IEEE 802.3at Gigabit

High Power over Ethernet Adapter

POE-161 / POE-161S

User's Manual

Trademarks

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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.

Energy Saving Note of the Device

This power required device does not support Stand by mode operation.

For energy saving, please remove the DC-plug or push the hardware Power Switch to OFF position to disconnect the device from the power circuit. Without removing the DC-plug or switch off the device, the device will still consume power from the power source. In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to power off or to remove the DC-plug for the device if this device is not intended to be active.

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 IEEE 802.3at Gigabit High Power over Ethernet Adapter User's Manual

For Models:

IEEE 802.3at Gigabit High Power over Ethernet Injector:
POE-161

IEEE 802.3at Gigabit High Power over Ethernet Splitter:
POE-161S

Revision: 1.0 (January, 2010)

Part No.: 2350-AF0280-000

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1. Package Content

Thank you for purchasing PLANET IEEE 802.3at High Power over Ethernet Adapter, POE-161 and POE-161S. Terms of **"802.3at PoE Injector"** in following section of this User's Manual means the POE-161, Terms of **"802.3at PoE Splitter"** in following section of this User's Manual means the POE-161S.

Upon open the box of the IEEE 802.3at High Power over Ethernet Adapter and carefully unpack it. The box should contain the following items:

POE-161:

- The IEEE 802.3at Gigabit High Power over Ethernet Injector x 1
- User's Manual x 1
- DC 56V Power Adapter x 1
- Power Cord x 1

POE-161S:

- The IEEE 802.3at Gigabit High Power over Ethernet Splitter x 1
- User's Manual x 1
- 15cm UTP Straight Network Cable x 1
- DC Plug cable x 2

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 against to repack the product in case there is a need to return it to us for repair.

2. Product Features

POE-161:

- **Interface**
  - ♦ 2-Port RJ-45 interfaces
    - ✧ 1-Port **Data + Power** output
    - ✧ 1-Port **Data input**
  - ♦ 1 DC 56V input power socket
- **PoE**
  - ♦ Gigabit High Power over Ethernet Mid-Span PSE
  - ♦ Pre-IEEE 802.3at compliant
  - ♦ IEEE 802.3af splitter devices compatible
  - ♦ Support PoE Power up to 30 Watts for PoE port
  - ♦ Up to 1 IEEE 802.3at devices powered
  - ♦ Provides DC 56V power over RJ-45 Ethernet cable to device with Ethernet port
  - ♦ Auto-detect of POE IEEE 802.3at equipment and devices from being damaged by incorrect installation
  - ♦ Remote power feeding up to 100m
- **Hardware**
  - ♦ Plastic case
  - ♦ LED indicators for Power LED and PoE In-use
- **Standard Compliance**
  - ♦ IEEE 802.3 10Base-T
  - ♦ IEEE 802.3u 100Base-TX
  - ♦ IEEE 802.3ab 1000Base-T
  - ♦ IEEE 802.3at Power over Ethernet pre-standard
  - ♦ FCC Part 15 Class A, CE

POE-161S:

- **Interface**
  - ♦ 2-Port RJ-45 interfaces
    - ✧ 1-Port **PoE Power+ Data** input
    - ✧ 1-Port **Data output**
  - ♦ 1 DC out plug connector
- **PoE**
  - ♦ Complies with IEEE 802.3at Power over Ethernet pre-standard, PD
  - ♦ Splits the 56V DC power over RJ-45 Ethernet cable into DC 5V/12V output
  - ♦ Up to 1 non-IEEE 802.3at devices powered
  - ♦ Auto-detect of PoE IEEE 802.3at equipment, protect devices from being damaged by incorrect installation
  - ♦ Adjustable two different output voltage options (5V/4.5A, 12V/2A) to fit various devices
  - ♦ Distance up to 100 meters
  - ♦ IEEE 802.3af Injector devices compatible
- **Hardware**
  - ♦ Plastic case
  - ♦ 5V /12V DIP switch
  - ♦ LED indicators power input indication
- **Standard Compliance**
  - ♦ IEEE 802.3 10Base-T
  - ♦ IEEE 802.3u 100Base-TX
  - ♦ IEEE 802.3ab 1000Base-T
  - ♦ IEEE 802.3at Power over Ethernet pre-standard
  - ♦ FCC Part 15 Class A, CE

Note

PSE (Power Sourcing Equipment) is a device (switch, or hub for instance) that will provide power in a PoE setup. Maximum allowed continuous output power per such device in IEEE 802.3af is 15.4W, 30W in IEEE 802.3at pre-standard.

PD (Powered Device) is a PoE-enabled terminal by PSE and thus consumes energy, such as IP Phones, network cameras and Wireless access points, etc

3. Product Specification

POE-161:

Product		POE-161
Hardware Specification		
Interface	"Data" Input Port	1 x RJ-45 STP
	"PoE (Data+Power)" Output Port	1 x RJ-45 STP
	DC 56V Input power socket	1
LED Indicator		System: Power x 1 (Green) PoE Port: PoE in Use x 1 (Green)
Network Cable		10Base-T: 2-Pair UTP Cat. 3, 4, 5, up to 100m (328ft) 100Base-TX: 2-Pair UTP Cat. 3, 4, 5, up to 100m (328ft) 1000Base-T: 2-Pair UTP Cat. 5, 5e, 6 up to 100m (328ft) EIA/TIA- 568 100-ohm STP (100m)
Data Rate		10/100/1000Mbps
Dimension (W x D x H)		95 x 70 x 25 mm
Weight		83g
Unit Input Voltage		DC 56V, 0.53A
Power Requirement		100-240V AC, 50/60Hz
Power Consumption		30 Watts max.
Number of device can be powered		1
Operating Temperature		0 ~ 50 Degree C
Storage Temperature		-10 ~ 70 Degree C
Humidity		5 ~ 95% (Non-condensing)

Power over Ethernet	
PoE Standard	IEEE 802.3at High Power over Ethernet pre-standard / Mid-Span PSE
PoE Power Output	DC 56V / 30 Watts
PoE Power supply Type	Mid-Span
Power Pin Assignment	4/5(+), 7/8(-)
Standards Conformance	
Standards Compliance	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3at Power over Ethernet pre-standard
Regulation Compliance	FCC Part 15 Class A, CE

POE-161S:

Product		POE-161S
Hardware Specification		
Interface	"Data" Out Port	1 x RJ-45 STP
	"PoE (Power+Data)" Input Port	1 x RJ-45 STP
	DC Out Plug Connector	1
LED Indicator		System: PoE In x 1 (Green)
Network Cable		10Base-T: 2-Pair UTP Cat. 3, 4, 5, up to 100m (328ft) 100Base-TX: 2-Pair UTP Cat. 3, 4, 5, up to 100m (328ft) 1000Base-T: 2-Pair UTP Cat. 5, 5e, 6 up to 100m (328ft) EIA/TIA- 568 100-ohm STP (100m)
Data Rate		10/100/1000Mbps (vary on Ethernet device attached)
DIP Switch		5V DC / 12V DC output voltage
Dimension (W x D x H)		95 x 70 x 25 mm
Weight		111g
Number of device can be powered		1
Operating Temperature		0 ~ 50 Degree C
Storage Temperature		-10 ~ 70 Degree C
Humidity		5 ~ 95% (Non-condensing)
Power over Ethernet		
PoE Standard		IEEE 802.3at High Power over Ethernet pre-standard / PD

Standards Conformance	
Standards Compliance	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3at Power over Ethernet pre-standard
Regulation Compliance	FCC Part 15 Class A, CE

4. Product Outlook

Figure 1 shows a front panel of 802.3at PoE Injector.

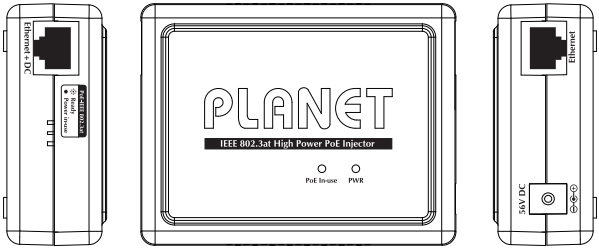


Figure 1: POE-161 Outlook

LED Indicators

LED	Color	Function
PWR	Green	Lights to indicate that the POE-161 has power.
PoE In-use	Green	Lights to indicate the port is providing 56V DC in-line power.

Figure 2 shows a front panel of 802.3at PoE Splitter.

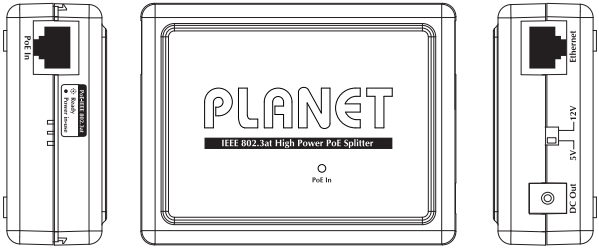


Figure 2: POE-161S Outlook

LED Indicators

LED	Color	Function
PoE In	Green	Lights to indicate the port is providing 56V DC in-line power.

5. Hardware Installation

This IEEE 802.3at Gigabit High Power over Ethernet Adapter provides three different running speeds – 10Mbps, 100Mbps and 1000Mbps in the same device and automatically distinguishes the speed of incoming connection. Please refer to following sections for detail information about IEEE 802.3at Gigabit High Power over Ethernet Adapter.

5-1 POE-161

The following section describes the hardware features of POE-161. Before connecting any network device to the POE-161, read this chapter carefully.

Before Installation

Before your installation, it is recommended to check your network environment. If there is any IEEE 802.3at devices need higher power to power on and work normally, the POE-161 can provide you a way to supply power for this Ethernet device conveniently and easily. The POE-161 equips with an AC-DC adapter with DC 56V input and injects this DC power into the pin of the twisted pair cable (pair 4, 5 and pair 7, 8).

If there is very difficult to find a power socket for AC-DC Adapter of your non IEEE 802.3at networked device, the POE-161 and POE-161S can provide you a way to supply DC power for this Ethernet device conveniently and easily.


Note

The POE-161 and POE-161S can be installed in pair. However, the use of third-party device is allowed if the device complied with IEEE 802.3at Power over Ethernet pre-standard.

POE-161, the Injector Installation

1. Connect the AC adapter to **"DC 56V"** of POE-161. The power LED will be steady on.
2. Connect a standard network cable from Switch/workstation to **"Ethernet"** port of POE-161.
3. Connect the long cable that will be used to connect to the remote device to the port **"Ethernet + DC"**.
4. Connect with IEEE 802.3at devices, due to the capability of IEEE 802.3at Power over Ethernet pre-standard, the POE-161 can directly connect with any IEEE 802.3at end-nodes such as PTZ (Pan, Tilt & Zoom) network cameras, PTZ Speed Dome, color touch- screen Voice over IP (VoIP) telephones, multi- channel wireless LAN access points where support IEEE 802.3af In-line Power over Ethernet port. The screen in Figure 3 appears.

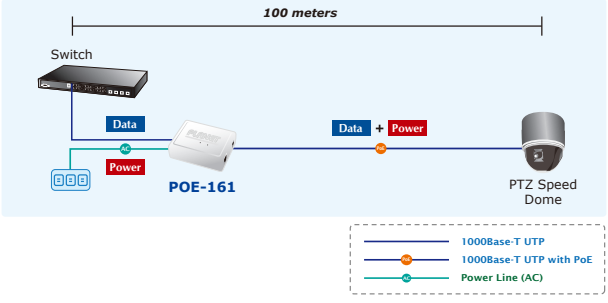


Figure 3: Connection to IEEE 802.3at device

Once POE-161 detects the existence of an IEEE 802.3at device, the POE In-use LED indicator will be steady on to shows it is providing power.


Note

If the connected device is not fully complying with IEEE 802.3at Power over Ethernet pre-standard or in-line power device, the LED indicator of POE-161 will not be steady on.

POE-161 and POE-161S, the IEEE 802.3at Injector Splitter Installation

1. Connect the AC adapter to **"DC 56V"** of POE-161. The power LED will be steady on.
2. Connect a standard network cable from **"Ethernet+DC"** port of POE-161 to **"PoE In"** port of POE-161S. The POE In-use LED of POE-161 / POE-161S will light on continuance.
3. Connect a standard network cable from Switch/workstation to **"Ethernet"** port of POE-161.
4. Connect the UTP cable in the package from **"Ethernet"** port of POE-161S to the RJ-45 port of remote device.
5. Adjust proper DC power output and connect DC plug from **"DC OUT"** of POE-161S to remote device.
6. Power on the remote device and its power LED indicator will remains on.

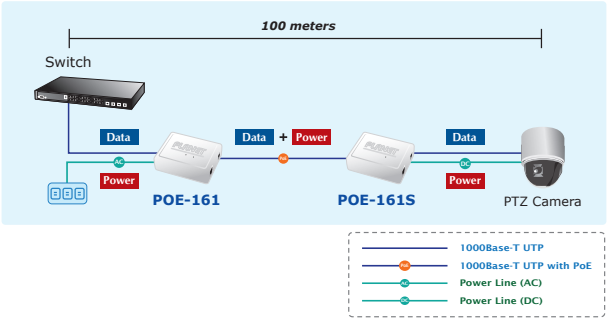


Figure 4: Connection architecture over POE-161/POE-161S

Note

1. According to IEEE 802.3at Power over Ethernet pre-standard, the POE-161 will not inject power to the cable if not connecting to IEEE 802.3at devices.
2. Please ensure the output voltage is correct before applying power to remote device.

5-2 POE-161S

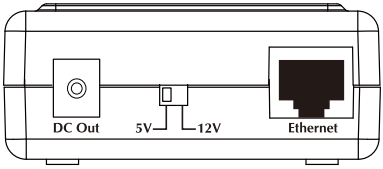
The following section describes the hardware features of POE-161S. Before connecting any network device to the POE-161S, read this chapter carefully.

Before Installation

If your network environment is very difficult to find a power socket for your AC-DC Adapter of networked device, the POE-161S provide DC power for this Ethernet Device conveniently and easily.

The POE-161S separates the power out and provide two kind of DC power output through its DIP switch and its voltage and current shown as below:

- 5V DC / 4.5A
- 12V DC / 2A



The default value will be set on 5V.

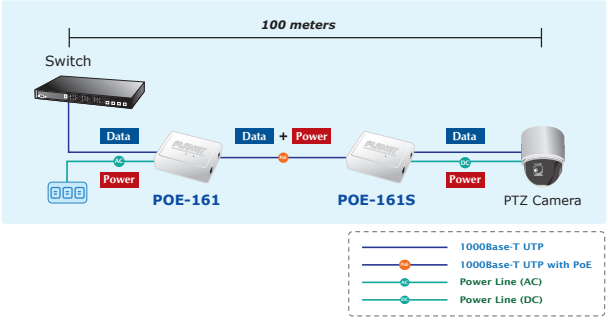
Hint

Please check the power requirement of the device that is going to get the power from POE-161S. If the power requirement is higher than POE-161S can supply, current overload will shutdown the POE-161S itself. Thus, it will shutdown your device as well.

POE-161 and POE-161S can be installed in pair. However, use of third-party device is allowed if the device complied with IEEE 802.3at Power over Ethernet pre-standard.

POE-161S, the Splitter Installation

1. Connect a standard network cable from **"Ethernet+DC"** port of POE-161 to **"PoE In"** port of POE-161S. The POE LED of POE-161S / POE-161 will light on continuance.



Warning	The POE-161S only accept IEEE 802.3at or IEEE 802.3af equipment; other in-line power device may cause the POE-161S malfunction.

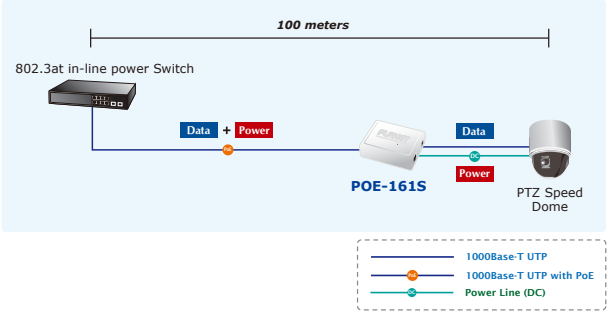
2. Connect the UTP cable in the package from **"Ethernet"** port of POE-161S to the RJ-45 port of remote device.
3. Adjust proper DC power output and connect DC plug from **"DC OUT"** of POE-161S to remote device.

Caution	Please ensure the output voltage is correct for remote device. Otherwise, it will damage your remote device.

4. Power on the remote device and its LED indicator will remains on.

Connect with 802.3at devices

The POE-161S also provide the alternative to make the non IEEE 802.3at devices the possibility to connect with an IEEE 802.3at in-line power device like Power over Ethernet Injector or Power over Ethernet Switch, the figure is as below.



Hint

With IEEE 802.3at Power over Ethernet pre-standard; the POE-161S also can co-work with IEEE 802.3at End-Span High Power over Ethernet Switch that feeding power over pin 1, 2, and 3, 6. For example: the WGSD-8020P.

Customer Support

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

PLANET online FAQ :
http://www.planet.com.tw/en/support/faq.php?type=2

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

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