

1. Package Contents

Thank you for purchasing PLANET 1-port IEEE 802.3at PoE+ to 2-port IEEE 802.3af/at Gigabit PoE Extender, POE-E202. "Gigabit PoE Extender" mentioned in this manual refers to the POE-E202.

Open the box of the Gigabit PoE Extender and carefully unpack it. The box should contain the following items:

Gigabit PoE Extender x 1	User's Manual x 1
	

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

2. Product Features

> Physical Port

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

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> Power over Ethernet

- 1-port data + power input
 - Complies with IEEE 802.3at Power over Ethernet Plus end-span/mid-span PD
 - Supports PoE input power up to 36 watts
- 2-port data + power output
 - Complies with IEEE 802.3af/IEEE 802.3at Power over Ethernet/end-span PSE
 - Up to 2 IEEE 802.3af/802.3at devices powered
 - Supports PoE power up to 25 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
- 10K jumbo packet support
- IEEE 802.1Q VLAN transparency
- 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
- Supports CSMA/CD protocol

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> 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

 **Note**

PSE (Power Sourcing Equipment) is a device (switch or hub for instance) that will provide power in a PoE setup. The maximum allowed continuous output power per such device in IEEE 802.3af is 15.4 watts and in IEEE 802.3at is 36 watts.

PD (Powered Device) such as IP phones, network cameras or wireless access points is a PoE-enabled terminal by PSE and thus it consumes energy.

3. Product Specifications

Model	POE-E202
Interfaces	
PoE IN	1 x 10/100/1000BASE-T Ethernet with IEEE 802.3at PoE "Data + DC" in auto MDI/MDI-X, auto-negotiation RJ45 connector
PoE OUT	2 x 10/100/1000BASE-T Ethernet with IEEE 802.3at/802.3af PoE "Data + DC" out auto MDI/MDI-X, auto-negotiation RJ45 connector

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Power over Ethernet	
PoE Standard	PoE In Port IEEE 802.3at Power over Ethernet Plus end-span/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 Supply Type	End-span (Type A)
PoE Power	PoE In Port 52~57V DC, max. 36 watts. Per PoE Out Port 44~55V DC, max. 25 watts
Power Pin Assignment	PoE In Port 1/2 (+), 3/6 (-); 4/5 (+), 7/8 (-) Per PoE Out Port 1/2 (+), 3/6 (-)
Hardware Specifications	
Data Rate	10/100/1000Mbps
MAC Address Table	2K
Data Buffer	2Mbits
Switch Architecture	Store-and-Forward
Switch Fabric	6Gbps
Switch Throughput	4.46Mpps @ 64 bytes

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Jumbo Frame	10KB
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
LED Indicators	PoE IN Port: PoE-in-Use x 1 (orange), LNK/ACT x 1 (green) PoE Out Port 1: PoE-in-Use x 1 (orange), LNK/ACT x 1 (green) PoE Out Port 2: PoE-in-Use x 1 (orange), LNK/ACT x 1 (green)
Protection	ESD (Ethernet): 2KV (TBD) Surge (EFT for power) : 2KV (TBD)
Enclosure	Metal
Installation	Wall mountable
Dimensions (W x D x H)	140 x 77 x 28 mm
Weight	234g
Power Requirements	IEEE 802.3at compliant with voltage within 52V-56V DC
Power Consumption	1.6 watts/5.5BTU (System on with PoE input) 2.2 watts/7.5BTU (Ethernet full loading without PoE function) 36 watts/122.8BTU (Full loading with PoE function)
Network Cable	10BASE-T: 4-pair UTP Cat. 5 up to 100m (328ft) 100BASE-TX: 4-pair UTP Cat. 5 up to 100m (328ft) 1000BASE-T: 4-pair UTP Cat. 5e, 6, up to 100m (328ft) EIA/TIA-568 100-ohm STP (100m, 328ft)

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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 802.3x 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)

 **Note**

Distance will often be shorter due to power delivery voltage-drop on the wire. The maximum distances will vary on the quality of the UTP cable and environment.

 **Note**

48V DC input is not suitable for PoE extend function. We suggest you use IEEE802.3at 2-pair PoE+ with voltage within 52~57V DC and a maximum of 36W.

4. Hardware Introduction

The front panel of the Gigabit PoE Extender consists of one auto-sensing 10/100/1000BASE-T 802.3at PoE IN port, and two auto-

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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.

4.1 Three-View Diagram

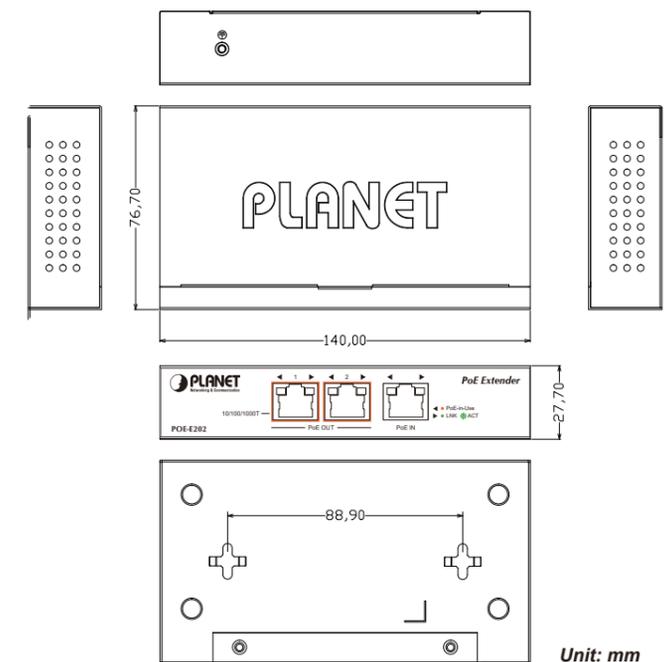


Figure 1: POE-E202

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4.2 Ports Connection

PoE IN Port	Connect the PoE IN port from the following 802.3at PSE devices through a Cat 5/5e/6 UTP cable: PoE injector PoE injector hub PoE Ethernet switch
PoE OUT Port	Connect the PoE OUT port to the following 802.3at/af PD devices through a Cat 5/5e/6 UTP cable: PoE IP camera PoE VoIP phone PoE wireless AP PoE splitter

4.3 LED Indicators

802.3at PoE IN Port

LED	Color	Function
PoE-in-Use	Orange	Lights to indicate the port is receiving 52V-56V DC in-line power input.
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.

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802.3at/af PoE Out Ports

LED	Color	Function
PoE-in-Use	Orange	Lights to indicate the port is providing 52V-56V DC in-line power output.
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.

5. Hardware Installation

5.1 Before Installation

The POE-E202 is installed between the PSE (power source equipment) and the PD (powered device); it is powered by PSE and forwards the Ethernet data and remaining POE power to the PD. The POE-E202 doesn't require an external power supply and it can be installed easily by just plug and play without affecting the data transmission performance.

Note

- To provide you with better PoE power and data extension quality, we strongly recommend that you use **"Solid UTP Cable"** when installing the POE-E202.
- The POE-E202 can be installed with a third-party device if the device complies with IEEE 802.3at/af standard.

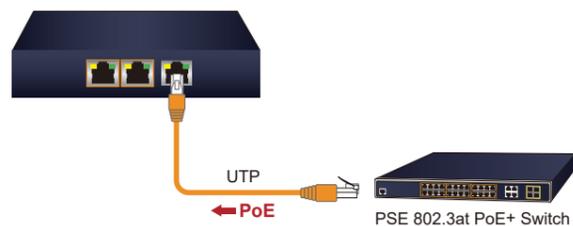
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5.2 Connecting POE-E202 to Power Source Equipment (PSE)

This section describes how to install Gigabit PoE Extender and make connection to it. Please read the following topics and perform the procedures in the order being presented.

There are 3 RJ45 ports in the Gigabit PoE Extender, of which the **"PoE IN"** port functions as **"PoE (Data and Power) input"** and the two **"PoE Out"** ports function as **"PoE (Data and Power) output"**.

Step 1: Connect a standard Cat5e/6 UTP cable from **PSE**, such as PoE switch, PoE injector hub and single port PoE injector, to the **"PoE IN"** port of the Gigabit PoE Extender.



Step 2: The PSE delivers both Ethernet Data and PoE power over UTP cable to the Gigabit PoE Extender and the **"PoE-in-use"** and **"LNK/ACT LED"** will be lit steadily.

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Note

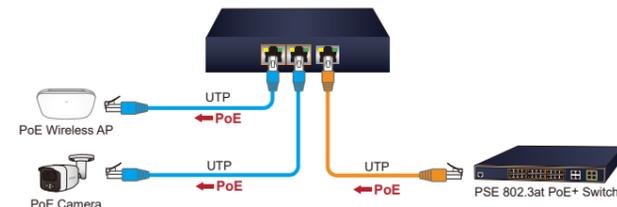
- When the PoE-in-use LED turns steady orange, it means the Gigabit PoE Extender is being powered successfully with PoE.
- If the PoE-in-use LED is not lit, please check the remote PSE or the cable connecting to a PC or a network device to see if the cable is correct. Or with an 802.3at device such as the target PD, check whether the power injection is correct.

Caution

Never connect any **non-standard** POE PSE to the Gigabit PoE Extender; it will damage the device permanently.

5.3 Connecting POE-E202 to Powered Device (PD)

Step 1: Connect the additional Cat5e/6 cable that will be used to connect to the remote PD to the **"PoE Out"** port of the Gigabit PoE Extender.



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Step 2: The **"PoE Out"** port is also the power injector which transmits DC voltage to the Cat5e/6 cable and transfer data and power simultaneously between the PSE and PD.

Step 3: Once the Gigabit PoE Extender detects the existence of an IEEE 802.3at/af device, the **"PoE-in-Use"** LED indicator will be lit steadily, showing it is providing power.

Note

- If the connected device is not fully complying with IEEE 802.3af/at standard or in-line power device, the PoE-in-Use LED indicator of the Gigabit PoE Extender will not be lit steadily.
- According to IEEE 802.3af/at standard, the Gigabit PoE Extender will not inject power to the cable if not connected to a standard IEEE 802.3af/at device.

5.4 PoE Power Distribution

The POE-E202 can obtain a maximum of 36-watt PoE power from 802.3at PoE input port and supplies a maximum of 25-watt PoE power budget to 2 PoE output ports, extending both the reach of Gigabit Ethernet Data and IEEE 802.3at/802.3af Power over Ethernet over the standard 100m (328 ft.) Cat 5/5e/6 UTP cable to up to 200m at the same time.



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

POE-E202

PLANET Technology Corp.

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Warning:
This device is compliant with Class A of CISPR 32.
In a residential environment this device may cause radio interference.
2351-AF0560-002



6. Power over Ethernet Capability

With different distance and different PoE input source, it will deflect the PoE output capability. Please refer to the table below.



6.1 When PSE/PoE switch output is DC 52V

A (Distance)	B (Distance)	C (Watts)
100M	20M	21.6
100M	60M	20.7
100M	100M	19.7

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6.2 When PSE/PoE switch output is DC 56V

A (Distance)	B (Distance)	C (Watts)
100M	20M	21.1
100M	60M	20.2
100M	100M	19.3

7. Customer Support

Thank you for purchasing PLANET products. You can browse our online FAQ resource at PLANET web site first to check if it could solve your issue. If you need more support information, please contact PLANET switch support team.

PLANET online FAQs:
<https://www.planet.com.tw/en/support/faq>

Switch support team mail address:
support@planet.com.tw

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