

Product Specifications

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

LRE-104

Version 1.0

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Change History:

Revision:	Date:	Author:	Change List
1.0	2023/3/29	Angeline	Initial release

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1. PRODUCT DESCRIPTION



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/BCN 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

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 one type of cable can be chosen for the long-reach extension.

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.

2. PRODUCT FEATURES

▶ **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

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Long Reach IC	CBM-803A	x 1
LAN Controller	IC+ IP178G	x 1

3.2 FUNCTIONAL 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	<div><div></div> Cat5 UTP cable</div> <div><div></div> phone wire</div>	<div><div></div> Coaxial cable: 75 ohm</div> <div><div></div> RG-6/U cable, less than12Ω/1000 ft</div> <div><div></div> RG-59/U cable, less than 30Ω/1000 ft</div>
	Maximum Distance	Max. Data transmission of 800m (Cat5 UTP)	Max. Data transmission of 2000m (6,561ft.)
		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)		154.6 x 86.0 x 26.3 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			

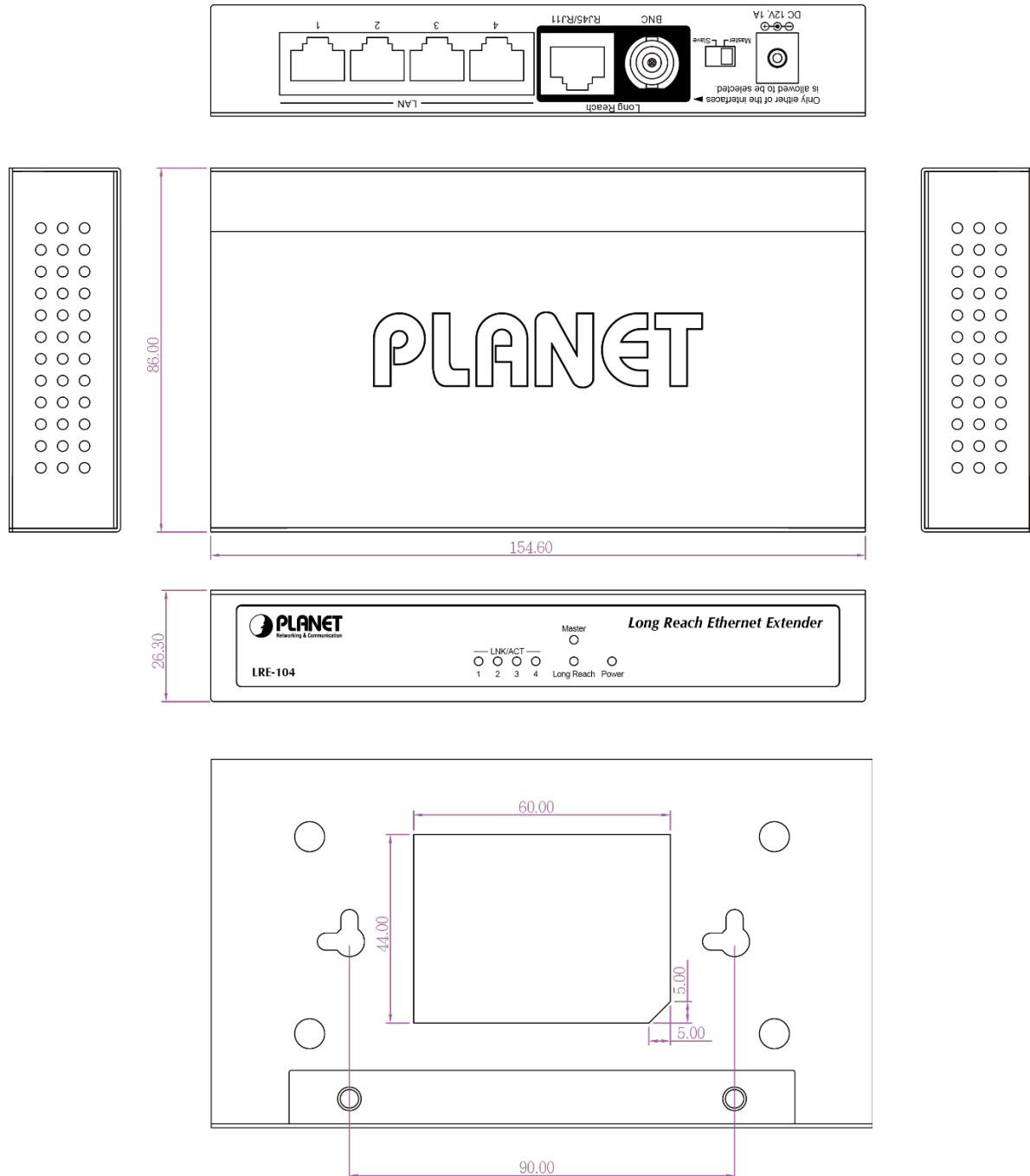
Standards Compliance		IEEE 802.3/ 802.3u Ethernet standard compliant		
		IEEE 802.3x Full-duplex flow control		
		IEEE 802.1q Tag VLAN Transparent, Multicast pass-through		
Regulatory Compliance		FCC Part 15 Class A, CE		
Environment				
Temperature		Operating: 0~50 degrees C		
		Storage: -10~70 degrees 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 UTP cables or phone wire and environmental factors.

3.3 PHYSICAL SPECIFICATIONS

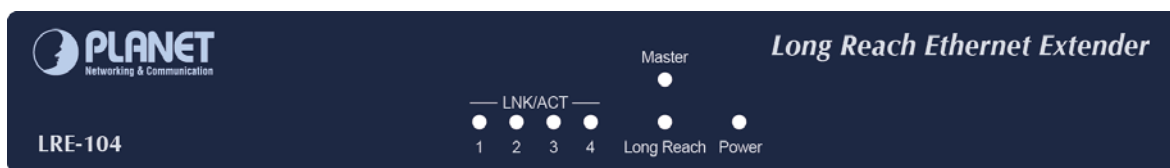
■ Dimensions

154.6 x 86.0 x 26.3 mm (W x D x H)



Unit: mm

■ LRE-104 Front Panel



- ▶ LEDs for power, Ethernet, Long Reach and DIP Switch

■ LED definition

▶ System

LED	Color	Function	
PWR	Green	Lit:	Power ON
		Off:	Power OFF

▶ Long Reach BNC /Ethernet interface

LED	Color	Function	
LNK	Green	Lit:	Indicates that the Long Reach BNC/Ethernet link is established.
		Off:	Indicates that the port is linkdown.

▶ 10/100BASE-TX Port

LED	Color	Function	
LNK/ACT	Green	Lit:	Indicates the link through TP port is successfully established.
		Blink:	Indicates the TP port is actively sending or receiving data.
		Off:	Indicates that the TP port is linkdown.

▶ DIP Switch

LED	Color	Function	
Master	Green	Lit:	Indicates that the LRE-104 is functioned as a Master
		Off:	Indicates that the LRE-104 is functioned as a Slave

■ LRE-104 Rear Panel



- ▶ 4 x 10/100Mbps RJ45 ports
- ▶ 1 x RJ45 port for Long reach function
- ▶ 1 x BNC female connector for Long reach function
- ▶ DIP switch: Master/Slave mode selectable
- ▶ DC jack (DC input) for power adapter

■ DIP Switch

The Ethernet Extender provides a selectable 2-position DIP switch. When switching to “Master”, it supports PtP and PtMP, meaning it can be one master and one slave with RJ45/RJ11 connector, or one master and more than one slave with BNC T connector.

DIP	Function
Master	The LRE-104 is functioned as a Master.
Slave	The LRE-104 is functioned as a Slave.

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating

Temperature: 0~50°C

Relative Humidity: 10~90 %(non-condensing)

Storage

Temperature: -10~70°C

Relative Humidity: 10~90 %(non-condensing)

3.5 ELECTRICAL SPECIFICATION

Power Requirement: 12V DC, 1A

Input Voltage: DC 12V Adapter	No Loading	Full Loading (max.)
Power Consumption	1.68 watts / 5.4BTU	2.16 watts / 7.3BTU

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 Reliability

MTBF > 50,000Hrs @25 degrees C

3.8 BASIC PACKAGING

- LRE-104 x 1
- AC-DC Power Adapter (Output: 12V DC, 1A) x 1
- QR-Code Sheet x 1

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	202 x 140 x 94 mm
Gross Weight (with power supply):	626 g
Carton Dimensions (W x D x H):	600 x 230 x 325 mm
Total Weight (with power adapter)	8.11 kg
Quantity:	12pcs in one carton