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Product Specifications

1-Port 802.3bt PoE++ to 4-Port 802.3af/at Gigabit PoE Extender

POE-E304

Version 2.0

Change History:

Revision:	Date:	Author:	Change List
Version 2.0	2019/12/12	Simon Yeh	Initial Release

Author:	Simon Yeh	Editor:	Simon Yeh
Reviewed By:	Jonas Yang	Approved By:	Kent Kang

1. PRODUCT DESCRIPTION

PoE Solution for Breaking RJ45 100m Limitation

PLANET POE-E304 is a 1-port 95W 802.3bt PoE ++ to 4-port 802.3af/at Gigabit PoE Extender designed especially for point to multipoint PoE applications. The POE-E304 can obtain a maximum of 95-watt PoE power from IEEE 802.3bt PoE input port and supplies a maximum of 65-watt PoE power budget to four PoE output ports, extending the simultaneous transmission distance of both the Gigabit Ethernet data and IEEE 802.3af/802.3at Power over Ethernet over the standard 100m (328 ft.) Cat. 5/5e/6 UTP cable to up to 200 meters. Thus, the POE-E304 provides a simple solution for adding PoE ports without running more cabling and achieves more flexible network applications without requiring an external power adapter.
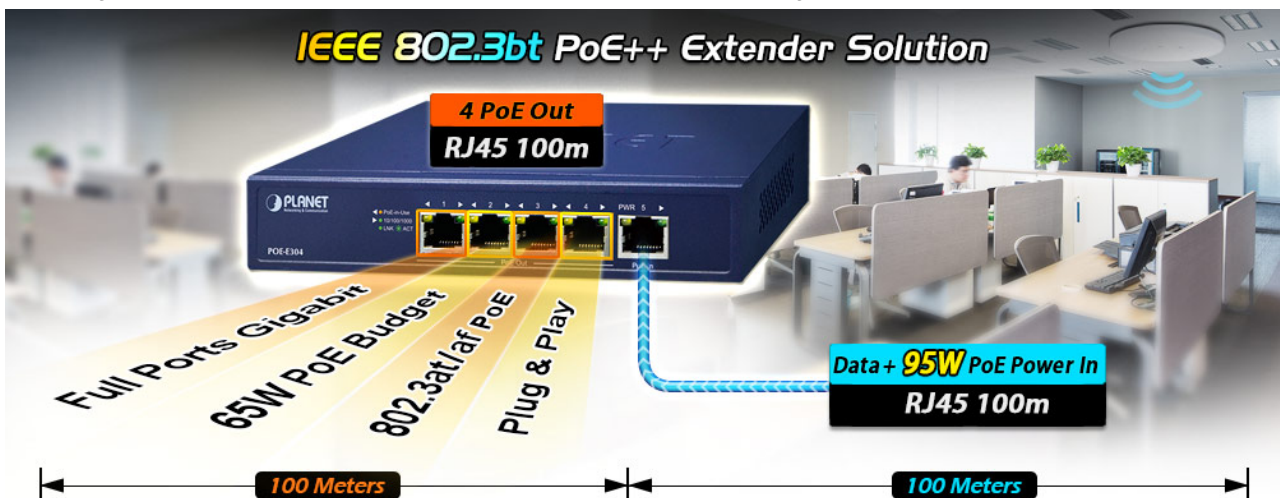

Plug and Play Installation

The POE-E304 is quite easy to be installed by simple Plug and Play. It is used between a power source equipment (PSE) and a powered device (PD). The POE-E304 injects power to the PD without affecting the data transmission performance. The POE-E304 offers a cost-effective and quick solution to doubling the standard range of PoE from 100 to 200 meters. The POE-304 is designed in a compact box containing five RJ45 ports, of which one **"PoE IN"** port functions as **PoE (Data and Power) input** and the other four **"PoE OUT"** ports function as **PoE 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 between the PSE and PD.

1 In 2 Out

1 In 4 Out

PoE PTZ IP Camera

PoE Dome IP Camera
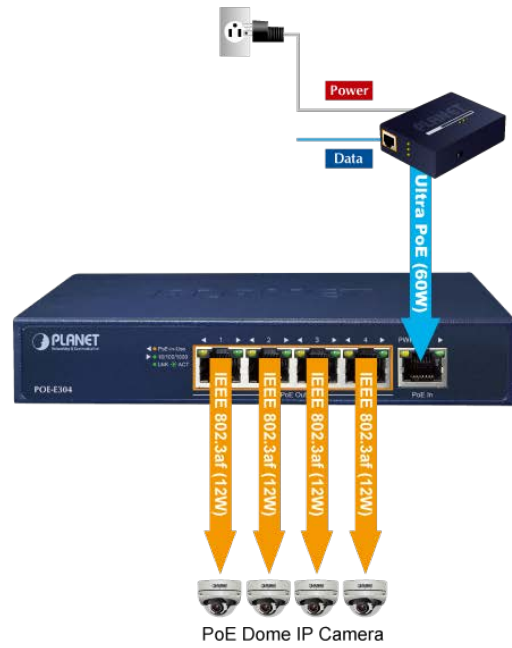
One Power Sourcing for Multiple Powered Devices

Is 100-meter cable long enough for a wide range of IP surveillance network deployments? The answer is certainly not. To achieve the benefits of IP surveillance and the long-distance IP camera distribution, thePOE-E304 is quite a useful Gigabit PoE extender if users have most of their network already set up, and hope to expand network communications and overcome cable distance limitations offering connections to devices in locations where traditional networking does not allow.

1000BASE-T UTP
1000BASE-T UTP with PoE

PLANET
Networking & Communication
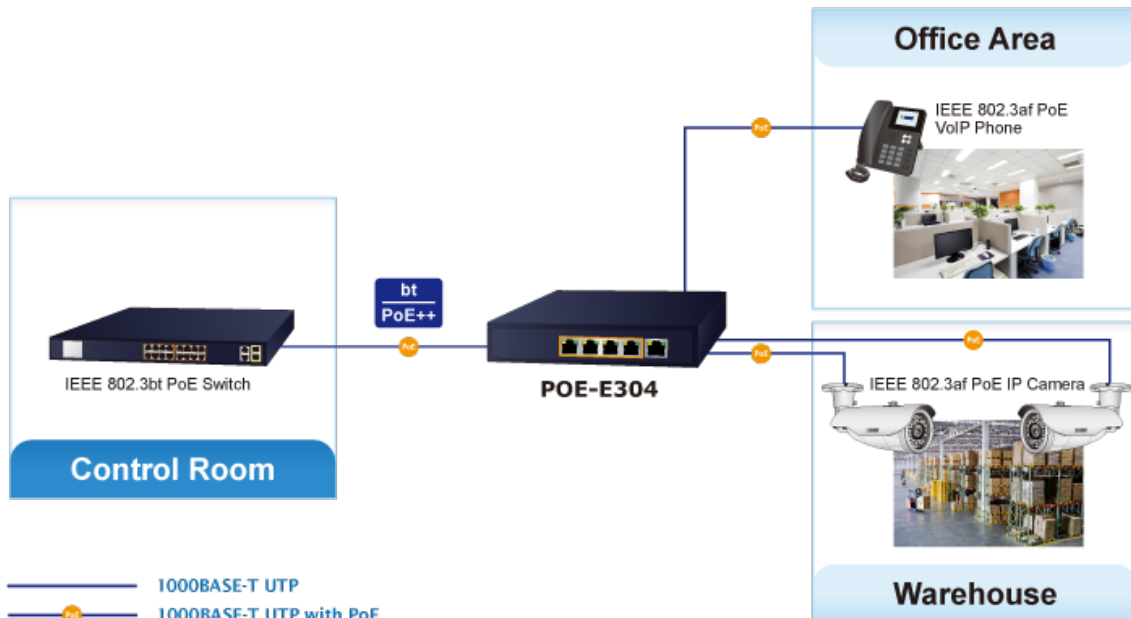
2. PRODUCT FEATURES

➤ **Physical Port**

- ■ **5 10/100/1000BASE-T** Gigabit RJ45 ports
  - – 1-port **data** + **power input**
  - – 4-port **data** + **power output**

➤ **Power over Ethernet**

- ■ 1-port data + power input
  - – Complies with IEEE 802.3bt PoE++ PD
  - – Supports PoE input power up to 95 watts
- ■ 4-port data + power output
  - – Complies with IEEE 802.3af/IEEE 802.3at PoE+/end-span PSE
  - – Up to 4 IEEE 802.3af/802.3at devices powered
  - – Supports PoE power up to 32 watts for each PoE port
  - – 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 10/100/1000Mbps auto-negotiation and auto MDI/MDI-X
- ■ Integrates address look-up engine, supporting 2K absolute MAC addresses
- ■ 9K jumbo packet support
- ■ Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- ■ IEEE 802.3x flow control for full duplex operation and backpressure for half duplex operation
- ■ Automatic address learning and address aging

➤ **Case and Installation**

- ■ No external power cable installation required
- ■ Made of metal, desktop size design
- ■ Wall-mountable, Plug-and-Play installation
- ■ 0 ~ 50 degrees C operating temperature

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3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC	MT7530	x 1
PoE PSE Controller	TPS23861	x 1
PoE PD Controller	TPS2373-4	x 1

3.2 FUNCTION SPECIFICATIONS

Model	POE-E304
Hardware Specifications	
Network Connector	**PoE In Port** 1 x 10/100/1000BASE-T Ethernet with IEEE 802.3bt PoE++ **"Data + DC"** in, auto MDI/MDI-X, auto-negotiation RJ45 connector **PoE Out Port** 4 x 10/100/1000BASE-T Ethernet with IEEE 802.3at/802.3af PoE **"Data + DC"** out, auto MDI/MDI-X, auto-negotiation RJ45 connector
Data Rate	10/100/1000Mbps
Switch Architecture	Store-and-Forward
MAC Address Table	2K
Data Buffer	1Mbits
Switch Fabric	10Gbps
Switch Throughput	7.44Mpps @ 64 bytes
Jumbo Frame	9K
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
LED Indicators	**PoE In Port** 10/100/1000 LNK/ACT (green) **PoE Out Port 1 to Port 4** 10/100/1000 LNK/ACT (green) PoE-in-Use (orange) PWR (orange)
Protection	ESD: Contact 4KV, Air 6KV Surge: 4KV
Enclosure	Metal
Installation	Desktop/Wall mountable
Dimensions (W x D x H)	168 x 93 x 32 mm
Weight	403g
Power Requirements	PoE In: IEEE 802.3bt or 4-pair 802.3at PoE+ compliant with voltage within 50V-56V DC External DC: 50~56V DC
Power Consumption	0.9 watts/3.1BTU (System on) 74 watts/252.4BTU (Full loading with PoE function)
Network Cable	10BASE-T: 4-pair UTP Cat5 up to 100m (328ft) 100BASE-TX: 4-pair UTP Cat5 up to 100m (328ft) 1000BASE-T: 4-pair UTP Cat5e, 6, up to 100m (328ft) EIA/TIA-568 100-ohm STP (100m, 328ft)
Power over Ethernet	
PoE Standard	**PoE In Port** IEEE 802.3bt Power over Ethernet Plus Plus end-span and mid-span PD class 4 PD

		Per PoE Out Port
		  IEEE 802.3at Power over Ethernet Plus end-span PSE
		  IEEE 802.3af Power over Ethernet end-span PSE

PoE Power		**PoE In Port** 50~56V DC, max. 95 watts input **Per PoE Out Port** 50~55V DC, max. 32 watts output

Power Pin Assignment		**PoE In Port**
		  1/2 (-), 3/6 (+); 4/5 (+), 7/8 (-)
		Per PoE Out Port
		  1/2 (-), 3/6 (+), end-span (Type A)

PoE Power Budget		65 watts (max.) @ IEEE 802.3bt PoE++ Type 4 PSE input 32 watts (max.) @ IEEE 802.3at PoE+ input
Standard Conformance		
Regulatory Compliance		FCC Part 15 Class A, CE
Standard Compliance		IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000BASE-T Gigabit Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt Power over Ethernet Plus Plus IEEE 802.3x Flow Control
Environment		
Operating		Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage		Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

3.3 PHYSICAL SPECIFICATIONS:

■ **Dimensions:**

168 x 93 x 32 mm (W x D x H)

■ **Weight:**

403g

■ **Front Panel**

■ **LED Indicators**

■ **802.3bt PoE In Port**

LED	Color	Function
10/100/1000 LNK/ACT	**Green**	**Lights** to indicate the link through that port is successfully established at 10/100/1000Mbps. **Blinks** to indicate that the port is actively sending or receiving data.

PWR	Orange	Lights to indicate the device is powered on.

■ **802.3at/af PoE Out Ports**

| LED	Color	Function
10/100/1000 LNK/ACT	Green	**Light**s to indicate the link through that port is successfully established at 10/100/1000Mbps. **Blinks** to indicate that the port is actively sending or receiving data.
PoE-in-Use	Orange	**Lights** to indicate the port is providing 55V DC in-line power output.

■ **802.3at/af PoE Out Ports**

■ Product Outlook

The three-view diagram of the Gigabit PoE Extender consists of one auto-sensing 10/100/1000BASE-T 802.3bt PoE In port, and four auto-sensing 10/100/1000BASE-T 802.3af/802.3at PoE Out ports. The LED Indicators are also located on the port of Gigabit PoE Extender front panel.
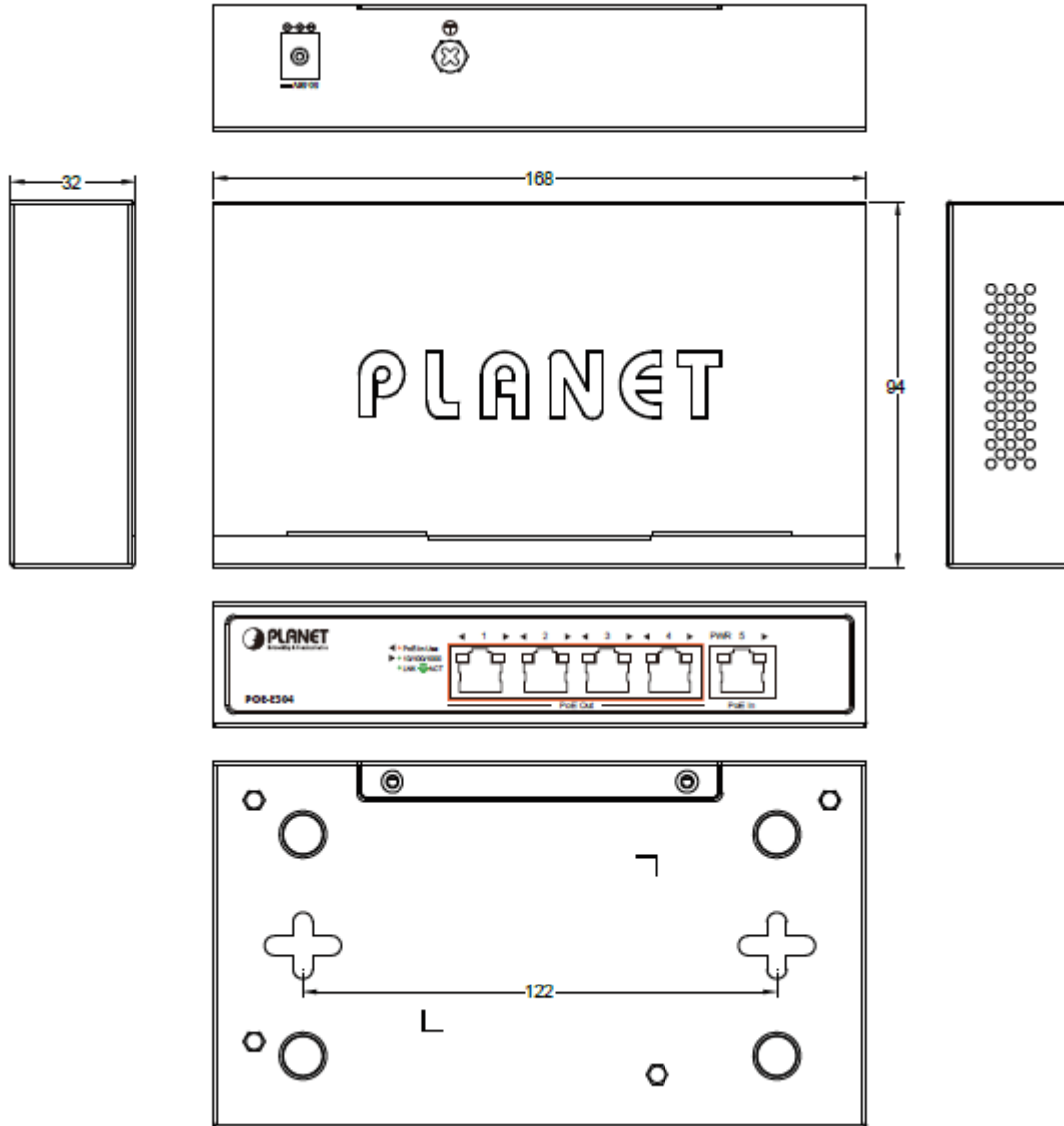
3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0°C ~ 50 degrees C

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

Storage:

Temperature: -10°C ~ 70 degrees C

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

3.5 Power Over Ethernet Budget

The following table lists how many PoE devices can be powered by the POE-E304:

Power Source	PoE Output Budget	Max. Number of PDs supported	
IEEE802.3bt PoE++ PSE	**65 watts max.**	Class 4 PD@25 watts	2 units
		Class 3 PD@15 watts	4 units
		Class 2 PD@7 watts	9 units
IEEE 802.3at PoE+ PSE	**25 watts max.**	Class 4 PD@25 watts	1 unit
		Class 3 PD@15 watts	1 unit
		Class 2 PD@7 watts	3 units
External Power Adapter -56V DC, 74W	**65 watts max.**	Class 4 PD@25 watts	2 units
		Class 3 PD@15 watts	4 units
		Class 2 PD@7 watts	9 units

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- ■ POE-E304   x 1
- ■ User's Manual   x 1
- ■ Rubber Feet   x 4

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	190 x 116 x 58 mm
Box Weight:	470g
Carton Dimensions (W x D x H):	395 x 305 x 252 mm
Carton Weight:	10kg
Quantity:	20pcs in one carton