Long Reach PoE over Coaxial Extender Kit

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.

Convenient PoE over Coaxial Extender in Harsh Environment

The LRP-101C-KIT, a PLANET Long Reach PoE solution, is a Single-port PoE over Coaxial Extender Kit featuring long range data and power transmission for distance up to 1,000m (3,280ft.) over coaxial cable, and another 100m over Ethernet cable to remote PoE IP camera, PoE wireless AP or access control systems complied with 802.3af/at PoE. The LRP-101C-KIT provides point to point application for easy plug-n-play operation and deployment in climatically demanding environments with wide temperature range from -20 to 70 degrees C. Without the problem of power source, it makes the installation of remote PoE powered devices easier and more efficiently.

Power over Ethernet

- Eliminates power cabling with PoE over coaxial
- Supports Power over Ethernet PSE (PoE Injector)
- Power and Ethernet data transmission of 1,000m over coaxial cabling
- Complies with IEEE 802.3af / IEEE 802.3at Power over Ethernet PD on RJ45 port
- Supports Long Reach PoE power up to 30.8 watts (depending on power source and cable distance)
- Supports PoE Power up to 25 watts (depending on power source and cable distance)
- Auto detects remote powered device (PD)
- Plug and Play; no PC required

Industrial Case and Installation

- Supports extensive LED indicators for network diagnostics
- Metal case protection
- Compact size, DIN-rail and wall-mount design
- Supports EFT surge protection of 2kV DC for power line
- Supports Ethernet ESD protection of 4kV DC
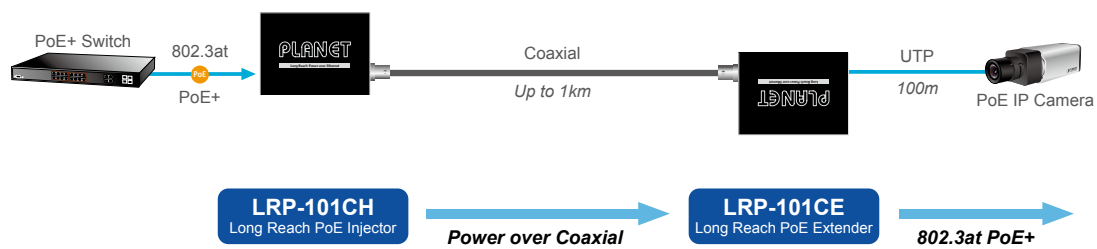- -20 to 70 degrees C operating temperature

Composition of Long Reach PoE over Coaxial Extender Kit

The LRP-101C-KIT consists of a Long Reach PoE injector and a Long Reach PoE extender set which can work in pair anywhere on your network infrastructure. It contains two brand-new products:

- LRP-101CH: 1-Port 10/100TX PoE PD + 1-Port Coax Long Reach PoE Injector
- LRP-101CE: 1-Port 10/100TX PoE PSE + 1-Port Coax Long Reach PoE Extender

The LRP-101CH transmits data and power over coaxial cable to the LRP-101CE, which can be located as far as 1,000m away. It will then deliver the data and power output with a maximum of up to 25 watts to a PoE PD over Ethernet cable, thus expediting the IP surveillance network or wireless LAN infrastructure in long distance.
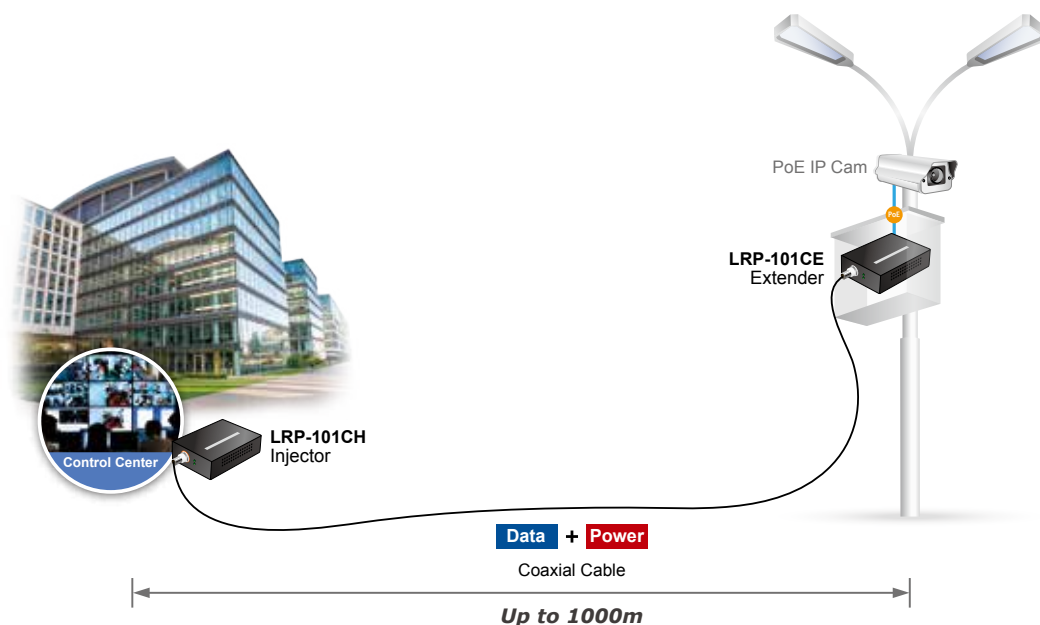
Both of the two products come in a compact but rugged metal housing. Their wall-mounted design fits easily in any space-limited location.
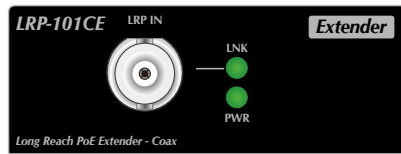

Functions	LRP Injector	LRP Extender
	LRP-101CH	LRP-101CE
Power Input	RJ45 with 802.3at/af PoE input or power adapter with 48~56V DC in	BNC with DC power over coaxial input
Power Output	BNC with DC power over coaxial output	RJ45 with 802.3at/af PoE output
LAN Connection	NVR or PoE+ Ethernet switch at head-end	PoE IP camera, PoE wireless AP, PoE access control at remote site

IP Ethernet and Power over Long Existing Coaxial Cable

A normal UTP cable can only be extended up to 100 meters, but the LRP-101C-KIT can extend PoE networking up to 1,000 meters (3,280ft.) **over existing 75 ohm coaxial cable** with stable, **high-quality video transmission**. It eliminates the need for additional remote site power while allowing a single power source to provide power to both LRP extenders and the PoE IP camera at long range.

BNC Connector
Long Reach PoE IN

LRP-101CE LRP IN Extender
LNK
PWR
Long Reach PoE Extender - Coax

PoE In-use LNK/ACT
PoE OUT
10/100BASE-TX

RJ45 Connector
802.3af/at PoE Output

Stable Operating Performance under Difficult Environments

PLANET Long Reach PoE Extender Kit is the perfect solution for distance extension for PoE or non-PoE networking for warehouses, parking lots, campuses, casinos, and many more. They can operate stably under temperature ranging from -20 to 70 degrees C to enable the users to conveniently operate the kit in almost any location.

Plug-n-play Installation

With the plug and play feature, PLANET Long Reach PoE Extender Kit 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 on the front panel show the operating status of the individual port and the whole system, enabling the administrator to efficiently manage the network.
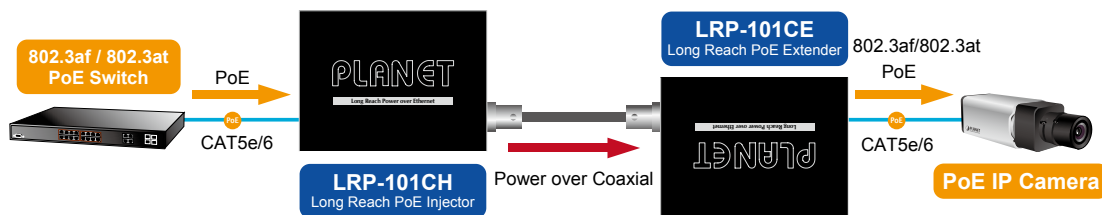
Applications

The LRP-101C-KIT includes two products: The LRP-101CH, a Coax Long Reach PoE Injector (LRP injector), and the LRP-101UE, a Coax Long Reach PoE Extender (LRP extender). Working in pair, the LRP-101CH can be powered by either external DC power adapter or PoE+ Ethernet switch, and from there, the LRP-101CE's 802.3at standard PoE output goes to PoE Powered Device (PD). The LRP-101C-KIT can be widely used in Intelligent Transportation Systems (ITS), traffic surveillance, security monitoring, automation control, intelligent residential districts and so on.
The LRP-101C-KIT can function in two different kinds of combinations:

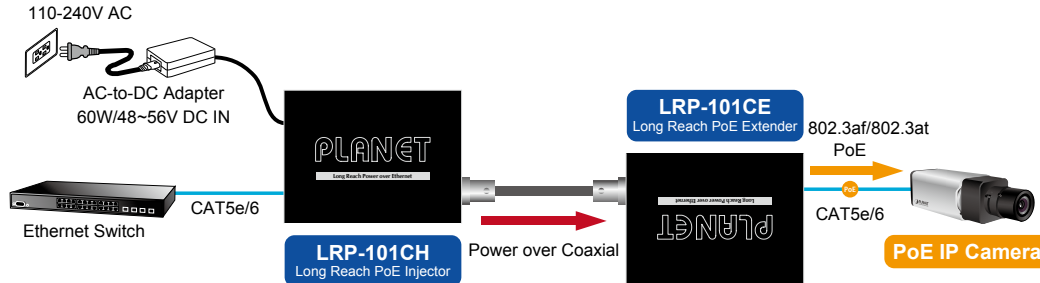### *Type 1 – LRP-101CH with PoE power input and LRP-101CE with PoE power output*

The LRP-101CH injector is powered by IEEE 802.3at/af PoE source and it transmits data and power over coaxial cable to the LRP-101CE extender. An IEEE 802.3at/af compliant PoE PD will then automatically be powered by the LRP-101CE via UTP cabling.

802.3af / 802.3at PoE Switch PoE PLANET Long Reach Power over Ethernet **LRP-101CH** Long Reach PoE Injector CAT5e/6 Power over Coaxial **LRP-101CE** Long Reach PoE Extender PLANET Long Reach Power over Ethernet 802.3af/802.3at PoE CAT5e/6 **PoE IP Camera**

Functions	LRP Injector	LRP Extender
	LRP-101CH	LRP-101CE
Power Input	RJ45 with 802.3at/af PoE input	BNC with DC power over coaxial input
Power Output	BNC with DC power over coaxial output	RJ45 with 802.3at/af PoE output

Type 2 – LRP-101CH with 48~56V DC power input and LRP-101CE with PoE power output

The LRP-101CH injector is powered via the DC power adapter and it transmits data and power over coaxial cable to the LRP-101CE extender. An IEEE 802.3at/af compliant PoE PD will then automatically be powered by the LRP-101CE via UTP cabling.
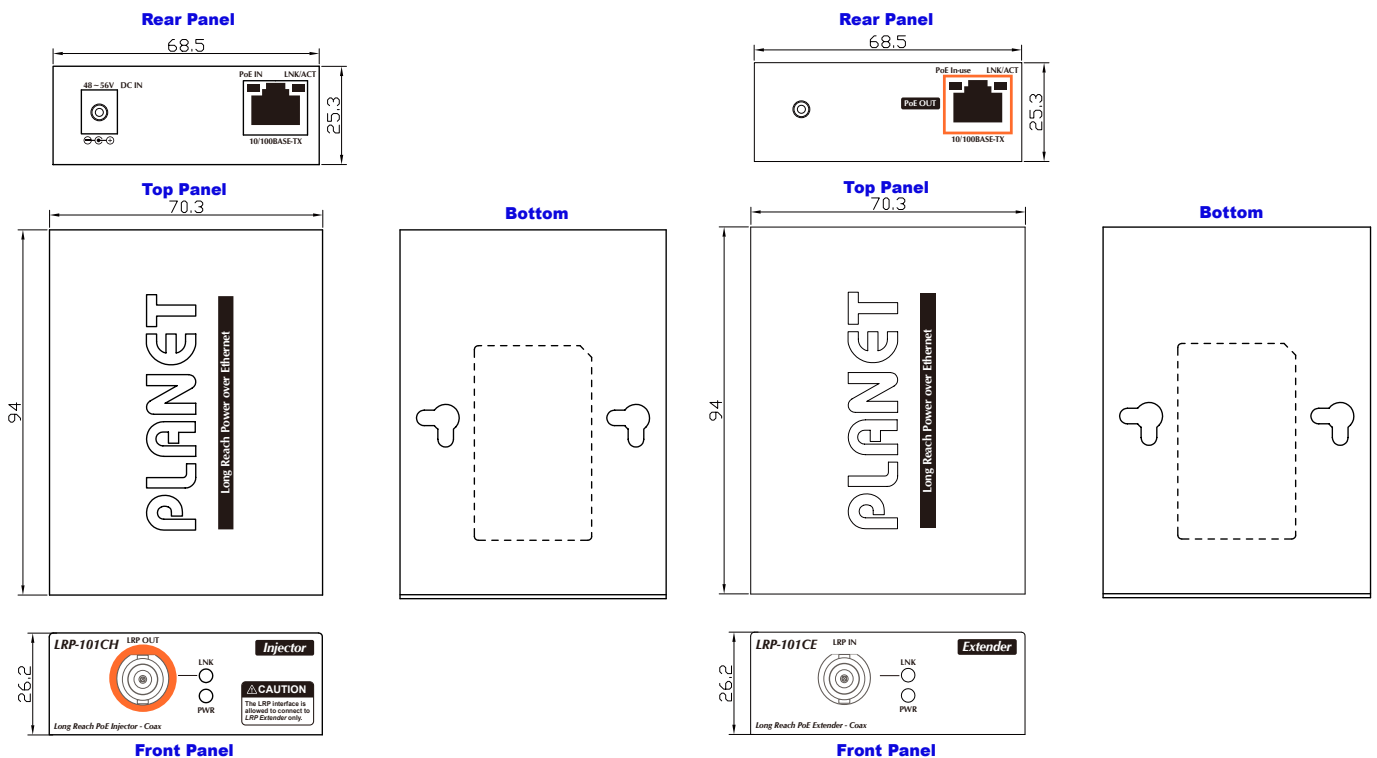

Functions	LRP Injector	LRP Extender
	LRP-101CH	LRP-101CE
Power Input	Power adapter with 48~56V DC in	BNC with DC power over coaxial input
Power Output	BNC with DC power over coaxial output	RJ45 with 802.3at/af PoE output

Specifications

Model	LRP-101CH	LRP-101CE
Functions	Long Reach PoE Injector	Long Reach PoE Extender
Hardware Specifications		

		LRP-101CH	LRP-101CE
Ethernet Interface	Copper	10/100BASE-TX RJ45 auto-negotiation / auto-MDI/MDI-X	
	Power over Ethernet Standard	IEEE 802.3at/af PoE PD (Powered Device)	IEEE 802.3at/af PoE PSE (Power Source Equipment)
	PoE Input	Supports both Mid-span and End-span PSE Input Range: 48~56V DC	-
	PoE Output	-	56V DC, 600mA max.
	PoE Budget	-	Up to 25 watts
	PoE Mode	-	End-span, RJ45 Pin 1/2(+), 3/6(-)
	Data Rate	100/100Mbps	
	Cabling	Cat5e or above	
	Maximum Distance	100 meters	
	Maximum Frame Size	1522 bytes	
Long Reach PoE Interface	Connectivity	1 x BNC female connector Long Reach PoE over coaxial PSE	1 x BNC female Long Reach PoE over coaxial PD
	Power Input	-	37~56V DC
	Power Output	41~56V DC	-
	Power Pin Assignment	– BNC center pole: DC+ – BNC shield: DC -	– BNC center pole: DC+ – BNC shield: DC -
	Cabling	Coaxial cable: 75 ohm RG-6/U cable, less than 12Ω/1,000ft. RG-59/U cable, less than 30Ω/1,000ft.	
	Maximum Distance	Max. 200m with PoE+ output (656ft.) Max. 600m with PoE output (1,968ft.) Max. 1200m without PoE output (3,937ft.)	
	Long Reach Ethernet Standard	IEEE 1901	
	Modulation Type	Wavelet-OFDM	
	Security	128-bit AES encryption	
	Frequency Band	2 ~ 28 MHz	
	Encryption	AES 128-bit	

		Distance	Data Rate* (Upload / Download)	LRP-101CE 802.3af/at PoE Output Capability**	
				LRP-101CH with 56V DC in	LRP-101CH with 30W PoE+ in
	Performance**	200m	93 / 93Mbps	29W	16W
		400m	93 / 93Mbps	22W	14W
		600m	87 / 91Mbps	13W	10W
		800m	75 / 83Mbps	10W	8W
		1000m	55 / 73Mbps	8W	7W

	LRP Compatibility	LRP-101CE - 1-Port LRP Extender	With power over coaxial input – LRP-101CH, 1-Port LRP Injector – LRP-822CS, 8-Port LRP over Coax Switch – LRP-1622CS, 16-Port LRP over Coax Switch
LED Indicators		4 x LEDs – PWR – LRP LNK – PoE IN – LNK/ACT	4 x LEDs – PWR – LRP LNK – PoE-in-use – LNK/ACT
ESD Protection		4KV DC	
EFT Protection		2KV	-
Enclosure		Metal case	
Installation		Wall mount or DIN rail with optional kit	
Dimensions (W x D x H)		94 x 70 x 26 mm	
Weight		200g	375g
Power Requirements		– RJ45 PoE Input: 802.3at/af 48~56V DC – DC Input: 48~56V DC	BNC Power over Coaxial Input: 44~56V DC
Standards Conformance			
Standards Compliance		IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3af Power over Ethernet (802.3at Type 1) IEEE 802.3at Power over Ethernet (802.3at Type 2)	
Regulation Compliance		FCC Part 15 Class A, CE	
Environment			
Temperature		Operating: -20~70 degrees C Storage: -40~75 degrees C	
Humidity		Operating: 5~95% (non-condensing) Storage: 5~95% (non-condensing)	
Note		*1.Upload: LRP-101CE to LRP-101CH, data stream. Download: LRP-101CH to LRP-101CE, data stream. 2. 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 environment factors. ** Depending on what the DC/PoE Power Input and the length of coaxial cable are.	

Drawing

Ordering Information

LRP-101C-KIT	Long Reach PoE over Coaxial Extender Kit (Coaxial, 1km)

Related Products

LRP-101CE	1-port 10/100TX PoE PSE + 1-port Coax Long Reach PoE Extender
LRP-101U-KIT	Long Reach PoE over UTP Extender Kit (UTP, 500m)
LRP-822CS	8-port Coax + 2-port 10/100/1000T + 2-port 100/1000X SFP Long Reach PoE over Coaxial Managed Switch (240W)

Related PoE Products

GS-4210-24P2S	24-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Switch
ICA-2200	Full HD PoE Box IP Camera
ICA-2250VT	Industrial PoE Plus Outdoor IR IP Camera
ICA-2500	5 Mega-pixel PoE Box IP Camera
ICA-3250V	Full HD Outdoor IR PoE IP Camera
ICA-4200V	Full HD 20M IR Vari-focal Dome IP Camera
ICA-4500V	5 Mega-pixel 20M IR Vari-focal Dome IP Camera
ICA-5250	Full HD Ultra-mini Vandal Dome
ICA-5350V	3 Mega-pixel Vandalproof IR IP Camera
ICA-HM127	3 Mega-pixel H.264 Box IP Camera
ICA-HM136	H.264 2 Mega-pixel 20M IR Vandalproof Dome IP Camera
ICA-HM351	2 Mega-pixel 35M IR Outdoor Box PoE IP Camera
ICA-HM620	2 Mega-pixel PoE Plus Speed Dome Internet Camera
POE-162S	IEEE 802.3at Gigabit High Power over Ethernet Splitter
POE-E201	IEEE 802.3at Power over Ethernet Extender
WNAP-C3220	802.11n Wireless Ceiling-mount PoE Access Point
WNAP-W2200	802.11n 300Mbps In-Wall Access Point w/ USB Charger (EU Type)
WDAP-C7400	900Mbps Dual Band Ceiling-mount Wireless Access Point
WDAP-C7200AC	1200Mbps 802.11ac Dual Band Ceiling-mount Wireless Access Point
WGSW-24040HP4	24-Port 10/100/1000Mbps 802.3at PoE+ with 4-Port Shared SFP Managed Switch(440W)
WGSW-24040HP	24-Port 10/100/1000Mbps 802.3at PoE+ with 4-Port Shared SFP Managed Switch(220W)
VIP-256PT	802.3af PoE SIP IP Phone
VIP-2020PT	Enterprise HD PoE IP Phone (2-Line)
VIP-5060PT	Professional HD PoE IP Phone (6-Line)
XGSW-28040HP	L2+ 24-Port 10/100/1000Mbps 802.3at PoE + 4-Port 10G SFP+ Managed Switch with Hardware Layer3 IPv4/IPv6 Static Routing

LRP-101C-KIT