

Industrial 1-Port 10/100/1000T Ultra PoE + 1-Port Coax/UTP Long Reach PoE Kit (LRP-201ET + LRP-201HT)



PLANET **Long Reach PoE solution** is designed to extend IP Ethernet transmission and inject power simultaneously into a remote ultra PoE compliant powered device (PD) beyond the 100 meters distance limit of Ethernet.

Powerful PoE over Coaxial/UTP Extender Kit

The LRP-201-KIT, a PLANET Long Reach PoE solution, is an **Industrial Single-port Ultra PoE over Coaxial/UTP Extender Kit** featuring long range data and power transmission over any existing **coaxial, UTP cable** or **telephone wire** for distance up to **600 meters (1,968ft.)** and converts power to **IEEE 802.3at/bt** PoE over another **100-meter** Ethernet cable connected to the remote PoE PD. The LRP-201-KIT provides multi applications for easy **plug-n-play** operation and deployment in climatically demanding environments with wide temperature range from **-20 to 70 degrees C**. It makes the installation of remote PoE PDs easier and more efficient.



Composition of Long Reach PoE Extender Kit

The LRP-201-KIT consists of a **Long Reach PoE injector** and a **Long Reach PoE extender** which can work in pair anywhere on your network infrastructure. It contains two brand-new products:

Interface

- LRP-201HT:
 - 1-port **BNC LRP output**
 - 1-port **RJ45 LRP output**
 - 1-port Ethernet **Data + Power input**
 - 1 terminal block for master and slave power input.
(Power Range: 48~54V DC redundant power)
 - 1 PAIR button
 - 1 Reset button
- LRP-201ET:
 - 1-port **BNC LRP input**
 - 1-port **RJ45 LRP input**
 - 1-port Ethernet **Data + Power output**
 - 1 PAIR button
 - 1 Reset button

Power over Ethernet

- Eliminates power cabling with PoE over coaxial/UTP/telephone wire
- Supports Power over Ethernet PSE (PoE Injector)
- Power and Ethernet data transmission over coaxial up to 600m
- Power and Ethernet data transmission over UTP up to 400m
- Power and Ethernet data transmission over telephone wire up to 300m
- Complies with IEEE 802.3at/bt Power over Ethernet PD on RJ45 port
- Supports Long Reach PoE power up to 75 watts (depending on power source and cable distance)
- Supports PoE Power up to 60 watts (depending on power source and cable distance)
- Auto detects remote PD
- Plug and Play with no configuration required

Hardware

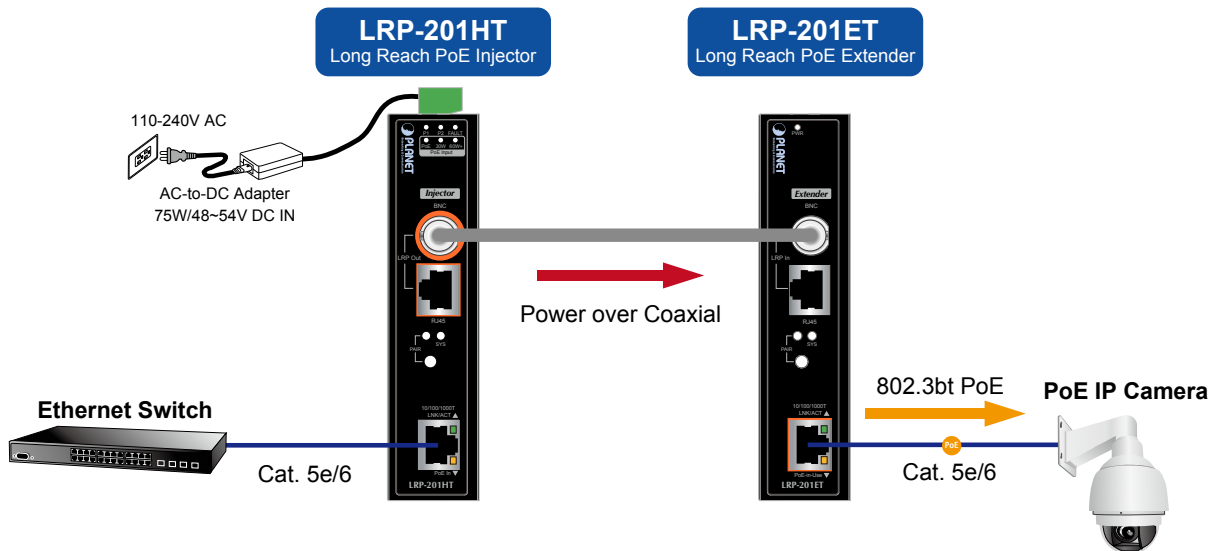
- LED indicators for Power LED, SYS LED, PAIR LED, PoE-in-Use LED and PoE Input LED
- IP30 slim type metal case

Industrial Case and Installation

- Compact size; DIN-rail or wall-mount design
- Supports 6KV DC Ethernet ESD protection
- -20 to 70 degrees C operating temperature

- **LRP-201HT:** Industrial 1-Port 10/100/1000T Ultra PoE PD + 1-Port Coax/UTP Long Reach PoE Injector
- **LRP-201ET:** Industrial 1-Port 10/100/1000T Ultra PoE PSE + 1-Port Coax/UTP Long Reach PoE Extender

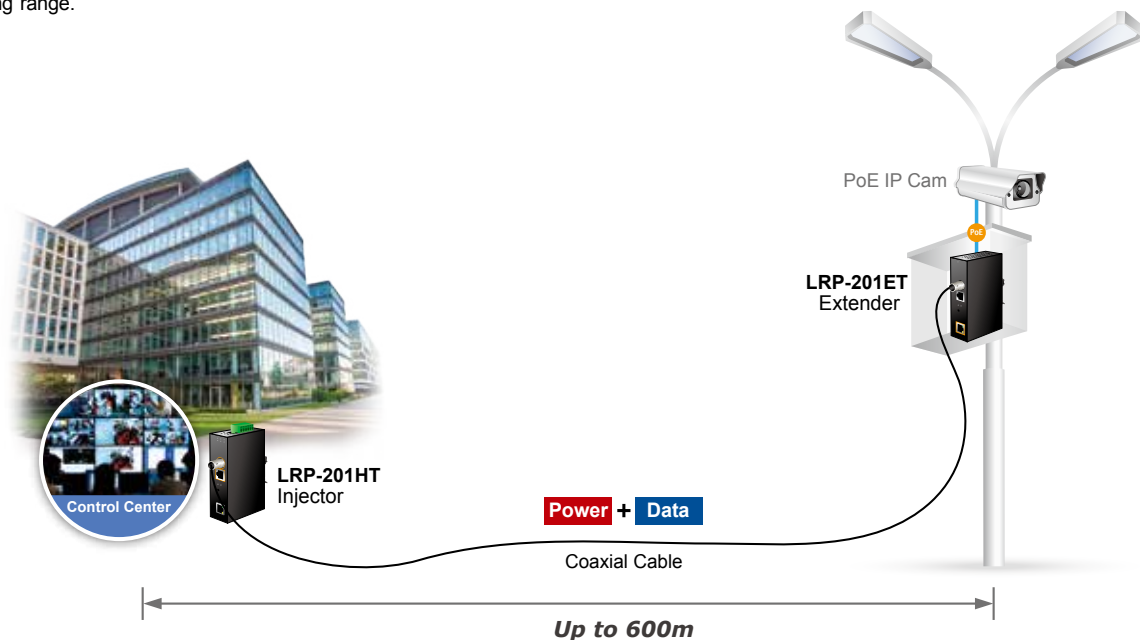
The LRP-201HT can not only support dual power input (by DC adapter/PoE) but also transmit data and power over coaxial/UTP cable to the LRP-201ET, which can be located as far as 600m away. It will then deliver the data and power output with a maximum of up to 60 watts to a PoE PD over an additional 100-meter long 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 IP30 metal housing. Their DIN-rail/wall-mounted design fits easily in any space-limited location.



Functions	LRP Injector	LRP Extender
	LRP-201HT	LRP-201ET
Power Input	Power adapter with 48~54V DC in or RJ45 with 802.3at/bt PoE input	BNC with DC power over coaxial input or UTP with DC power over UTP input
Power Output	BNC with DC power over coaxial output or UTP with DC power over UTP output	RJ45 with 802.3at/bt PoE output
LAN Connection	Ethernet or ultra PoE switch at head-end	PoE PD

IP Ethernet and Power over Long Existing Coaxial/UTP Cable

A normal UTP cable can only be extended up to 100 meters, but with the LRP-201-KIT, the distance for PoE networking can be extended up to **600 meters (1,968ft.)** when functioning with the LRP-201-KIT over 75 ohm coaxial cable or up to **400 meters (1,312ft.)** over UTP 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 PD at long range.



Securing Network Connection with 128-bit AES Encryption

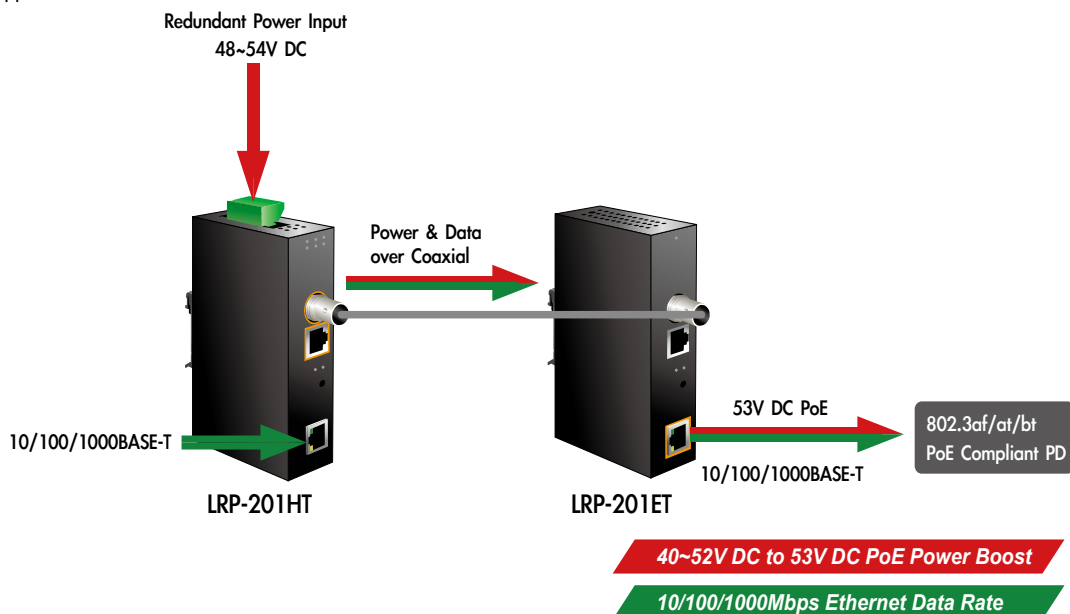
Simply by pressing the PAIR button on the LRP-201HT and LRP-201ET, users can easily set up a hassle-free, secure network within minutes. When the PAIR LED turns on, it provides 128-bit AES encryption for network security and data protection.



128-bit AES Encryption for Network Security and Data Protection

Convenient and Reliable Power System

The LRP-201HT provides **dual-redundant**, reversible polarity 48~54V DC power supply inputs for high availability applications. When the LRP-201HT transmits power over coaxial/UTP cable to the LRP-201ET, the LRP-201ET adopts **power boost technology** to solve voltage loss issue but does not require additional power supplies.



Plug & 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.

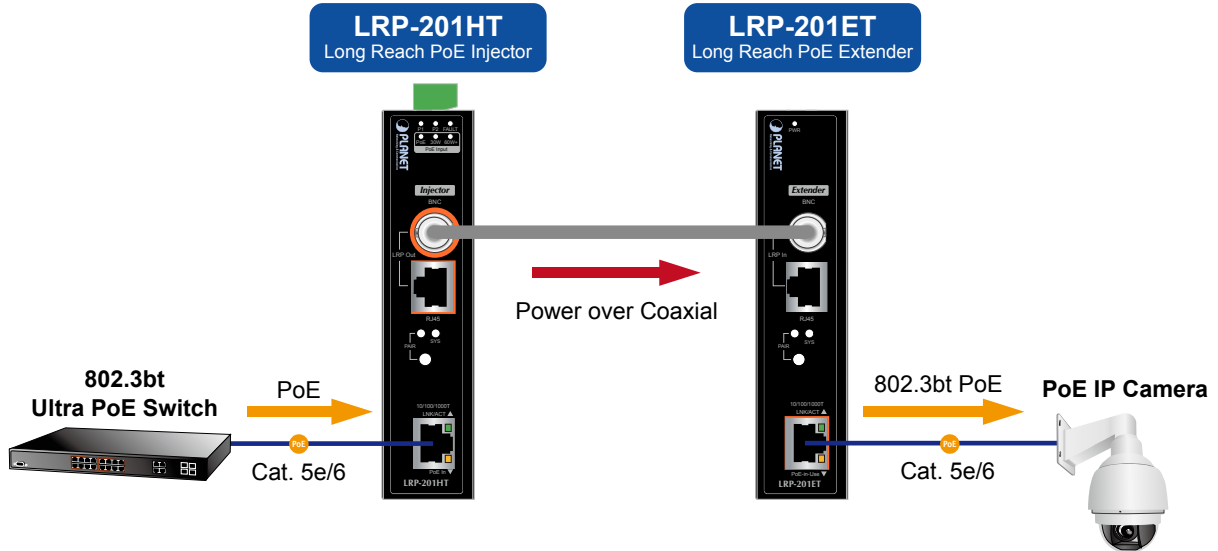
Applications

The LRP-201-KIT includes two products: The LRP-201HT, a coaxial/UTP Long Reach PoE injector (LRP injector), and the LRP-201ET, a coaxial/UTP Long Reach PoE extender (LRP extender). Working in pair, the LRP-201HT can be powered by either external DC power adapter or PoE++ Ethernet switch, and from there, the LRP-201ET's ultra PoE output goes to a PoE PD. The LRP-201-KIT can be widely used in Intelligent Transportation Systems (ITS), traffic surveillance, security monitoring, automation control, intelligent residential districts and so on.

The LRP-201-KIT can function in four different kinds of combinations:

■ **Type 1—LRP-201HT with PoE power input connects to LRP-201ET via coaxial cable**

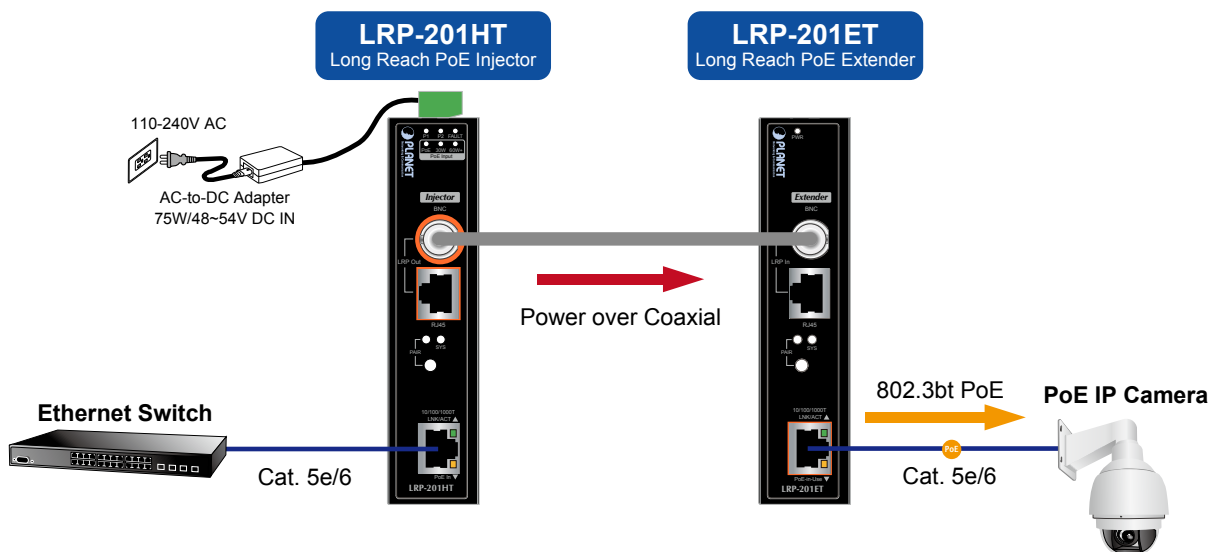
The LRP injector is powered via IEEE 802.3at/bt PoE and connected to LRP-201ET via coaxial cable. The IEEE 802.3at/bt compliant PoE PD will automatically be powered by the LRP extender via UTP.



Functions	LRP Injector	LRP Extender
	LRP-201HT	LRP-201ET
Power Input	RJ45 with 802.3at/bt PoE input	BNC with DC power over coaxial input
Power Output	BNC with DC power over coaxial output	RJ45 with 802.3at/bt PoE output

■ **Type 2—LRP-201HT with 48~54V power adapter connects to LRP-201ET via coaxial cable**

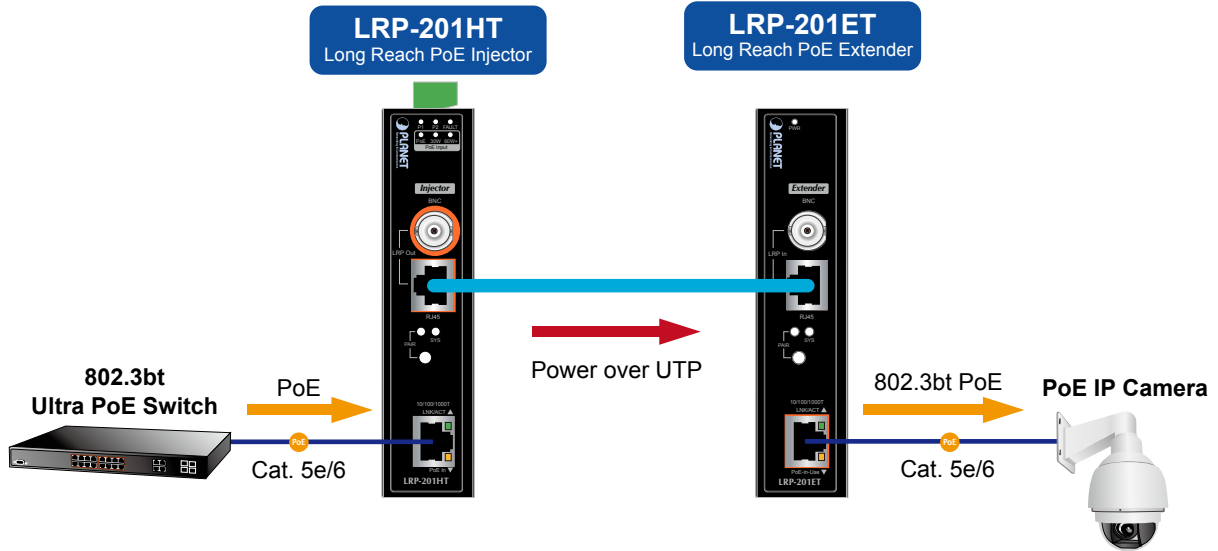
The LRP injector is powered via the external power adapter and connected to LRP-201ET via coaxial cable. The IEEE 802.3at/bt compliant PoE PD will automatically be powered by the LRP extender via UTP.



Functions	LRP Injector	LRP Extender
	LRP-201HT	LRP-201ET
Power Input	Power adapter with 48~54V DC in	BNC with DC power over coaxial input
Power Output	BNC with DC power over coaxial output	RJ45 with 802.3at/bt PoE output

■ Type 3—LRP-201HT with PoE power input connects to LRP-201ET via UTP cable

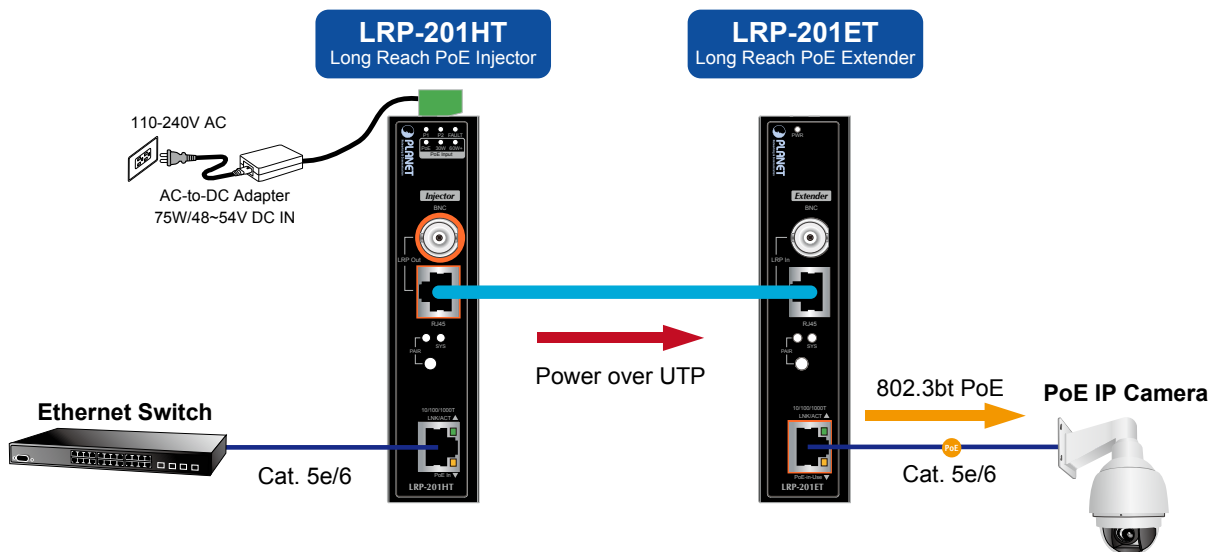
The LRP injector is powered via IEEE 802.3at/bt PoE and connected to LRP-201ET via UTP cable. The IEEE 802.3at/bt compliant PoE PD will automatically be powered by the LRP extender via UTP.



Functions	LRP Injector	LRP Extender
	LRP-201HT	LRP-201ET
Power Input	RJ45 with 802.3at/bt PoE input	UTP with DC power over UTP input
Power Output	UTP with DC power over UTP output	RJ45 with 802.3at/bt PoE output

■ Type 4—LRP-201HT with 48~54V power adapter connects to LRP-201ET via UTP cable

The LRP injector is powered via the external power adapter and connected to LRP-201ET via UTP cable. The IEEE 802.3at/bt compliant PoE PD will automatically be powered by the LRP extender via UTP.



Functions	LRP Injector	LRP Extender
	LRP-201HT	LRP-201ET
Power Input	Power adapter with 48~54V DC in	UTP with DC power over UTP input
Power Output	UTP with DC power over UTP output	RJ45 with 802.3at/bt PoE output

Specifications

Model	LRP-201HT		LRP-201ET		
Functions	Long Reach PoE Injector		Long Reach PoE Extender		
Hardware Specifications					
Input Power Terminal Block	Redundant power: 48~54V DC Fault alarm: 1A@24V DC		-		
Ethernet Interface	Copper	10/100/1000BASE-T RJ45 Auto-negotiation, auto-MDI/MDI-X			
	Power over Ethernet Standard	IEEE 802.3at/bt PoE PD	IEEE 802.3at/bt PoE PSE		
	PoE Input	Supports both mid-span and end-span PSE Input Range: 48~54V DC			
	PoE Output	-	56V DC, 1.2A max.		
	PoE Budget	-	Up to 60 watts		
	PoE Mode	-	Pair 1 End-span: 1/2 (-), 3/6 (+) Pair 2 Mid-span: 4/5 (+), 7/8 (-)		
	Data Rate	100/100/1000Mbps			
	Cabling	Cat. 5e or above			
	Maximum Distance	100 meters			
Maximum Frame Sizes	1522bytes				
Long Reach PoE Interface*	Connectivity	1 x RJ45 female connector Long Reach PoE over UTP PSE		1 x RJ45 female connector Long Reach PoE over UTP PD	
		1 x BNC female connector Long Reach PoE over coaxial PSE		1 x BNC female connector Long Reach PoE over coaxial PD	
	Power Input	-		40~54V DC	
	Power Output	44~54V DC		-	
	Power Pin Assignment	Coaxial ■ BNC center pole: DC+ ■ BNC shield: DC- UTP ■ RJ45 Pins 1, 3, 5, 7: VCC+ ■ RJ45 Pins 2, 4, 6, 8: VCC-			
	Cabling	Coaxial ■ Coaxial cable: 75 ohm ■ RG-6/U cable, less than 12Ω/1000 ft. ■ RG-59/U cable, less than 30Ω/1000 ft. UTP ■ Cat. 5e/6 UTP cable ■ EIA/TIA-568 100-ohm STP			
	Maximum Distance	Coaxial ■ Max. 200m with PoE++ output (656ft.) ■ Max. 400m with PoE+ output (1312ft.) ■ Max. 600m with PoE output (1,968ft.) UTP ■ Max. 100m with PoE++ output (328ft.) ■ Max. 200m with PoE+ output (656ft.) ■ Max. 300m with PoE output (984ft.) ■ Max. 400m with PoE output (1,312ft.)			
	Long Reach Ethernet Standard	ITU-T G.hn			
	Modulation Type	OFDM			
	Security	128-bit AES encryption			
	Frequency Band	1 ~ 100 MHz			
	Multiple Nodes	Supports up to 2 LRP extenders within 0.6km			
	LRP Compatibility	LRP-201ET - 1-Port LRP Extender		LRP-201HT - 1-Port LRP Injector	
	LRP Coaxial Performance	Distance	Data Rate (Upload / Download)	48V DC Input	60W PoE++ Input
200m		477/471 Mbps	41W	34W	
400m		239/234 Mbps	16W	22W	
600m		107/98 Mbps	6W	8W	
LRP UTP Performance	Distance	Data Rate (Upload / Download)	48V DC Input	60W PoE++ Input	
	100m	407/415Mbps	59W	40W	
	200m	268/270 Mbps	55W	36W	
	300m	134/146 Mbps	34W	28W	
	400m	75/83 Mbps	24W	23W	
LED Indicators	<ul style="list-style-type: none"> ■ P1 ■ P2 ■ FAULT ■ PoE Input ■ SYS ■ PAIR ■ PoE IN ■ LNK/ACT 		<ul style="list-style-type: none"> ■ PWR ■ SYS ■ PAIR ■ PoE-in-Use ■ LNK/ACT 		

ESD Protection	6KV DC	
PAIR Button	Press for 3 sec to join LRP-201ET	Press for 3 sec to join LRP-201HT
Reset Button	Press over 10 sec to return to factory default	
Enclosure	IP30 slim type metal case	
Installation	DIN-rail kit or wall-mount ear	
Dimensions (W x D x H)	135 x 87.8 x 32mm	
Weight	520g	510g
Power Requirements	<ul style="list-style-type: none"> ■ RJ45 PoE Input: 802.3af/at/bt 48~54V DC, 2.5A max. ■ DC Input: 48~54V DC, 2.5A max. 	<ul style="list-style-type: none"> ■ BNC Power over Coaxial Input: 40~54V DC, 1.8A max. ■ RJ45 Power over Ethernet Input: 40~54V DC, 1.8A max.
Standards Conformance		
Standards Compliance	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000BASE-T Gigabit Ethernet IEEE 802.3bt 4-pair Power over Ethernet Type 3 IEEE 802.3at Power over Ethernet Plus IEEE 802.3af Power over Ethernet	
Regulatory Compliance	FCC Part 15 Class A, CE	
Environment		
Temperature	Operating: -20~70 degrees C Storage: -30~75 degrees C	
Humidity	Operating: 5~95% (non-condensing) Storage: 5~95% (non-condensing)	
Standard Accessories		
Package Contents	<ul style="list-style-type: none"> ■ LRP-201-KIT ■ User's Manual ■ Wall-mount Kit ■ RJ45 Dust Cap x 2 ■ Warning Sticker 	

* 1-1 Please do not connect any Ethernet device to LRP OUT Port of the LRP-201HT; otherwise, it will damage the Ethernet device.
 1-2 Please do not connect any Ethernet device to LRP IN Port of the LRP-201ET; otherwise, it will damage the Ethernet device.

Ordering Information

LRP-201-KIT	Industrial 1-Port 10/100/1000T Ultra PoE + 1-Port Coax/UTP Long Reach PoE Kit (LRP-201ET + LRP-201HT)
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Related Products

LRP-201ET	Industrial 1-Port 10/100/1000T Ultra PoE + 1-Port Coax/UTP Long Reach PoE Extender (-20~70 degrees C)
IPOE-171-60W	Industrial Single-Port 10/100/1000Mbps 802.3bt PoE Injector (60 watts, -40~75 degrees C, 48~56VDC)
IPOE-171-95W	Industrial Single-Port 10/100/1000Mbps 802.3bt PoE Injector (95 watts, -40~75 degrees C, 24~48V DC)
GS-5220-24UP4XV	L2+ 24-Port 10/100/1000T Ultra PoE + 4-Port 10G SFP+ Managed Switch with LCD Touch Screen (400W)
GS-5220-24UP4XVR	L2+ 24-Port 10/100/1000T Ultra PoE + 4-Port 10G SFP+ Managed Switch with LCD Touch Screen and Redundant Power (400W)