User's Manual

HAWKING
TECHNOLOGY

Power Over Ethernet Injector

Power Over Ethernet Splitter

HPOE1

Power Over Ethernet Adapter Kit

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

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HPOE1 Power Over Ethernet Adapter Kit

The HPOE1 Power-Over-Ethernet (PoE) Adapter Kit provides both data and AC power through an Ethernet cable to non PoE-equipped devices, such as access points, IP cameras, and other devices that do not have built-in PoE functionality.

The PoE adapter kit is easy to install. The diagram below shows a typical application for the PoE Adapter Kit.
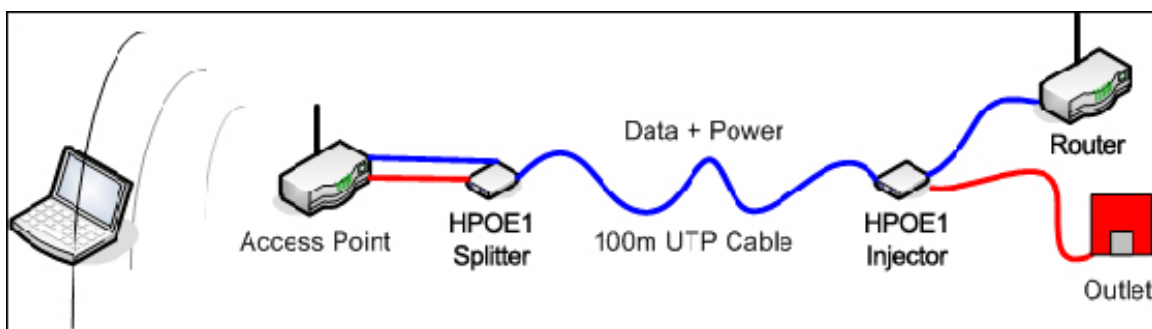

Figure 1. PoE Adapter Kit Application

Figure 1 above shows that the PoE Injector unit's Ethernet (LAN) port is connected to an Ethernet port on the router via a standard RJ-45 Ethernet cable. (It can also be connected to an Ethernet port on a switch or hub.) The Injector unit's 48V/0.4A Power-In port is connected to a standard wall outlet via the power adapter that is included in the HPOE1's packaging. On the other end of the Injector unit, the Power + Data-Out port is connected to the Splitter unit's Power + Data-In port via a standard RJ-45 Ethernet cable. As the port names indicate, both data and power are transmitted via this RJ-45 cable that connects the Injector and Splitter units.

On the other end of the Splitter unit, the LAN port is connected to a network device's LAN port via an RJ-45 cable. (The network device can be an access point, a network camera, or other network device.) The Splitter unit's DC-Out power port is connected to the network device's power port via the Power Link cable that is included with the packaging. The Splitter unit's DIP switch is adjusted to a voltage setting that matches the network device's listed power setting. (For example, if the device is a network camera with a 5V power specification, the Splitter's DIP switch would be set to "5V".)

For more detailed instructions on how to set up the PoE Adapter Kit with a network device, please refer to the chapter titled "Installation" on page 8 of this user's manual.

- Transmits both data and power via a standard RJ-45 Ethernet cable

- Delivers DC power and data to non-PoE network devices

- Delivers power over up to 100 meters

- Short-circuit protection

- Adjustable output settings (5v/1.5A, 7.5v/1A, and 12v/1A) to match the power setting of your associated network device

- Remote power feeding

- Lightweight and compact

- Plug-and-Play

1. **Power over Ethernet Injector**
2. **Power over Ethernet splitter**
3. Power adapter 48V/0.4A
4. RJ-45 Ethernet Cable
5. Power Link Cable (Male-to-Male)
6. User's Manual

Figure 2. Package Contents

Power over Ethernet Injector

The Power over Ethernet Injector has three connection ports and one LED indicator (Power). The following is a brief description:

- **Data-In (LAN) port:** This is the RJ-45 Ethernet port for data transmission into the PoE Injector.
   This port connects to a router, switch, or hub.

- **Power-In port:** The Power-In port supplies power into the Injector.

Figure 3. The Injector's Data-In and Power-In ports

- **Power + Data-Out port:** This is an RJ-45 Ethernet port and connects to the PoE Splitter's Power + Data-In port via a standard Ethernet cable. The RJ-45 Ethernet cable delivers both data and power to the PoE Splitter.

Figure 4. The Injector's Power + Data-Out port

Power over Ethernet Splitter

The Power over Ethernet Splitter has three connection ports, three LED indicators, and a voltage adjustment DIP switch.

- **Power + Data-In port:** This is an RJ-45 Ethernet port for data and power transmission into the PoE Splitter. This port connects to the PoE Injector's Power + Data-Out port via an RJ-45 Ethernet cable. The RJ-45 Ethernet cable delivers both data and power to the PoE Splitter.

Figure 5. The Splitter's Power + Data-In port

- **Data-Out port:** This is an RJ-45 Ethernet port and connects to a network device such as an IP camera via an RJ-45 Ethernet cable. This cable will transmit data to and from the network device.

- **Power-Out port:** The Power-Out port transmits DC power to a 5V, 7.5V or 12V network device via the Data Link cable that is included with the packaging.

Figure 6. The Splitter's Data-Out port, Power Out port, and DIP Switch

LED indicators: There are three LEDs on the top of PoE Splitter. The LEDs are listed according to power output status: 5V (also Power), 7.5V, or 12V.
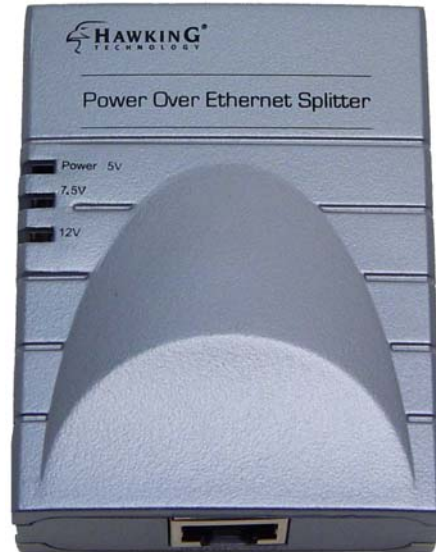

Figure 7. Power and Voltage Status LED Indicators

- **DIP switch:** The DIP switch adjusts the splitter voltage, allowing for the PoE Adapter to operate with a variety of different PoE-capable network devices, such as IP cameras, access points, and more. It has three voltage settings: 5V, 7.5V and 12V. The default setting is 12V. Before adjusting the DIP switch, please remember to **disconnect** the power from the Splitter.

Figure 8. DIP switch

This Installation section will provide you with general instructions on how to set up the HPOE1 Adapter Kit with PoE-capable devices by walking you through two examples: 1. Installing the HPOE1 Adapter Kit and connecting it to an IP camera (Hawking's HNC290G Wireless-G Network Camera will be used for this example), and 2. Installing the HPOE1 adapter kit and connecting it to an access point (Hawking's HWBA54G Wireless-G Multi-Function AP/Bridge will be used for this example).

Installing the PoE Adapter Kit and connecting it to an IP camera (IP cameras are also called "network cameras"; the terms will be used interchangeably in the instructions below.):

1. Connect the **Data-In (LAN)** port on the PoE Injector to a LAN (Ethernet) port on a router, switch, or hub using a standard RJ-45 Ethernet cable.

2. Using another RJ-45 Ethernet cable, connect the **Power + Data-Out** port on the PoE Injector to the **Power + Data-In** port on the PoE Splitter.

3. Plug the included 48V/0.4A power adapter into the PoE Injector's **48V/0.4A Power-In** port. (You do not need to plug the power adapter into the wall outlet yet.)

4. Connect the **Data-Out (LAN)** port on the PoE Splitter to the LAN (Ethernet) port on the HNC290G Network Camera using a standard RJ-45 Ethernet cable. (Note: All network cameras, whether wired or wireless, will have a LAN port.)

5. Using the **DIP switch** that sits next to the **DC-Out** port, adjust the voltage setting on the PoE Splitter to match that of the HNC290G IP camera (in this case, 12V). (In general, for any PoE-capable network device that you connect to the PoE Splitter, you must adjust the Splitter's DIP switch to match the voltage setting of the network device. If you are unsure of the network device's voltage setting, you can find it in the device's user's manual or datasheet, and sometimes on its packaging.) The PoE Splitter supports three voltage settings: 5V, 7.5V, and 12V. **The default setting is 12V**. Note: **You must** adjust the DIP switch to match the voltage setting on the network device **before** connecting the included power link cable (described in the following step) and turning the power on.

6. Next, connect one end of the included **Power Link** cable to the **DC Out** port on the PoE Splitter. Then, connect the other end of the cable to the IP Camera's power input port on the back of the unit.

7. Finally, ensure that all the connections are correct, and then plug the 48V/0.4A power adapter into the wall outlet. The installation process is now complete. If you have already installed and set up your IP camera, you can verify that the *PoE Adapter Kit–IP Camera* system is working properly by typing the camera's IP address into your web browser's address bar and viewing the live video.

Installing the PoE Adapter Kit and connecting it to an access point:

1. Connect the **Data-In (LAN)** port on the PoE Injector to a LAN (Ethernet) port on a router, switch, or hub using a standard RJ-45 Ethernet cable.

2. Using another RJ-45 Ethernet cable, connect the **Power + Data-Out** port on the PoE Injector to the **Power + Data-In** port on the PoE Splitter.

3. Plug the included 48V/0.4A power adapter into the PoE Injector's **48V/0.4A Power-In** port. (You do not need to plug the power adapter into the wall outlet yet.)

4. Connect the **Data-Out (LAN)** port on the PoE Splitter to the LAN (Ethernet) port on the HWBA54G Multi-Function AP/Bridge using a standard RJ-45 Ethernet cable. (Note: All access points will have a LAN port.)

5. Using the **DIP switch** that sits next to the **DC-Out** port on the PoE Splitter, adjust the voltage setting on the PoE Splitter to match that of the HWBA54G AP/Bridge (in this case, 12V). (In general, for any PoE-capable network device that you connect to the PoE Splitter, you must adjust the Splitter's DIP switch to match the voltage setting of the network device. If you are unsure of the network device's voltage setting, you can find it in the device's user's manual or datasheet, and sometimes on its packaging.) The PoE Splitter supports three voltage settings: 5V, 7.5V, and 12V. **The default setting is 12V**. Note: **You must** adjust the DIP switch to match the voltage setting on the network device **before** connecting the included power link cable (described in the following step) and turning the power on.

6. Next, connect one end of the included **Power Link** cable to the **DC-Out** port on the PoE Splitter. Then, connect the other end of the cable to the HWBA54G's power input port on the back of the unit.

7. Finally, ensure that all the connections are correct, and then plug the 48V/0.4A power adapter into the wall outlet. The installation process is now complete. If you have already installed and set up your access point, you can verify that the *PoE Adapter Kit–AP/Bridge* system is working properly by typing the access point's IP address into your web browser's address bar and accessing the HWBA54G's homepage.

Power over Ethernet Injector

Standard	IEEE802.3 10Base-T IEEE802.3u 100Base-TX
Connector	DC Out: Power pin: 4,5, 7,8
Network Cable	10Base-T: UTP Category 3/5e/6 cable (up to 100m) 100Base-TX: UTP Category 5e/6 cable (up to 100m)
LED	*System:* power (green)
Power Input	100 - 240V, 50 - 60Hz, 0.7A
Output Power	48VDC, 0.4A
Operating Environment	0° - 55° C
Operating Humidity	10 - 90% Humidity (non-condensing)
Dimension	0.79" x 2.28" x 2.95" (H x W x D) 2.00cm x 5.80cm x 7.50cm (H x W x D)
EMI & Safety	FCC, CE, C-Tick, VCCI

Power over Ethernet Splitter

Standard	IEEE802.3 10BASE-T IEEE802.3u 100BASE-TX
DIP switch	Three-setting output voltage switch
Connector	**Data/Power In:** Data pin 1, 2, 3, 6 Power pin: 4, 5, 7, 8 **Data Out:** Data pin 1, 2, 3, 6 Power out jack: 5V, 7.5V, 12V (Adjustable) Maximum feeding current: 1A@12V
Network Cable	10Base-T: UTP Cat.3, 4, 5 cable (up to 100m) 100Base-TX: UTP Cat.5e cable (up to 100m)
LED	Power (green): 5V, 7.5V, and 12V
Power Input	DC 48V 0.4A
Operating environment	10 - 90% Humidity (non-condensing)
Dimension	0.79" x 2.28" x 2.95" (H x W x D) 2.00cm x 5.80cm x 7.50cm (H x W x D)
EMI & Safety	FCC, CE, C-Tick, VCCI