

4-Port 10/100TX + 1-Port UTP/BNC Long Reach Ethernet Extender



High Performance Long Reach Ethernet Solution

To fulfill the needs of long distance Ethernet over UTP, phone wire or coaxial cable applications, PLANET Technology offers a new-generation Ethernet over UTP/Coaxial Extender, LRE-104. It features 4 10/100 BASE-TX RJ45 port and 1 UTP RJ45/BNC combo connector with a metal housing, making the placement of the unit convenient. The LRE-104 provides a total duplex data rate of 100Mbps which can extend a maximum distance of up to 1.2km over phone wire and up to 2km over coaxial cable. It is ideal for extending the distance and signal conversion by transmitting the Ethernet data from the existing UTP cable, Phone wire or coaxial cable to another 100-meter UTP cable for any type of IP network device such as HD IP camera, wireless access point, NVR and digital signage.



IP Ethernet over Long Distance Existing UTP or Coaxial Cables

PLANET LRE-104 is also a Long Reach Ethernet (LRE) solution which provides a quick replacement and smooth migration solution from existing analog system to full digital system. A normal UTP cable can only be extended up to 100 meters, but with the LRE-104, the distance for Ethernet networking can be not only extended up to 700 meters (Cat.5E UTP) and 1200 meters (Phone wire) but also 2000 meters (BNC cable), which are ideal for the following network applications:

- Long-distance IP network devices
- IP digital signage
- Cable TV to IPTV
- Distance video education
- Electronic billboards
- Other applications

Physical Port

- 4 x 10/100Mbps RJ45 ports, auto-negotiation and half/full duplex mode
- 1 x RJ45 port for Long reach function
- 1 x BNC female connector for Long reach function

Long Reach Ethernet

- Supports Phone wire (RJ11) and Cat.5E UTP cable or above
- Uses the existing RG59/RG6 coaxial cable
- Long distance Ethernet data transmission up to 1.2km over phone wire
- Long distance Ethernet data transmission up to 2km over coaxial cable
- Master/Slave mode selectable via DIP switch
- Maximum 1522 bytes packet size, IEEE 802.1Q VLAN tag transparent

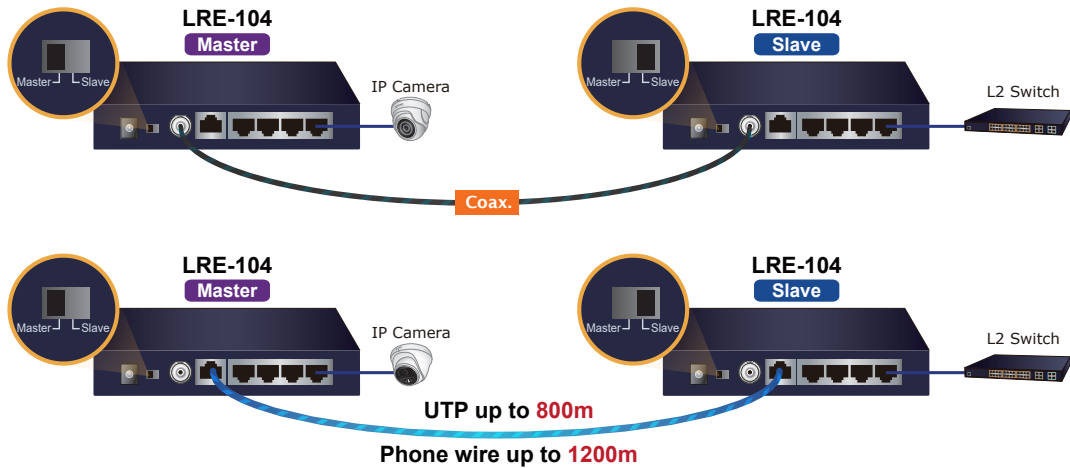
Industrial Case and Installation

- Supports extensive LED indicators for network diagnostics
- Advantage of minimum installation time (Simply by Plug-and-Play)
- Metal housing for better protection
- Compact in size and easy to install
- Supports 6KV DC Ethernet ESD protection
- 0 to 50 degrees C operating temperature

If you have Cat.5E UTP cable or Phone wire in your existing environment, you can install a pair of the LRE-104 very simply without the need to build additional network wires, thus saving costs for network construction.

*Only can choose one type of cable to do long reach extension function

BNC and RJ45 Connection Diagrams



Easy and Flexible Installation

The LRE-104 offers two operation modes, the client-side “Slave” and central-side “Master”, making any network applications easy and flexible. The “Slave” or “Master” mode can be adjusted by using the built-in DIP switch. For point-to-point connection, one LRE-104 in “Slave” mode and the other one in “Master” mode must be set up as a pair of converters to perform the connection. This enables the administrator to efficiently manage the network over UTP cable, making long-distance transmission better.

Daisy-chaining Multiple Nodes

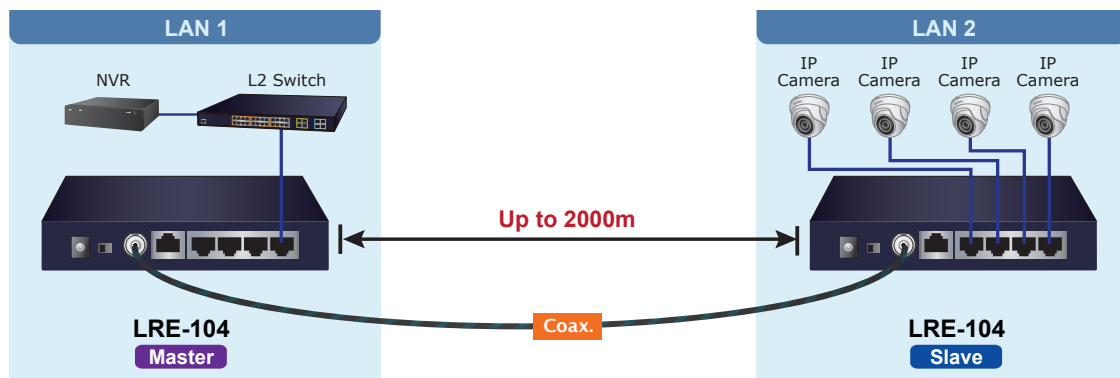
PLANET LRE-104 will give users the flexibility to expand a small area network with BNC T-connector for sharing four nodes per port when needed.

Applications

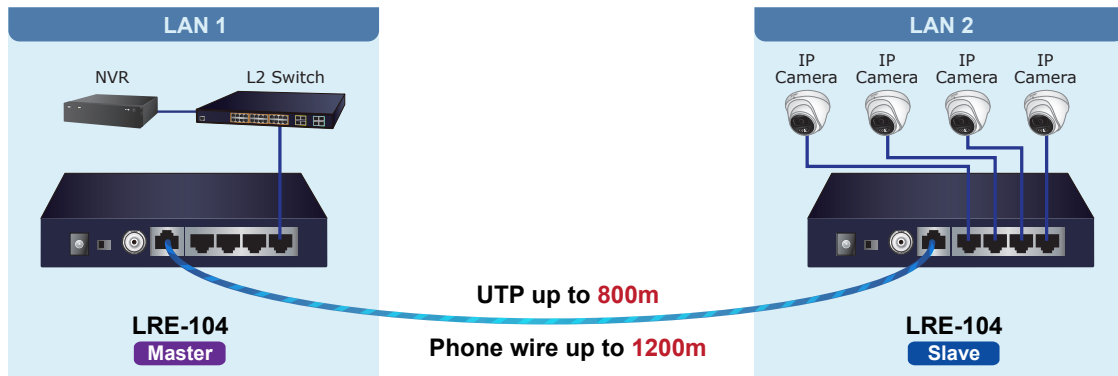
Community/Campus Surveillance and Security over IP

To take advantage of digital surveillance system and keep the benefits of UTP cable, the LRE-104 helps the community, campus and enterprises to upgrade analog camera system to IP camera surveillance without using additional new wires. The LRE-104 is a switching architecture with four RJ45 ports, one Long Reach Ethernet interface and BCN connector. Just plug in the UTP cable of IP camera to one of the 4 Ethernet ports and the existing UTP cable or Phone wire to the UTP connector or BNC cable to the BNC connector to easily deploy and extend the distance with signal conversion by transmitting the Ethernet data from the standard cable.

IP Surveillance Application



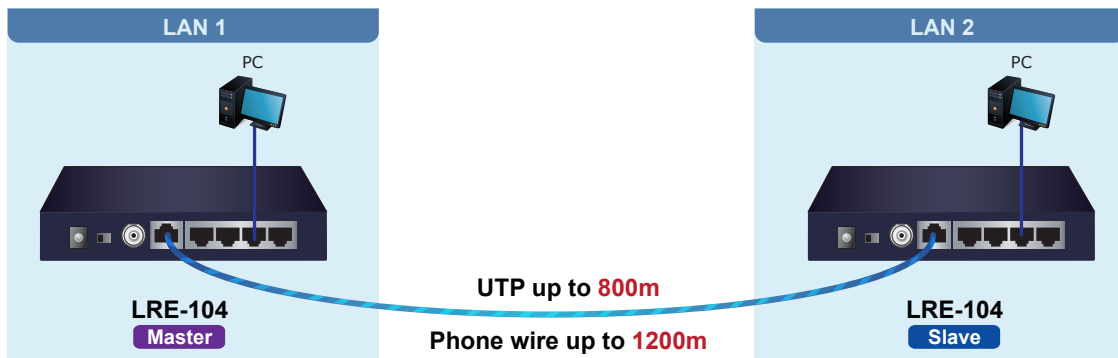
IP Surveillance Application



Point-to-Point Application -- LAN to LAN Connection

One set of the LRE-104 Extender could be used to link two local area networks that are located in different places. Through the Cat.5e UTP cable, Phone wire or BNC cable, it could set up a 100Mbps backbone, but one must be **Master** and the other one is **Slave**.

LAN to LAN Connection



Specifications

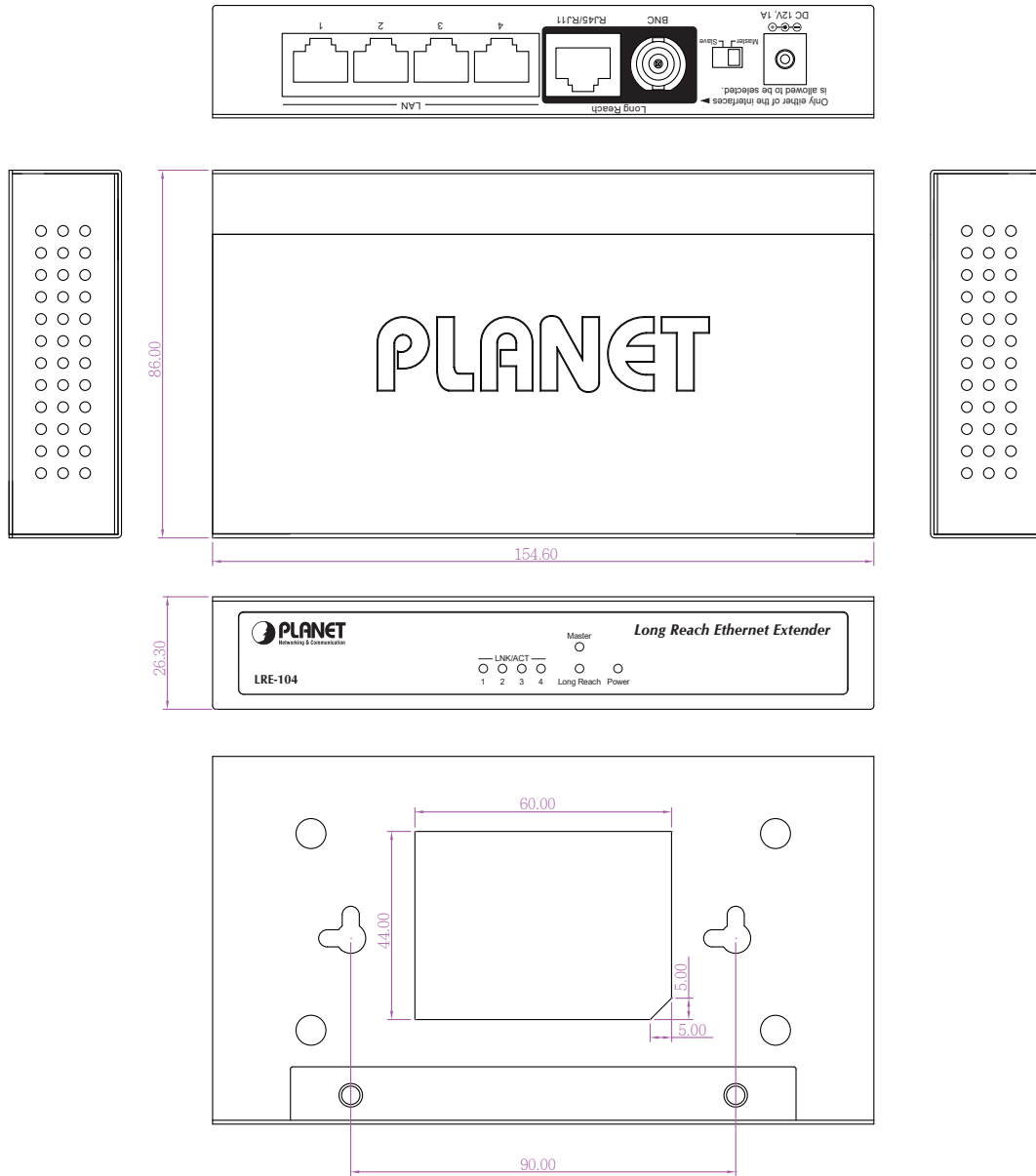
Product	LRE-104		
Hardware Specifications			
LAN Ethernet Interface	Connector	4 x 10/100BASE-TX RJ45 copper port, auto-negotiation / auto-MDI/MDI-X	
	Cabling	Cat5e UTP or above	
	Maximum distance	100 meters	
	Maximum frame size	1522 bytes	
Long Reach Interface	Connector	1 x RJ45 copper port	1 x BNC female port
	Cabling	■ Cat5 UTP cable ■ phone wire	■ Coaxial cable: 75 ohm ■ RG-6/U cable, less than 12Ω/1000 ft ■ RG-59/U cable, less than 30Ω/1000 ft
		Maximum Distance	Max. Data transmission of 800m (Cat5 UTP) Max. Data transmission of 1200m (phone wire)
	Long Reach Ethernet Standard	IEEE 1901	
	Modulation Type	Wavelet-OFDM	
	Security	128-bit AES encryption	
	Frequency Band	2~28MHz	
DIP Switch	Select Master or Slave mode		
Dimensions (W x D x H)	97 x 70.3 x 26 mm		
Weight	347g		
Housing	Metal		
Power Requirement	12V DC, 1A external power		

LED Indicators	Power: Green LAN: Green, 10/100Mbps LNK/ACT Long Reach: Green, LNK Master: Green			
Compatible Long Reach Extender	LRE-101 LRE-101C			
Standards Conformance				
Standards Compliance	IEEE 802.3/ 802.3u Ethernet standard compliant IEEE 802.3x Full-duplex flow control IEEE 802.1q Tag VLAN Transparent, Multicast pass-through			
Regulatory Compliance	FCC Part 15 Class A, CE			
Environment				
Temperature	Operating: 0~50 degrees C Storage: -10~70 degrees C			
Humidity	Operating: 5~95% (non-condensing) Storage: 5~95% (non-condensing)			
Performance				
Upstream / Downstream (Unit: Mbps)				
		UTP Cable (RJ45)	Phone Wire (RJ11)	Coaxial Cable (BNC)
Distance (meter)	200m	78/78	84/79	85/80
	400m	78/70	82/76	83/80
	600m	73/63	62/45	81/80
	800m	8/3	35/23	83/82
	1000m		28/22	79/77
	1200m		8/3	68/65
	1400m			56/47
	1600m			38/30
	1800m			23/23
	2000m			4/6

**The actual data rate will vary in the quality of the coaxial cable, UTP cables or phone wire and environmental factors.

**UTP and BNC cannot be used for long reach port at the same time.

Dimensions



Unit: mm

Ordering Information

LRE-104	4-Port 10/100TX + 1-Port UTP/BNC Long Reach Ethernet Extender
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Related Products

LRE-101	1-Port 10/100TX over UTP Long Reach Ethernet Extender
LRE-101C	1-Port 10/100TX over Coaxial Long Reach Ethernet Extender

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