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If you find information in this manual that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

PLANET Long Reach PoE over Coaxial / UTP Extender User's Manual

MODELS: LRP-101CE / LRP-101UE

REVISION: 1.0 (January 2015)

Part No: EM-LRP-101x_v1.0 (2350-AN0010-000)

Long Reach PoE over Coaxial Extender

LRP-101CE

User's Manual

1. Package Contents

Thank you for purchasing PLANET Long Reach PoE over Coaxial Extender, the LRP-101CE. **"Long Reach PoE over Coaxial Extender"** mentioned in this manual refers to the LRP-101CE.

Open the box of the Long Reach PoE over Coaxial Extender and carefully unpack it. The box should contain the following items:

LRP-101CE	User's Manual

If there is any item missing or damaged, please contact the seller immediately.

Note

2. Application Diagram

■ Point to Point

■ Single Chain, Multi-point
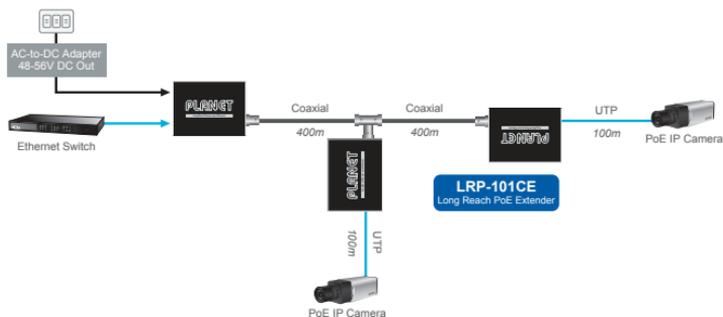
■ Point to Multi-point
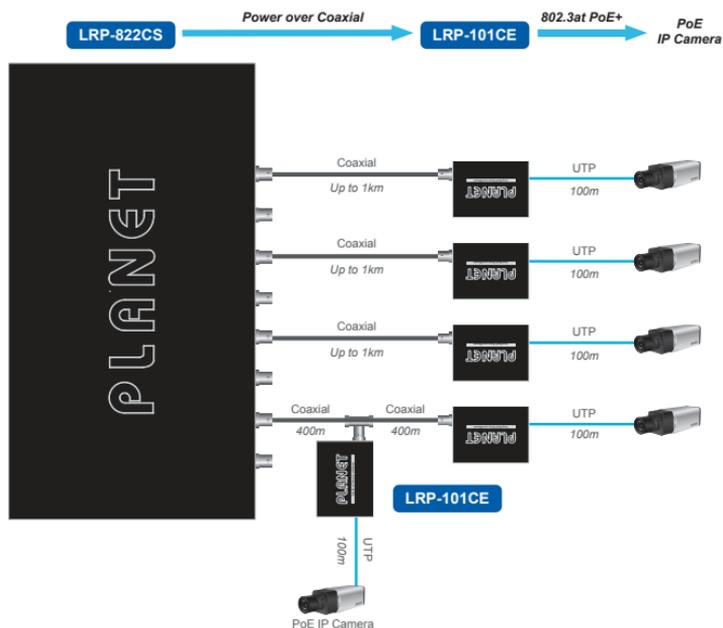
> **Note**
>
> It is recommended to use PLANET Long Reach Ethernet coaxial extenders on the LRP Managed Switch-LRP-822CS. If you insert a coaxial extender that is not supported, the LRP Managed Switch may damage it.

3. Physical Introduction

LRP-101CE Physical Dimensions

■ Dimensions (W x D x H): 94 x 70.3 x 26 mm

Rear Panel

68.5

PoE In-use   LNK/ACT

PoE OUT

25.3

10/100BASE-TX

Top Panel

70.3

PLANET

Long Reach Power over Ethernet

94

Bottom

Front Panel

26.2

LRP-101CE   LRP IN   *Extender*

LNK

PWR

Long Reach PoE Extender - Coax
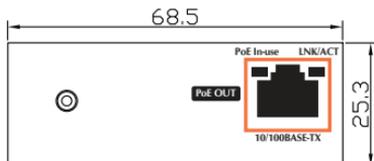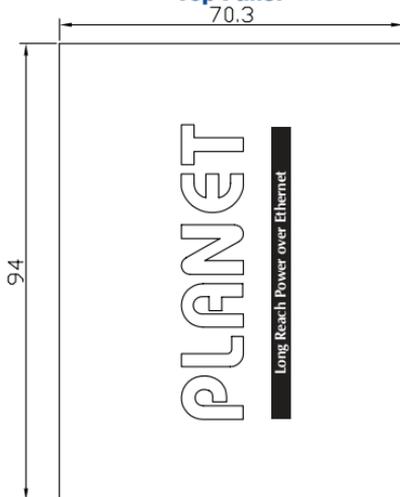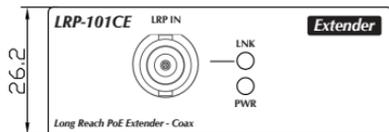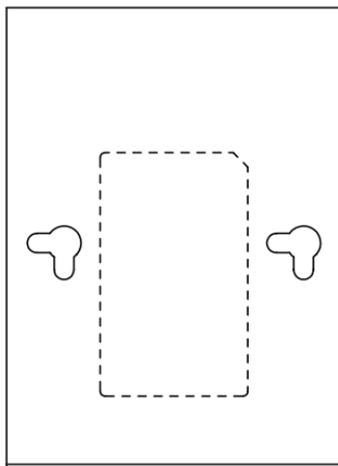
LED Descriptions

➢ System & LRP Coax Interface

LED	Color	Function
PWR	Green	**Light:** indicates the power is on.
LNK	Green	**Light:** indicates that the coaxial link is established.
		Off: indicates that the coaxial link is down.

➢ RJ45 10/100BASE-TX Interface

LED	Color	Function
PoE In-Use	Amber	**Light:** indicates the RJ45 port is providing PoE power
LNK/ACT	Green	**Blink:** indicates the extender is actively sending or receiving data over that port.

4. Hardware Specifications

Model	LRP-101CE
Functions	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 PSE (Power Source Equipment)
	PoE Output	48~56V 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 sizes	1522bytes
Long Reach PoE Interface	Connectivity	1 x BNC female Long Reach PoE over coaxial PD (Powered Device) BNC center pole : DC+ BNC shield : DC -
	Power Iutput	44~56V DC
	Cabling	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. 200m with PoE+ output (1,640 ft.) Max. 600m with PoE output (2,624 ft.) Max. 1200m without PoE output (3,937ft.)
	Long Reach Ethernet Standard	IEEE 1901

Long Reach PoE Interface	Modulation Type	Wavelet-OFDM			
	Security	128-bit AES encryption			
	Frequency Band	2 ~ 28 MHz			
	Performance	Distance	Data Rate* (Upload / Download)	LRP-101CE 802.3af/at PoE Output Capability**	
				LRP-101CH W/56V DC IN	LRP-101CH W/30W PoE+ IN
		200m	93 / 93 Mbps	29W	16W
		400m	93 / 93 Mbps	22W	14W
		600m	87 / 91 Mbps	13W	10W
		800m	75 / 83 Mbps	10W	8W
		1000m	55 / 73 Mbps	8W	7W
	LRP Compatibility	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		■ PWR ■ LRP LNK ■ PoE In-use ■ LNK/ACT			
ESD Protection		2KV DC			
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		375g			

Power Requirements	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)

* 1. Upload: LRP-101CE to LRP-101CH. Download: LRP-101CH to LRP-101CE.

   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.

Long Reach PoE over UTP Extender

LRP-101UE

User's Manual

5. Package Contents

Thank you for purchasing PLANET Long Reach PoE over UTP Extender, the LRP-101UE. **"Long Reach PoE over UTP Extender"** mentioned in this manual refers to the LRP-101UE.

Open the box of the Long Reach PoE over UTP Extender and carefully unpack it. The box should contain the following items:

| **LRP-101UE**	**User's Manual**

6. Application Diagram

■ Point to Point
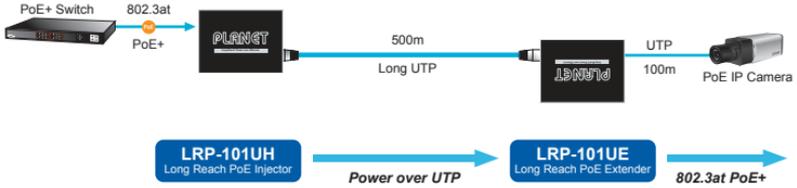
7. Physical Introduction

LRP-101UE Physical Dimensions

■ Dimensions (W x D x H): 94 x 70.3 x 26 mm

Rear Panel
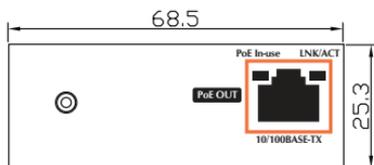
Top Panel

Bottom
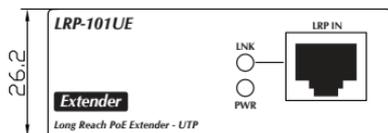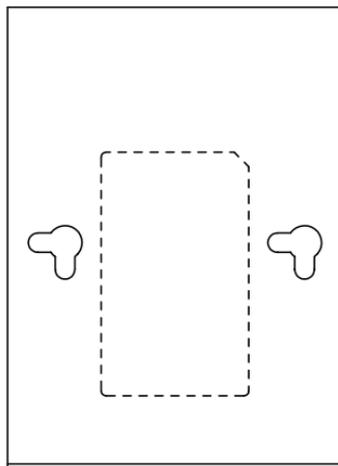
Front Panel

LED Descriptions
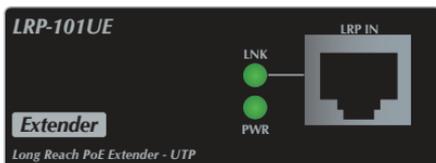
> System & LRP UTP Interface

LED	Color	Function
PWR	Green	**Light:** indicates the power is on.
LNK	Green	**Light:** indicates that the UTP link is established.
		Off: indicates that the UTP link is down.
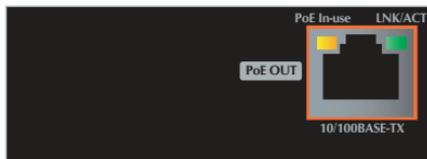
> RJ45 10/100BASE-TX Interface

LED	Color	Function
PoE In-Use	Amber	**Light:** indicates the RJ45 Port is providing PoE power
LNK/ACT	Green	**Blink:** indicates the extender is actively sending or receiving data over that port.

8. Hardware Specifications

Model	LRP-101UE
Hardware Specifications	

Ethernet Interface	Copper	10/100BASE-TX RJ45 Auto-negotiation / Auto-MDI/MDI-X
	PoE Standard	IEEE 802.3at/af PoE PSE (Power Source Equipment)
	PoE Output	48~56V 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	1522bytes
Long Reach PoE Interface	Connectivity	1 x RJ45 connector Long Reach PoE over UTP PD (Powered Device)
	Pin Assignment	PIN 1,3,5,7: VCC+
		PIN 2,4,6,8: VCC-
	Power Iutput	44~56V DC
	Cabling	2-wire UTP / 4-wire UTP / 8-wire UTP
	Maximum Distance	Max. 200m with PoE+ output (1,640 ft.) Max. 600m with PoE output (2,624 ft.) Max. 1200m without PoE output (3,937ft.)
	Long Reach Ethernet Standard	IEEE 1901
	Modulation Type	Wavelet-OFDM
	Security	128-bit AES encryption

Long Reach PoE Interface	Frequency Band	2 ~ 28 MHz		
	Performance	Distance	Data Rate* (Upload / Download)	LRP-101UE 802.3af/at PoE Output Capability**
				LRP-101UH W/56V DC IN
		100m	94 / 94 Mbps	30W
		200m	82 / 82 Mbps	30W
		300m	63 / 67 Mbps	30W
		400m	44 / 48 Mbps	22W
		500m	30 / 30 Mbps	18W
	LRP Compatibility	With power over UTP input ■ LRP-101UH – 1-Port LRP Injector		
LED Indicators		■ PWR ■ LRP LNK ■ PoE In-use ■ LNK/ACT		
ESD Protection		2KV DC		
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		190g		
Power Requirements		Power over RJ45 Input: 44~56V DC		

Note: The "LRP-101UE 802.3af/at PoE Output Capability**" header spans two sub-columns: "LRP-101UH W/56V DC IN" and "LRP-101UH W/30W PoE+ IN". The PoE Output values by distance are:

Distance	LRP-101UH W/56V DC IN	LRP-101UH W/30W PoE+ IN
100m	30W	19W
200m	30W	18W
300m	30W	17W
400m	22W	14W
500m	18W	12W

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)

* 1. Upload: LRP-101UE to LRP-101UH. Download: LRP-101UH to LRP-101UE.

   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.

EC Declaration of Conformity

For the following equipment:

*Type of Product: 1-Port 10/100TX PoE PD + 1-Port Coax Long Reach PoE Injector
1-Port 10/100TX PoE PSE + 1-Port Coax Long Reach PoE Extender
1-Port 10/100TX PoE PD + 1-Port UTP Long Reach PoE Injector
1-Port 10/100TX PoE PSE + 1-Port UTP Long Reach PoE Extender

*Model Number: LRP-101CH, LRP-101CE
LRP-101UH, LRP-101UE

* Produced by:
Manufacturer's Name : **Planet Technology Corp.**
Manufacturer's Address: 10F., No.96, Minquan Rd., Xindian Dist.
New Taipei City 231, Taiwan (R.O.C.).

We hereby confirmed that the products mentioned comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (2004/108/EC).
For the evaluation regarding the EMC, the following standards were applied:

EN55022		(2010)
EN 61000-3-2		(2006 + A1:2009 + A2:2009)
EN 61000-3-3		(2008)
EN55024		(2010)
	IEC 61000-4-2	(2008)
	IEC 61000-4-3	(2006 + A1: 2007 + A2: 2010)
	IEC 61000-4-4	(2012)
	IEC 61000-4-5	(2005)
	IEC 61000-4-6	(2008)
	IEC 61000-4-8	(2009)
	IEC 61000-4-11	(2004)

Responsible for marking this declaration if the:

☒ **Manufacturer** ☐ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

Company Name: **Planet Technology Corp.**

Company Address: **10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)**

Person responsible for making this declaration

Name, Surname **Kent Kang**

Position / Title : **Product Manager**

Taiwan **31st March, 2015**
Place *Date* *Legal Signature*

PLANET TECHNOLOGY CORPORATION