Long Reach PoE over UTP Extender Kit

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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 UTP Extender in Harsh Environment

The LRP-101U-KIT, a PLANET Long Reach PoE solution, is a Single-port PoE over UTP Extender Kit featuring long range data and power transmission for distance up to 500m (1,640ft.) over UTP 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-101U-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.

PoE over Long UTP

- Eliminates power cabling with PoE over UTP
- Supports Power over Ethernet PSE (PoE Injector)
- Power and Ethernet data transmission of 500m over UTP/STP 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
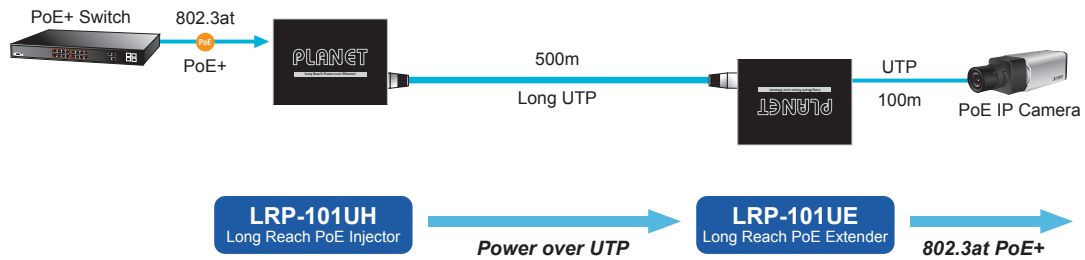- -20 to 70 degrees C operating temperature

Distance & Power are no longer issues

PoE Wi-Fi AP

PoE In
PoE Switch
UTP
Single-Port Injector
LRP-101UH

Power + Data
Long UTP Cable
up to 500m

PoE Out
UTP
Single-Port Extender
LRP-101UE

Extend IP Ethernet transmission and inject power beyond the 100 meters
1-Port Long Reach PoE over UTP Extender Kit (LRP-101UH + LRP-101UE) ▶ LRP-101U-KIT

Composition of Long Reach PoE over UTP Extender Kit

The LRP-101U-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-101UH: 1-Port 10/100TX PoE PD + 1-Port UTP Long Reach PoE Injector
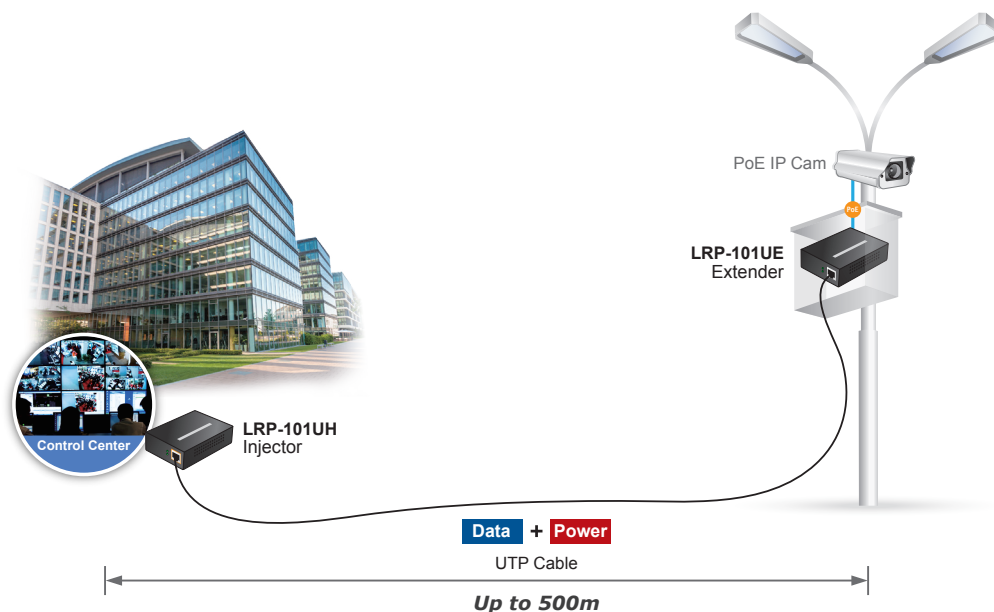• LRP-101UE: 1-Port 10/100TX PoE PSE + 1-Port UTP Long Reach PoE Extender

The LRP-101UH transmits data and power over UTP cable to the LRP-101UE, which can be located as far as 500m 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.
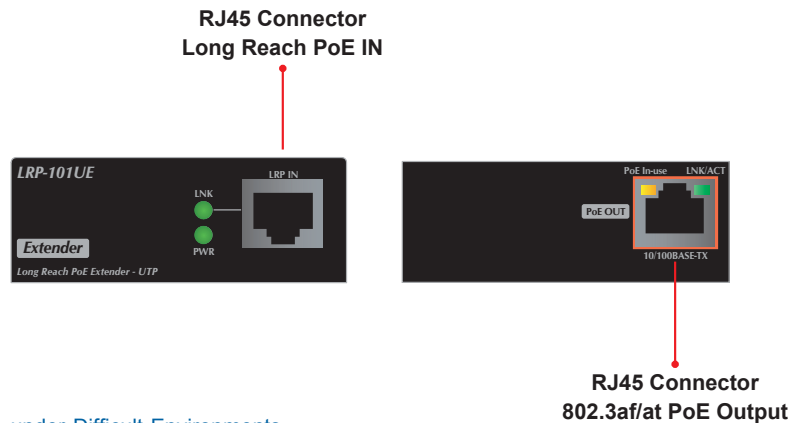

Functions	LRP Injector	LRP Extender
	LRP-101UH	LRP-101UE
Power Input	RJ45 with 802.3at/af PoE input or power adapter with 48~56V DC in	UTP with DC power over UTP input
Power Output	UTP with DC power over UTP output	RJ45 with 802.3at/af PoE output
LAN Connection	NVR or PoE+ Ethernet switch at head-end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

IP Ethernet and Power over Long UTP or Twisted-pair Cable

A normal UTP cable can only be extended up to 100 meters, but the LRP-101U-KIT can extend PoE networking up to 500 meters (1,640ft.) over long 4-pair UTP cable or up to 300 meters (1,000ft.) **over an existing 1-pair twisted-pair cable**, such as telephone wire, 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.

RJ45 Connector
Long Reach PoE IN

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.
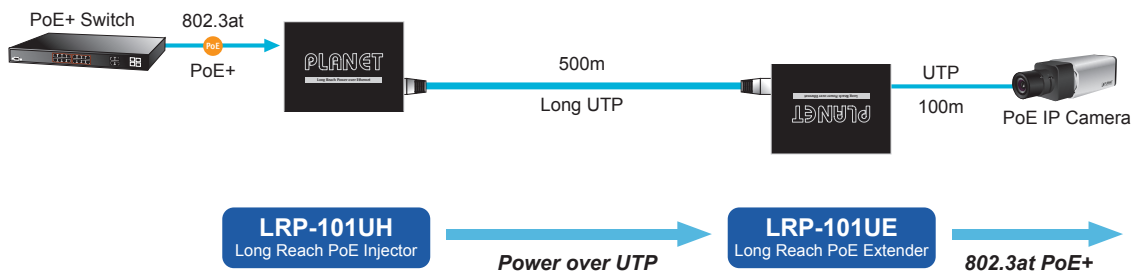
Applications

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

The LRP-101U-KIT can function in two different kinds of combinations:

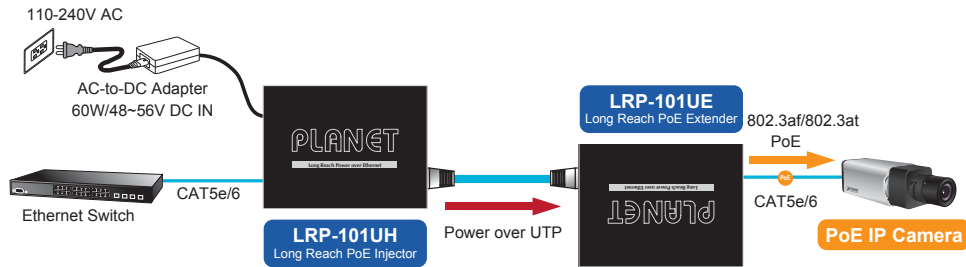## Type 1: LRP-101UH with PoE power input and LRP-101UE with PoE power output

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

Functions	LRP Injector	LRP Extender
	LRP-101UH	LRP-101UE
Power Input	RJ45 with 802.3at/af PoE input	UTP with DC power over UTP input
Power Output	UTP with DC power over UTP output	RJ45 with 802.3at/af PoE output

Type 2: LRP-101UH with 48~56V DC power input and LRP-101UE with PoE power output

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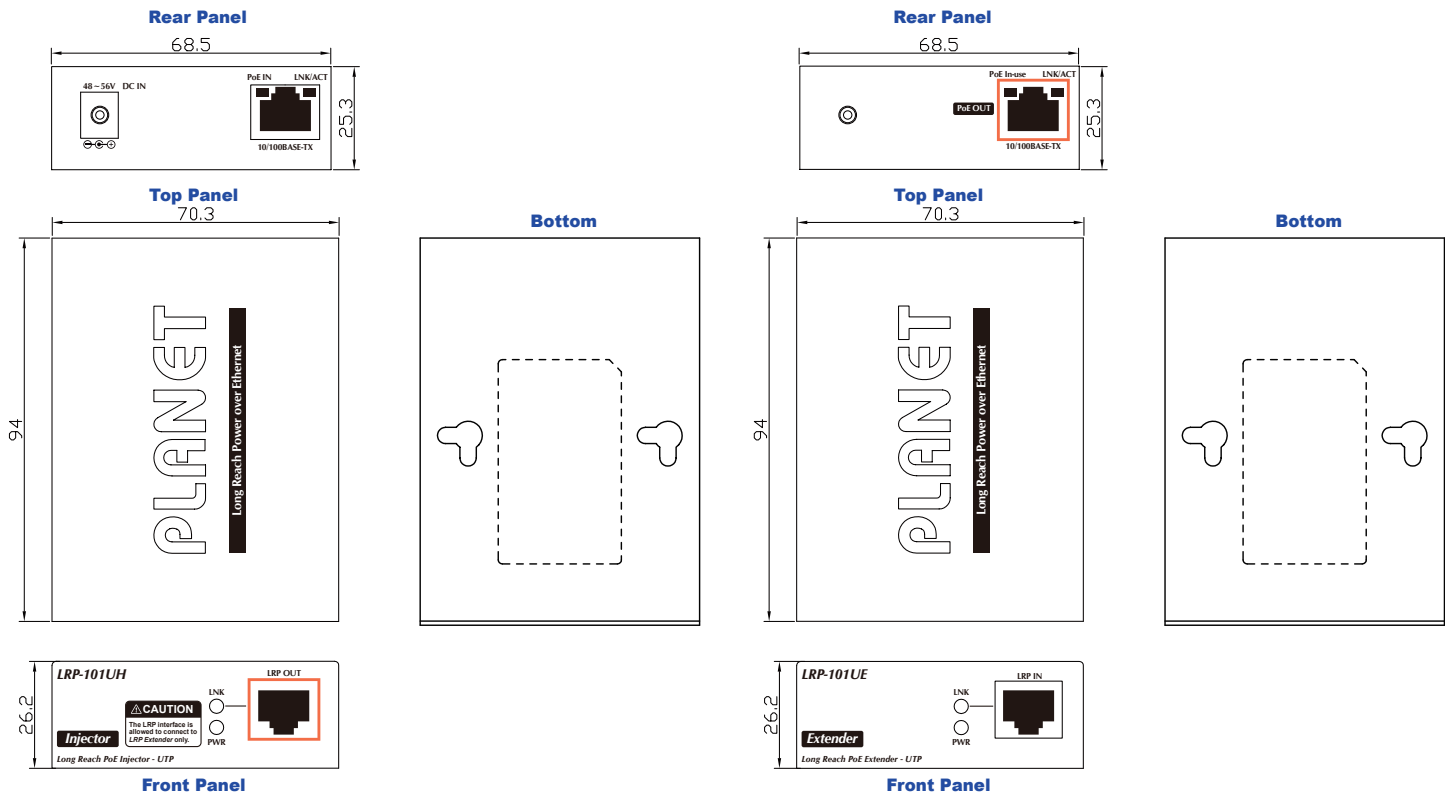

Functions	LRP Injector	LRP Extender
	LRP-101UH	LRP-101UE
Power Input	Power adapter with 48~56V DC in	UTP with DC power over UTP input
Power Output	UTP with DC power over UTP output	RJ45 with 802.3at/af PoE output

Specifications

Model	LRP-101UH	LRP-101UE
Functions	Long Reach PoE Injector	Long Reach PoE Extender
Hardware Specifications		

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	100m	
	Maximum Frame Size	1522 bytes	
Long Reach PoE Interface	Connectivity	1 x RJ45 connector Long Reach PoE over UTP PSE	1 x RJ45 connector Long Reach PoE over UTP PD
	Power Input	-	37~56V DC*
	Power Output	41~56V DC	
	Power Pin Assignment	RJ45 Pin 1, 3, 5, 7: VCC+ RJ45 Pin 2, 4, 6, 8: VCC-	RJ45 Pin 1, 3, 5, 7: VCC+ RJ45 Pin 2, 4, 6, 8: VCC-
	Cabling	Cat. 3, 4, 5, 5e UTP cable (100 meters, max.) EIA/TIA-568 100-ohm STP (100 meters, max.)	
	Maximum Distance	Max. 100m with PoE+ output (328ft.) Max. 500m with PoE output (1,640ft.) 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-101UE 802.3af/at PoE Output Capability**	
Performance**	Distance	Data Rate* (Upload / Download)	LRP-101UH with 56V DC in	LRP-101UH with 30W PoE+ in
	100m	94 / 94Mbps	30W	19W
	200m	82 / 82Mbps	30W	18W
	300m	63 / 67Mbps	30W	17W
	400m	44 / 48Mbps	22W	14W
	500m	30 / 30Mbps	18W	12W

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	193g	190g
Power Requirements	– RJ45 PoE Input: 802.3at/af 48~56V DC – DC Input: 48~56V DC	Power over RJ45 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-101UE to LRP-101UH,data stream.
	   Download: LRP-101UH to LRP-101UE,data stream.
	 2.As there are various resistance values in the category of 5/5e 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 UTP cable are.	

Drawing

Rear Panel
68.5
48 ~ 56V DC IN   PoE IN   LNK/ACT
25.3
10/100BASE-TX

Top Panel
70.3
94

Bottom

LRP-101UH   LRP OUT
⚠CAUTION
The LRP interface is
allowed to connect to
LRP Extender only.
LNK
PWR
Injector
Long Reach PoE Injector - UTP
26.2
Front Panel

Rear Panel
68.5
PoE In-use   LNK/ACT
PoE OUT
25.3
10/100BASE-TX

Top Panel
70.3
94

Bottom

LRP-101UE   LRP IN
LNK
PWR
Extender
Long Reach PoE Extender - UTP
26.2
Front Panel