	FCC Part 15 Class A, CE		
Stability Testing	IEC60068-2-32 (free fall)		
	IEC60068-2-27 (anti-shock)		
	IEC60068-2-6 (anti-vibration)		

Environment	
Temperature	Operating: -20~70 degrees C Storage: -25~75 degrees C
Humidity	Operating: 5~95% (non-condensing) Storage: 5~95% (non-condensing)

Performance					
			802.3af/at PoE Total Output Capability		
Weight	Distance	Data Rate(Upload/Download)	Remote LRP Power through BNC W/56VDC IN	Remote LRP Power by LRP-822CS/LRP-1622CS	Local DC Power through Terminal Block
	200m	88/88 Mbps	21.5W	18W/19W	120W
	400m	85/86 Mbps	20W	14W/16W	120W
	600m	66/67 Mbps	19W	10W/12W	120W
	800m	48/57 Mbps	11W	7W/8W	120W
	1000m	44/57 Mbps	5W		120W

			802.3af/at PoE Total Output Capability	
UTP Performance	Distance	Data Rate(Upload/Download)	Remote LRP Power through RJ45 W/56VDC IN	Local DC Power through Terminal Block
	100m	80/85Mbps	21.2W	120W
	200m	63/75Mbps	21W	120W
	300m	33/60Mbps	20W	120W
	400m	5/10Mbps	14W	120W

*As there are various resistance values in the category of RG-59/U or RG-6/U cable, the actual data rate will vary on the quality of the copper wire and environmental factors.

**Depending on what the DC/PoE power input and the length of coaxial cable are.

Diagram

Dimensions (unit = mm)

Ordering Information

LRP-104CET	Industrial 1-Port Coax/UTP Long Reach PoE + 4-Port 10/100TX PoE Extender

Related Products

LRP-101C-KIT	1-Port Long Reach PoE over Coax Extender Kit (LRP-101CH + LRP-101CE)
LRP-101U-KIT	1-Port Long Reach PoE over UTP Extender Kit (LRP-101UH + LRP-101UE)
LRP-822CS	8-Port Long Reach PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
LRP-1622CS	16-Port Coax + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Long Reach PoE over Coaxial Managed Switch
ICA-M4320P	H.265 3 Mega-pixel IR IP Camera with Remote Focus and Zoom

LRP-104CET