PLANET
Networking & Communication

Product Specifications

1-Port 802.3bt PoE++ to 2-Port 802.3af/at Gigabit PoE Extender

IPOE-E302

Version 1.0

Change History:

Revision	Date	Author	Change List
Version 1.0	2019/12/05	Angeline	Initial release

Author	Angeline	Editor:	
Reviewed by:	Kent Kang	Approved by:	Kent Kang

1. PRODUCT DESCRIPTION

Outdoor 802.3bt PoE++ Solution for Breaking RJ45 100m Limitation

PLANET IPOE-E302 is an industrial IP67-rated 1-port 802.3bt PoE++ to 2-port 802.3bt/at Gigabit PoE Extender designed especially for point to multipoint PoE application. The IPOE-E302 can obtain a maximum of **95-watt** PoE power from **802.3bt PoE++** or **PoH** (Power over HDBASE-T) input port and supplies a maximum of 65-watt PoE power budget for 2 PoE output ports, extending both the **Gigabit Ethernet Data** and **802.3at Power over Ethernet** over the UTP cable. The IPOE-E302 provides a simple solution for adding PoE ports without running more cabling and achieves more flexible network applications without requiring an external power adapter.

Weather-proof RJ45 Ethernet Connector and Shielded Plug

The IPOE-E302 is ideal for installing an extended range of outdoor PoE devices such as outdoor PoE wireless access points, outdoor PoE IP cameras, outdoor PoE IP intercoms and much more. The IPOE-E302 is equipped with 3-port 10/100/1000BASE-T auto-negotiation RJ45 connectors and 3 waterproof cable glands for direct-attach applications. Assembled with waterproof cable gland, it can make the general RJ45 connector weather-proof and provides tight and strong connection, and ensures it comes with the industrial protection rating of IP67 capable of withstanding humidity, dirt, dust, shock, vibrations, heat and cold.
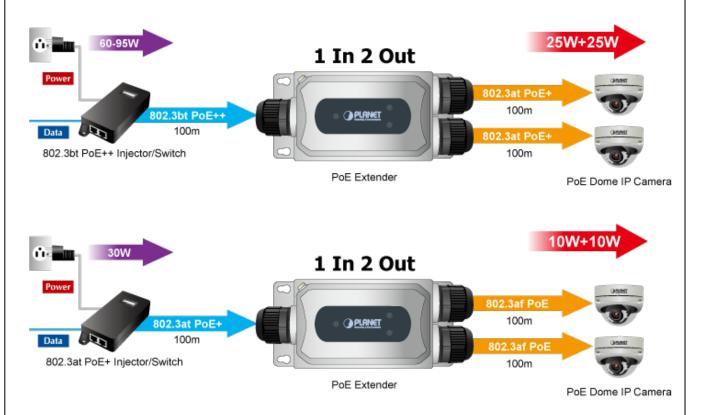
Environmentally-hardened Design

With industrial-level IP67-rated aluminum case, the IPOE-E302 provides a high level of immunity against electromagnetic interference, and is able to protect itself from dust and water ingress and to operate under the temperature range from -40 to 75 degrees C. All these features ensure the highest level of reliability for mission-critical applications in any difficult environment.

Plug and Play, and Easy Cabling Installation

The IPOE-E302 is quite easy to be installed by simply Plug and Play. It is used between a power source equipment (PSE) and a powered device (PD).

The IPOE-E302 is designed in a compact box containing three RJ45 ports, of which one "**PoE+++ Inn**" port functions as **PD** input and the other two "**PoE++ Outut**" ports on the other side function as **PSE** output. The "PoE OUT" port is also the power injector that transmits DC voltage over the Cat5/5e/6 cable and transfers data and power simultaneously to a remote PD without affecting the data transmission performance. It offers a cost-effective and quick solution to double the standard range of PoE from 100 to 200 meters.

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2. PRODUCT FEATURES

➢ **Physical Port**

- **3-port 10/100/1000BASE-T** Gigabit RJ45 interface
  - 1-port **data + power input**
  - 2-port **data + power output**

➢ **Power over Ethernet**

- 1-port data + power input
  - Complies with IEEE 802.3bt PoE++ Type 4 standard PD
  - Compatible with PoH (Power over HDBASE-T) protocol
  - Backward compatible with IEEE 802.3at PoE+ end-span or mid-span PD
  - Supports PoE input power up to 95 watts
- 2-port data + power output
  - Complies with IEEE 802.3at Power over Ethernet end-span PSE
  - Up to 2 IEEE 802.3af/802.3at PoE devices powered
  - Supports total PoE budget up to 65 watts for 2 PoE output ports
  - Auto detects powered device (PD)
- Extends the range of PoE to an additional 100 meters (328ft.)
- Forwards both Ethernet **data** and **PoE** power to remote device

➢ **Layer 2 Features**

- Hardware-based 10/100Mbps, half / full duplex and 1000Mbps full duplex mode, flow control, auto-negotiation and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- Integrates address look-up engine, supporting 2K absolute MAC addresses
- 9K jumbo frame support in 1000Mbps duplex mode
- Automatic address learning and address aging

➢ **Industrial Case and Installation**

- IP67-rated aluminum case
- Wall-mount design
- Supports 6KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- No external power cable required for installation
- Plug and Play installation

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	MediaTek MD7530D	x 1
PD Chipset:	Ti TPS2373-4	x 1
PSE Chipset:	Ti TPS23861	x 1

3.2 FUNCTION SPECIFICATIONS

Model	IPOE-E302
Hardware Specifications	
Network Connector	**PoE in Port** 1 x 10/100/1000BASE-T Ethernet with 802.3bt PoE++ **"Data + DC"** in, auto MDI/MDI-X, auto-negotiation RJ45 connector
	PoE out Port 2 x 10/100/1000BASE-T Ethernet with IEEE 802.3af/at PoE **"Data + DC"** out, auto MDI/MDI-X, auto-negotiation RJ45 connector
Switch Architecture	Store-and-Forward switch architecture
MAC Address Table	2K MAC address table with auto learning function
Data Buffer	1Mbit
Switch Fabric	6Gbps
Switch Throughput	4.46Mpps @ 64Bytes
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	9Kbytes
ESD Protection	Air 8KV DC Contact 6KV DC
Surge Protection	6KV
Enclosure	IP67-rated and IK10 aluminum metal case
Installation	Wall-mount ear
LED Display	Link/ACT LED x 3
Dimensions (W x D x H)	150 x 43.8 x 72.94 mm (W x D x H) 169.85 x 43.8 x 72.94 mm (W x D x H), with cable gland
Weight	339g 372g (with three waterproof cable glands)
Power Consumption	97 watts/331.6BTU (Full loading with PoE function)
Power over Ethernet	
PoE Standard	**PoE in Port** – IEEE 802.3bt PoE++ Type 4 standard PD

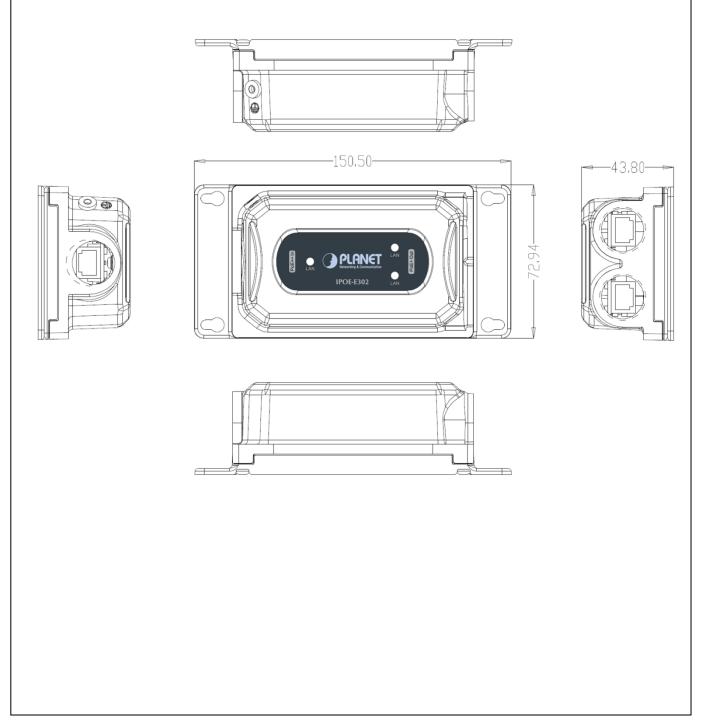|		
	− PoH (Power over HDBASE-T) − IEEE 802.3at PoE+ end-span/mid-span PD	
	Per PoE out Port	
	IEEE 802.3at PoE+ mid-span PSE	
PoE Power	**PoE in Port**	
	50~57V DC, max. 95 watts	
	44~50V DC, max. 30 watts	
	Per PoE out Port	
	48~56V DC, max. 30 watts	
Power Pin Assignment	**PoE in Port**	
	1/2(-), 3/6(+), 4/5(+), 7/8(-) or 1/2(+), 3/6(-), 4/5(+), 7/8(-)	
	Per PoE out Port	
	4/5(+), 7/8(-)	
PoE Power Budget	60 watts (max.) @ 802.3bt PoE++ input	
	65 watts (max.) @ PoH input	
	30 watts (max.) @ IEEE 802.3at PoE+ input	
	No support @ IEEE 802.3af PoE input	
Standards Conformance		
Regulatory Compliance	FCC Part 15 Class A CE	
Stability Testing	IEC 60068-2-32 (Free fall) IEC 60068-2-27 (Shock) IEC 60068-2-6 (Vibration)	
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3x Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt Power over Ethernet Plus Plus	
Environment		
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

150 x 43.8 x 72.94 mm (W x D x H)
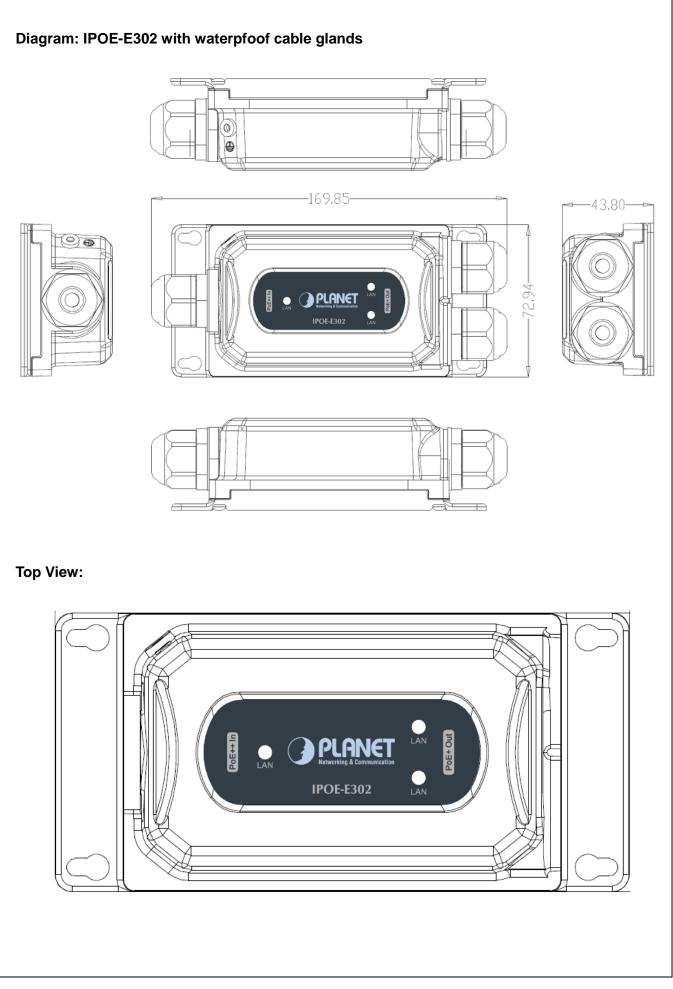
169.85 x 43.8 x 72.94 mm (W x D x H), with cable gland

Weight:

339g

372g(with three waterproof cable glands)

Diagram:

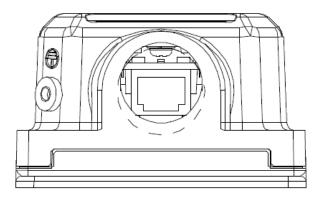**Diagram: IPOE-E302 with waterpfoof cable glands**

Top View:

LED Definition:

➢ **PoE Input Port**

LED	Color	Function
LNK/ACT	Green	**Light** to indicate the port is linked up.
		Blink to indicate that the IPOE-E302 is actively sending or receiving data over that port.

➢ **Per PoE Output Port**

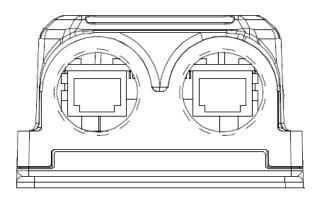| LED	Color	Function
LNK/ACT	Green	**Light** to indicate the port is linked up.
		Blink to indicate that the IPOE-E302 is actively sending or receiving data over that port.

PoE++ In Port:

1 x IEEE 802.3bt PoE++ PD RJ45 port

PoE+ Out Port:

2 x IEEE 802.3at PoE+ PSE RJ45 ports

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3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -40°C ~75 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -40°C ~85 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

	System on (No loading)	Ethernet full loading	Ethernet + Power full loading
802.3bt PoE++ Type 4 PSE (55VDC)	1.2 watts	1.8 watts	69.8 watts

3.6 REGULATORY COMPLIANCE

- ■ FCC Part 15 Class A
- ■ CE
- ■ **Stability Testing:**
  - • IEC60068-2-32 (Free Fall)
  - • IEC60068-2-27 (Shock)
  - • IEC60068-2-6 (Vibration)

3.7 RELIABILITY

MTBF > 100,000Hrs @ 25 degrees C

3.8 BASIC PACKAGING

☑ Industrial Power over Ethernet Extender   x 1

☑ User's Manual   x 1

☑ Waterproof Cable Gland   x 3

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	240 x 186 x 84 mm
Gross Weight:	0.59 kg
Carton Dimensions (W x D x H):	450 x 264 x 390 mm
Total Weight:	6.7 kg
Quantity:	10pcs per carton