

**Single-Port 10/100/1000Mbps  
802.3bt PoE Injector**

**POE-171A Series**  
User's Manual

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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.

### **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 POE-171A Series User's Manual

Model: POE-171A-60, POE-171A-95

Revision: 1.1 (May, 2018)

Part No.: 2350-AF0620-001

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## 1. Package Contents

Thank you for purchasing PLANET POE-171A Single-port 10/100/1000Mbps series

Model	LAN Port Speed	PoE Standard	PoE Budget
POE-171A-60	10/100/1000Mbps	IEEE 802.3af/at/bt	60 watts
POE-171A-95	10/100/1000Mbps	IEEE 802.3af/at/bt	95 watts

Please unpack the box of the device carefully, and the box should contain the following items:

802.3bt PoE injector x 1	User's manual x 1
	
Power adaptor x 1	AC power cord x 1
	

If any item is found missing or damaged, please contact your local reseller for replacement.

## 2. Product Features

### ● Interface

- ◆ 2 RJ45 interfaces
  - 1-port **Data + Power** output
  - 1-port **Data input**
- ◆ 1 DC 52~56V input power socket
- ◆ 1 PoE mode (Standard/Legacy) DIP switch

### ● Power over Ethernet

- ◆ Complies with IEEE 802.3af/at/bt PoE end-span/mid-span PSE
- ◆ Supports PoE power up to 60/95 watts for PoE port
- ◆ Auto-detection of PoE IEEE 802.3af/at/bt equipment and devices from being damaged by incorrect installation
- ◆ Monitor the status of the total PoE usage in real time
- ◆ Remote power feeding up to 100m
- ◆ Auto-detection of DC input voltage



Note

**PSE (power sourcing equipment)** is a device (switch, or hub for instance) that will provides power in a PoE setup. Maximum allowed continuous output power per such device in IEEE 802.3af is 15.4W, and in IEEE 802.3at is 30W.

**PD (powered device)** is a PoE-enabled terminal, such as PoE IP phone, PoE IP camera, or PoE wireless access point, whose power is supplied by a PSE.

### 3. Product Specifications

Product		POE-171A-60	POE-171A-95
Hardware Specifications			
Interface	Input Port	1 x RJ45 STP Data In	
	Output Port	1 x RJ45 STP PoE (Data + Power) Out	
	DC Socket	1 x 52~56V DC input socket	
Network Cable*		Twisted-pair cable up to 100 meters (328ft) 10BASE-T: 4-pair UTP Cat3, 4, 5, 5e, 6 100BASE-TX: 4-pair UTP Cat5, 5e, 6 1000BASE-T: 4-pair UTP Cat5e, 6	
LED Indicator		System: Power x 1 (Green) PoE Port: PoE-in-Use x 1 (Orange) Legacy Mode: Legacy x 1 (Orange) PoE Usage: PoE Usage x 3 (Orange)	
Data Rate		10/100/1000Mbps	
Dimensions (W x D x H)		94 x 70.3 x 26.2 mm	
Weight		200g	250g
Unit Output Voltage		DC 52~56V	
Power Requirements		DC 52-56V, 1.4A max.	DC 52-56V, 2.5A max.
Power Consumption		72 watts max.	130 watts max.
No. of Devices that can be powered		1	
Power over Ethernet			
PoE Standard		IEEE 802.3af/at/bt Ultra PoE PSE	

PoE Power Output Budget	DC 54V / 60-watt PoE via 4-pair DC 54V / 30-watt PoE via 2-pair	DC 54V / 95-watt PoE via 4-pair DC 54V / 30-watt PoE via 2-pair
PoE Power Output	Max. 60W for 1 m cable Max. 52W for 100 m cable	Max. 89.5W for 1 m cable Max. 72W for 100 m cable
PoE Power Supply Type	End-span + Mid-span	
Power Pin Assignment	Pair 1 End-span: 1/2 (-), 3/6 (+) Pair 2 Mid-span: 4/5 (+), 7/8 (-)	
PoE Mode	<b>Standard:</b> To provide power to the PD devices that follow the IEEE 802.3af/at/bt standard. <b>Legacy:</b> To provide power to the PD devices that do not fully follow the IEEE 802.3af/at/bt standard.	
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 802.3bt 4-pair Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3af Power over Ethernet	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000BASE-T Gigabit Ethernet IEEE 802.3bt 4-pair Power over Ethernet (Type 4) IEEE 802.3at Power over Ethernet Plus IEEE 802.3af Power over Ethernet

Regulatory Compliance	FCC Part 15 Class A, CE
Environment	
Operating Temperature	0 ~ 50 degrees C
Storage Temperature	-10 ~ 70 degrees C
Operating Humidity	5 ~ 90%, relative humidity, non-condensing
Storage Humidity	5 ~ 90%, relative humidity, non-condensing



Caution

1. As the IEEE 802.3bt device provides high power, please use high-quality network cable and RJ45 connector.
2. The maximum PoE output power depends on the cable length, the quality of cable, and DC input voltage.

## 4. Product Outlook

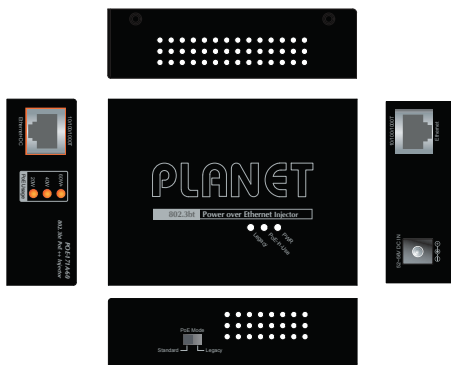


Figure 1: POE-171A-60 Outlook

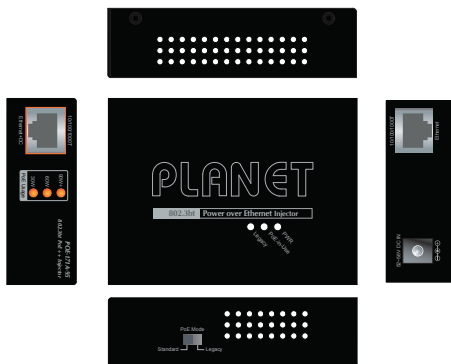


Figure 2: POE-171A-95 Outlook

## LED Indicators:

LED	Color	Function
PWR	Green	Lights to indicate the 802.3bt PoE injector has power.
PoE-in-Use	Orange	Lights to indicate the device is providing PoE power.
Legacy	Orange	Lights to indicate the device is working in Legacy mode.
PoE Usage	Orange	PoE Usage LED can monitor the DC input voltage or the status of the power usage.

## Detection of DC input voltage of POE-171A series:

When user powers on the POE-171A injector via the DC adapter, the injector will detect the DC input voltage and then PoE Usage LED will flash three times.

LED	Description
20W/30W	Flashing three times means the DC input voltage is 48~51V.
40W/60W	Flashing three times means the DC input voltage is 52~54V.
60W+/90W+	Flashing three times means the DC input voltage is 55~56V.

### Monitoring of power usage of POE-171A-60:

LED	Description
20W	<ol style="list-style-type: none"><li>1. Off to indicate the PoE usage is less than 9W</li><li>2. Blinks to indicate that the PoE usage is around 10W to 19W.</li><li>3. Lights to indicate the PoE usage is around 20W to 29W.</li></ol>
40W	<ol style="list-style-type: none"><li>1. Blinks to indicate that the PoE usage is around 30W to 39W.</li><li>2. Lights to indicate the PoE usage is around 40W to 49W.</li></ol>
60W+	<ol style="list-style-type: none"><li>1. Blinks to indicate that the PoE usage is around 50W to 59W.</li><li>2. Lights to indicate the PoE usage is maximum.</li></ol>

### Monitoring of power usage of POE-171A-95:

LED	Description
30W	<ol style="list-style-type: none"><li>1. Off to indicate the PoE usage is less than 14W.</li><li>2. Blinks to indicate that the PoE usage is around 15W to 29W.</li><li>3. Lights to indicate the PoE usage is around 30W to 44W.</li></ol>
60W	<ol style="list-style-type: none"><li>1. Blinks to indicate that the PoE usage is around 45W to 59W.</li><li>2. Lights to indicate the PoE usage is around 60W to 74W.</li></ol>
90W+	<ol style="list-style-type: none"><li>1. Blinks to indicate that the PoE usage is around 75W to 89W.</li><li>2. Lights to indicate the PoE usage is maximum.</li></ol>

## PoE Mode:

PoE Mode	Description
Standard	Fully conforms to the IEEE 802.3af/at/bt standard.
Legacy	The legacy detection is to identify the valid current signature of the PDs that do not fully follow the IEEE 802.3af/at/bt standard. This protects against damage to the PDs as the right PoE mode is applied.



Note

After changing the PoE mode, please power off and then on the PoE injector to make the change effective.

## 5. Hardware Installation

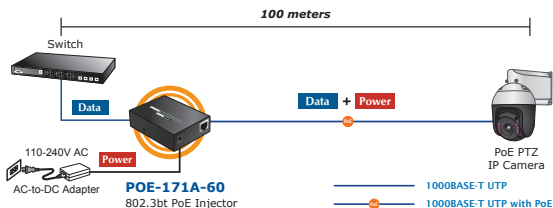
The following section describes the hardware features of the POE-171A series. Before connecting any network device to it, please read this chapter carefully.

### 5.1 Before Installation

Before your installation, it is recommended to check your network environment. If there is any IEEE 802.3bt device that needs to be powered on and works normally, the POE-171A series provides you with a way out to supply power to this Ethernet device conveniently and easily. The POE-171A series is equipped with a power adaptor which is 100-240V AC input and injects DC 52~56V power into the pin of the twisted pair cable (pair 1/2 [-], 3/6 [+] and pair 4/5[+], 7/8[-]).

### 5.2 POE-171A series Installation

1. Connect the AC power adaptor to the **"52-56V DC IN"** of the POE-171A series; the **"PWR"** LED will be steadily on.
2. Connect a standard Ethernet cable from an Ethernet switch or PC workstation to the **"Ethernet"** port of the POE-171A series.
3. Connect the long cable to the **"Ethernet+DC"** port.
4. The POE-171A series, adopting the IEEE 802.3af/at/bt technology, can directly connect with any IEEE 802.3af/at/bt end-nodes, such as PTZ (Pan, Tilt & Zoom) network cameras, PTZ speed dome cameras, color touch screen, Voice over IP (VoIP) telephones and multi-channel wireless LAN access points. The screen in Figure 3 appears.



**Figure 3:** Architecture of Connected IEEE 802.3af/at/bt Devices

Once the POE-171A series detects the existence of an IEEE 802.3af/at/bt device, the **PoE-in-Use** LED indicator will be steadily on to show it is providing power.



Note

Since the PoE port of the POE-171A series supports 52-56V DC PoE power output, please check and assure the PD accepts DC power range of 52-56V DC. Otherwise, it will damage the PD.

## 5.3 POE-171A Series and POE-172S Installation

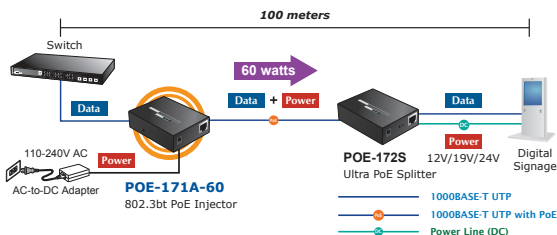


Note

Please turn off the POE-172S before you switch to DC power output mode.

1. Adjust a proper DC power output and connect the DC plug from the **"DC OUT"** of the POE-172S to a remote device.
2. Connect the power adaptor to the **"52-56V DC IN"** of the POE-171A series; the **"PWR"** LED will be steadily on.

3. Connect a standard Ethernet cable from the **"Ethernet+DC"** port of the POE-171A series to the **"PoE In"** port of the POE-172S. The **"30W"** and **"60W+"** LEDs of the POE-172S and the **"PoE-in-Use"** of POE-171A series will light up continuously.
4. Connect a standard Ethernet cable from an Ethernet switch or PC workstation to the **"Ethernet"** port of the POE-171A series.
5. Connect a standard Ethernet cable from the **"Ethernet"** port of the POE-171S to a remote Ethernet device.
6. The remote device will be turned on.



**Figure 4:** Architecture of Connected POE-171A series and POE-172S



Note

According to IEEE 802.3af/at/bt Power over Ethernet, the POE-171A series will not inject power to the cable if not connected to IEEE 802.3af/at/bt device.

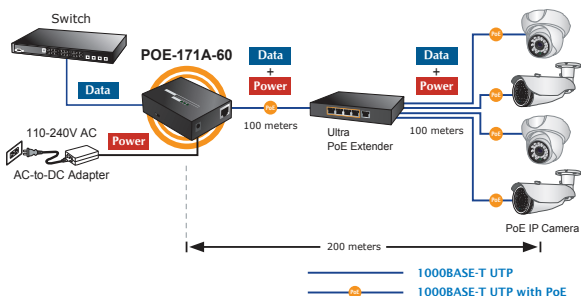


Note

Please ensure the POE-172S output voltage is correct before applying power to remote device. The POE-172S provides DC12V/19V/24V power output.

## 5.4 POE-171A Series and POE-E304 Installation

1. Connect the power adaptor to the **"52-56V DC IN"** of the POE-171A series; the **"PWR"** LED will be steadily on.
2. Connect a standard Ethernet cable from the **"Ethernet+DC"** port of the POE-171A series to the **"PoE IN"** port of the POE-E304.
3. The POE-171A series delivers both Ethernet Data and PoE power over UTP cable to the POE-E304 and the **POE-in-Use** LED of the POE-171A series and the **"PWR"** LED of the POE-E304 will light up continuously.
4. Connect the additional standard Ethernet cable that will be used for connecting to the remote PD to the **"PoE OUT"** port of the POE-E304.
5. The **"PoE OUT"** port is also the power injection which transmits DC voltage to the standard network cable and transfer data and power simultaneously between the POE-171A series and PD.
6. Once the POE-E304 detects the existence of an IEEE 802.3af/ at device, the **"PoE OUT"** LED indicator will be steadily ON to show it is providing power.



**Figure 5:** Architecture of Connected POE-171A series and POE-E304



#### Note

1. If the connected device is not fully complied with IEEE 802.3af/at standard or in-line power device, the PoE Out LED indicator of POE-E304 will not be steadily on.
2. According to the IEEE 802.3af/at standard, the POE-E304 will not inject power to the cable if not connected to a standard IEEE 802.3af/at device.

## ***Customer Support***

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

PLANET online FAQs:

<http://www.planet.com.tw/en/support/faq.php?type=2>

PoE support team mail address:

[support\\_poe@planet.com.tw](mailto:support_poe@planet.com.tw)

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## EC Declaration of Conformity

For the following equipment:

\*Type of Product : Single-Port 10/100/1000Mbps 802.3bt PoE Injector

\*Model Number : POE-171A-60, POE-171A-95

\* Produced by:

Manufacturer's Name : **Planet Technology Corp.**

Manufacturer's Address : 10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive on 2014/30/EU.

For the evaluation regarding the EMC, the following standards were applied:

EN55032	(2015)
EN 61000-3-2	(2014)
EN 61000-3-3	(2013)
EN55024	(2010+A1:2015)
IEC 61000-4-2	(2008)
IEC 61000-4-3	(2006+A1:2007+A2:2010)
IEC 61000-4-4	(2012)
IEC 61000-4-5	(2014)
IEC 61000-4-6	(2013)
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

Person responsible for making this declaration

Name, Surname Jonas Yang

Position / Title : Product Manager

Taiwan  
Place

Oct. 19, 2016  
Date

  
Legal Signature

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