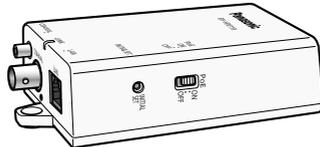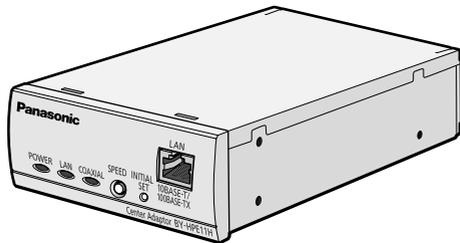# Panasonic®

Installation Guide

Coaxial - LAN Converter with PoE function |Indoor Use Only|

Model No. BY-HPE11KTCE

BY-HPE11R

BY-HPE11H

Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.

Product Overview

The BY-HPE11KTCE is a coaxial - LAN converter capable of implementing long distance, high speed digital data transmission on existing coaxial cabling with low setup costs. With the built-in PoE function, the BY-HPE11KTCE is able to supply power to Panasonic network cameras, which eliminates the need for installing power outlets for the cameras.

Note

- The PoE switch can be switched to ON or OFF.
- For information on network cameras that can be connected with BY-HPE11KTCE, see the Panasonic support site at http://panasonic.net/pss/security/products/coax/index.html.

RG-6/U coaxial cable

In this document coaxial cables with the following specifications are referred to as RG-6/U coaxial cables.

Coaxial Cable Type	DC R/300 m of Inner Conductor	Maximum Cable Length (for PoE connections)	Maximum Cable Length (for non-PoE connections)
RG-6/U	Less than 12 Ω	500 m	2,000 m

Main Features

PoE (Power over Ethernet) ready

The coaxial - LAN converter is compliant with PoE standards (IEEE 802.3af), and contains a power supplying device. PoE can be used to supply power to Panasonic network cameras, which eliminates the need for installing power outlets for the cameras.

Use over long distances

The coaxial - LAN converter can be used for distances of up to 500 m[1] for PoE connections, and 2 km for non-PoE connections. (When used with RG-6/U coaxial cable.)

High-speed transmission

The coaxial - LAN converter is capable of transmission speeds of 35 Mbps or over for TCP[2], and 45 Mbps or over for UDP connections. (When used with RG-6/U coaxial cable, and for distances under 2 km.)

No setup required

Connections can be established by simply connecting the coaxial cable to the coaxial - LAN converter.

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[1]   When connected to a Panasonic network camera. For other cameras the connection distance is 300 m.
[2]   Measured using Linux® FTP.

Other Information

About the user manuals

- There are 2 sets of operating instructions for this unit as follows.
    - Installation Guide: Explains how to install and connect devices.
    - Operating Instructions (PDF): Explains how to perform the settings and how to operate this unit.

    Adobe® Reader® is required to read these operating instructions (PDF) on the provided CD-ROM. When the Adobe Reader is not installed on the PC, download the latest Adobe Reader from the Adobe web site and install it.
- The BY-HPE11R adaptor is called the camera adaptor and the BY-HPE11H adaptor is called the center adaptor in this document.

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6. ANY CLAIM OR ACTION FOR DAMAGES, BROUGHT BY ANY PERSON OR ORGANIZATION BEING A PHOTOGENIC SUBJECT, DUE TO VIOLATION OF PRIVACY WITH THE RESULT OF THAT SURVEILLANCE-CAMERA'S PICTURE, INCLUDING SAVED DATA, FOR SOME REASON, BECOMES PUBLIC OR IS USED FOR THE PURPOSE OTHER THAN SURVEILLANCE;
7. LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE.

Network security

As you will use this unit connected to a network, your attention is called to the following security risks.

① Leakage or theft of information through this unit
② Use of this unit for illegal operations by persons with malicious intent
③ Interference with or stoppage of this unit by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this unit in a network secured by a firewall, etc.
- If this unit is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated anti-virus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized user name and password.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information, FTP server information and DDNS server information.
- After the unit is accessed by the administrator, make sure to close the browser.
- Change the administrator password periodically.
- Do not install this unit in locations where this unit or the cables can be destroyed or damaged by persons with malicious intent.

Security between the camera adaptor and center adaptor

- Data sent and received between camera and center adaptors employs AES 128-bit encryption, however we cannot guarantee that data will not be intercepted by a third party.

Other Information

- For security, reset the unit when sending the unit for servicing, discarding the unit, or giving the unit to someone else (see 2 Resetting the Unit in the Operating Instructions on the CD-ROM).
- The unit does not have a firewall feature. To prevent unauthorized external access to the network, we recommend performing the following procedures.
  - Setup security measures for the router and computers accessing the network.
  - Change the default password on the adaptor's maintenance screen (see 3.2.3 Changing Adaptor Settings - Changing the adaptor's password in the Operating Instructions on the CD-ROM).

Included Items

Confirm that the following items are included in the unit's packaging.

- Installation Guide (this document) (1 pc.)
- Bedienungsanleitung (German Operating Instructions) (1 pc.)
- CD-ROM[*1] (1 pc.)
- Safety Wire (1 pc.)
- BNC Connector Cover (2 pcs.)
- Screw (3 pcs.): For the safety wire and BNC connector covers
- Ferrite Core (2 pcs.)
- AC Cord (2 pcs.)

For use in countries/areas other than the United Kingdom	For use in the United Kingdom
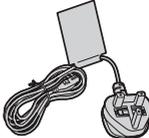
[*1] Contains the documentation including the Operating Instructions.

For Your Safety

To prevent severe injury and loss of life/property, read this section carefully before using the unit to ensure proper and safe operation of your unit.

WARNING

Consult an authorized dealer for mounting

- Experience and knowledge are required to perform mounting of the unit. Incorrect mounting can cause damage to the unit, fire, electric shock, or injury. Make sure to consult an authorized dealer for mounting.

Do not damage the AC cord or power plug

- Do not allow the AC cord or plug to be damaged, placed near heat emitting devices, excessively pulled, bent or placed under heavy objects. Using damaged AC cords or plugs can result in the risk of fire or electric shock. Contact an authorized service center for AC cord and plug repairs.

Do not use the unit if it does not work normally

- Unplug the unit from the power outlet if it emits smoke, an abnormal smell or makes unusual noise. Consult an authorized service center for repairs.

Do not disassemble or repair the unit

- To reduce the risk of electric shock or fire, do not disassemble the unit. Contact an authorized service center when service is required.

Use only the power source specified for the unit

- Overloading the unit by having many loads on one electrical outlet, etc. may cause excessive heat resulting in fire.

Completely insert the power plug into the power outlet

- Failure to do so may cause electric shock and/or excessive heat resulting in a fire. Do not use damaged power plugs or power outlets.

Regularly remove any dust, etc. from the power plug

- Regularly remove any dust, etc. from the power plug by pulling it from the power outlet, then wiping with a dry cloth. Accumulated dust may cause an insulation defect from moisture, etc., resulting in a fire.

Do not bring metal objects near the power outlet slots

- This may result in electric shock or fire.

Do not hold the power plug by the metal parts

- This may result in electric shock or fire.

Never touch the power plug with wet hands

- This may result in electric shock.

Do not touch the unit, LAN cable, coaxial cable, AC cord, or power plug during thunderstorms
• This may result in electric shock.

Do not use the included AC cord with other devices
• This may result in electric shock or fire.

Only use the included AC cord
• Using other AC cords may result in electric shock or fire.

Place the unit securely on a stable, level surface
• Serious damage and/or injury may result if the unit falls.

Do not install the unit in a dusty or moist place
• This may result in electric shock or fire.

Never push any objects into the unit or spill any liquids on the unit
• This may result in electric shock or fire. Disconnect the AC cord and contact an authorized service center if any foreign objects or liquids enter the unit.

Regularly check the unit
• Rusted brackets or screws may cause the unit to fall causing serious damage and/or injury. Consult an authorized dealer for checks.

Mount the unit to secure locations that can support the weight of the unit
• Serious damage and/or injury may result if the unit falls. Reinforce the mounting area if it has insufficient strength to secure the unit.

Make sure to use the safety wire
• Attach the safety wire in a position so that if the camera adaptor were to become detached, it would not fall on nearby people.

Do not use the unit where it can be exposed to flammable or explosive gasses
• This may cause the unit to explode resulting in injury.

Do not mount the unit where it can be exposed to vibrations
• This may cause the unit to fall resulting in injury.

Do not use the unit where it can be exposed to corrosive gas or salty conditions
• This may cause the unit parts to degrade and the unit may fall resulting in damage and/or injury.

Do not drop, or expose the unit to strong shaking
• This may result in electric shock or fire.

Turn the power off before performing wiring

- This may result in electric shock, or result in fire from wiring shorts or incorrect wiring.

Only use mounting brackets made for the unit

- Serious damage and/or injury may result if the unit falls.

Do not damage coaxial cables, insert objects into the conductor, or connect coaxial cables with incomplete relays

- If water or other objects enter the conductor, or coaxial cables with incomplete relays are connected, it may result in electric shock or fire. Disconnect the AC cord and contact an authorized service center if there is any damage to the coaxial cables.

Do not damage existing wires or pipes when making holes for mounting or wiring

- This may result in earth leakage, electric shock, or fire.

Do not install or use the unit near medical equipment

- High-frequency signals emitted from the unit may affect the operation of medical equipment and cause malfunctions.

Do not expose the unit to rain or any type of moisture

- To prevent the risk of fire or electrical shock, do not place objects such as cups or vases near the unit. If the unit is exposed to moisture, disconnect the AC cord and contact an authorized service center.

Do not touch the core of the coaxial cable

- A maximum of DC 60 V is applied to the coaxial cable. This may result in electric shock.

Do not perform wiring or installation during thunderstorms

- This may result in electric shock or fire.

Secure screws with the specified torque

- Serious damage and/or injury may result if the unit falls.

CAUTION

Disconnect the AC cord of the center adaptor if the unit will not be used for long periods of time or when performing care and cleaning

- Leaving the AC cord connected when the unit is not used for long periods of time or when performing care and cleaning may result in earth leakage, electric shock, or injury.

Do not mount the unit to ceilings or walls made of soft materials

• Do not mount the unit to soft ceilings or walls such as plasterboard, ALC (aerated light-weight concrete), concrete blocks, or any surfaces under 25 mm thickness. Injury may result if the unit falls.

Do not pull cables or apply excessive force to connectors

• This may damage the cables or connectors, and result in electric shock.

Do not connect other devices to the BNC connector of the unit

• This may damage the unit.

Do not expose the unit to fire or naked flames

• This may result in fire.

The AC cord is used as the main disconnect device

• Ensure that the power outlet is installed near the unit and is easily accessible.

Do not play the included CD-ROM in an audio CD player

• Ear-splitting volume may hurt your ears and damage the CD player's speakers.

Important Safety Instructions

When using this unit, basic safety precautions should always be followed to reduce the risk of fire, electric shock, or personal injury.

1. Do not use this unit near water for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement or near a swimming pool.
2. Avoid handling or installing the unit, connecting wiring, or touching the AC cord, power plug, LAN cable, or coaxial cable during an electrical storm.
3. Do not use the unit in the vicinity of a gas leak.
4. Use only the AC cord indicated in this manual.

SAVE THESE INSTRUCTIONS

WEEE Information

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.
For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.
Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

General Precautions

Follow the instructions written in For Your Safety (see page 8) and Important Safety Instructions (see page 12) together with the instructions written below.

1. **The unit is intended for indoor use only and should not be mounted outdoors.**
2. The unit uses the same high-frequency signals as used by the radio signals of amateur radio, shortwave broadcasting, aviation radio, and marine radio. Therefore operational interference may occur if the unit is used in proximity to devices that transmit these radio signals.
3. **Do not connect the camera adaptor (BY-HPE11R) to communications carrier equipment such as rental modems.**
4. **Follow the following precautions in order to maintain product performance over long periods of time.**
   - Do not use the unit in areas with high temperatures or humidity for long periods of time. Use in these areas can degrade parts which can shorten the life-span of the unit. We recommend areas that have temperatures of 35 °C or lower.
   - Do not install the unit in places that can be directly exposed to heat sources.
5. **Proper handling of the unit**
   - Do not drop, or expose the unit to strong vibrations or shaking. This may cause malfunctions.
6. **Take precautions for when reselling, disposing, or sending the unit for repairs.**
   - Take adequate precautions when handing the unit over to third parties.
7. **Care and cleaning for the unit**
   - Perform cleaning and care after disconnecting the center adaptor from the power outlet. Do not use benzine, thinner, or any other abrasive powders when cleaning. This may change the color of the unit cases.
8. **Cleaning stains from the unit**
   - Wipe stained areas with a damp soft cloth.

For FRG Users (For Germany Only)

- Machine noise information regulation - 3.GPSGV, the maximum sound pressure level is 70 dB(A) or less, in conformity with EN ISO 7779.
- This device is not intended for use in the direct field of view at visual display workplaces. To avoid incommoding reflexions at visual display workplaces this device must not be placed in the direct field of view.

Precautions for Installation

All electrical wiring should be performed by a qualified electrician.
Consult an authorized dealer for installation.

1. **The unit is intended for indoor use only**
   - The unit cannot be used outdoors. Do not install the unit in areas that are exposed to direct sunlight for long periods of time, or areas near heaters or air conditioners. Installing the unit in such areas may cause malfunctions and cause the unit to change shape or color. Do not use the unit when they have been exposed to water or moisture.
2. **Do not install or use the unit near medical equipment**
   - High-frequency signals emitted from the unit may affect the operation of medical equipment and cause malfunctions.
3. **Installation locations**
   - Do not install the unit in the following locations:
     – where the unit can be directly exposed to rain or water (including under eaves)
     – areas where chlorine is used such as pools
     – in locations subject to humidity, dust, steam and oil smoke
     – where the unit can be exposed to solvents or flammable gas
     – where the unit can be exposed to radiation or X-rays, or interference from magnetic devices or devices that use strong radio signals
     – where the unit can be exposed to corrosive gas such as from the sea
     – where the temperature or humidity exceeds the operating environment specifications for the unit
       Camera Adaptor (BY-HPE11R):
       - Temperature: -10 °C to +50 °C
       - Humidity: 20 %–90 %
       Center Adaptor (BY-HPE11H):
       - Temperature: 0 °C to +50 °C
       - Humidity: 20 %–85 %
     – where the unit can be exposed to vibrations such as in cars or boats (the unit is not designed to be installed in vehicles)
     – where the unit can be exposed to sudden changes in temperatures, such as near air conditioners or near doorways
   - **Uninstall the unit if it is no longer used.**
4. **Precautions before installations**
   - Use the screws with the specifications shown on page 24 when mounting the camera adaptor to a ceiling or wall. Screws are not included. Use screws that are appropriate for the material of the ceiling or wall.
   - When mounting the camera adaptor to a ceiling or wall (see page 24), do not drive the screws into a soft material. Drive the screws into a secure, 25 mm thick area of the ceiling or wall, such as a crossbeam, otherwise the camera adaptor may fall. If there is no crossbeam, place a board on the other side of the ceiling or wall to make sure the camera adaptor is securely mounted.
   - When mounting a camera adaptor on a concrete or mortar ceiling or wall, use a drill and anchors (customer-provided, body diameter 4 mm) and make holes using the following procedure.

    i. Mark points where you are going to make holes (2 places) according to the position of the camera adaptor.
    ii. Mark a point where you are going to make a hole (1 place) for the safety wire.
    iii. Make holes in the areas that you marked with an electric drill.
      • Mortar ceilings break easily when drilling. Be careful of pieces of mortar which may become loose and fall.

Drill for concrete (in case of tile, use a drill for tile)
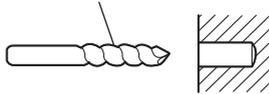
Caulk to waterproof
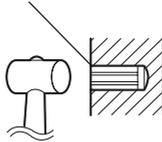
    iv. Insert the anchors (customer-provided) into the holes and push them inside with a hammer.
    v. Secure the camera adaptor and safety wire.
  • Mount the camera adaptor to a secure area and make sure that the anchors and screws are secured.

5. Inserting screws
  • Use screws that are appropriate for the material of the ceiling, wall, or rack.
  • Do not use impact drills. Impact drills may damage the screws.
  • Secure screws in a straight line into the ceiling, wall, or rack. Confirm that screws are flush with the surface that they are secured to.

6. Using the safety wire
  • Attach the safety wire in a position so that if the camera adaptor were to become detached, it would not fall on nearby people.

7. Coaxial cable connections
  • Disconnect the coaxial cable from all devices and measure the insulation resistance of the coaxial cable (new or existing) before making connections. Insulation resistance value: 1 MΩ or more for DC 500 V
  • Confirm the length of the coaxial cable when using the PoE function. The maximum length is 500 m when using RG-6/U coaxial cable (with loop resistance at 20 Ω or less).
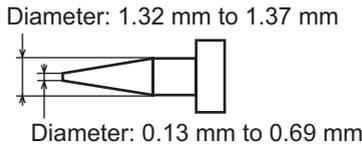
RG-6/U coaxial cable

Coaxial Cable Type	DC R/300 m of Inner Conductor	Maximum Cable Length (for PoE connections)	Maximum Cable Length (for non-PoE connections)
RG-6/U	Less than 12 Ω	500 m	2,000 m

- We recommend RG-6/U coaxial cable.
- The performance of the coaxial cable may be affected if it is relayed.
- Use only the following recommended BNC plug when connecting coaxial cables to the BNC connectors of the unit.
  – Applicable plug: MIL-C39012C, MIL-C39012/16F, or BS CECC2212: 1981 (Suffixes attached to the standards may be updated.)

BNC plug
(customer-provided)

Coaxial cable
(customer-provided)
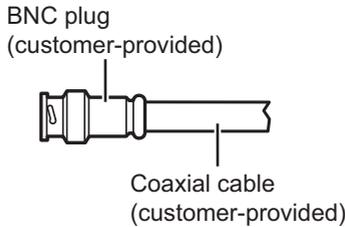
  – Tip dimensions inside the recommended BNC plug

Diameter: 1.32 mm to 1.37 mm

Diameter: 0.13 mm to 0.69 mm

IMPORTANT
- Use a suitable plug. Using a non-specified plug may cause a bad connection or cause damage to the BNC connector.

8. Mounting and connections
- Do not mount camera adaptors above or below other camera adaptors. This can cause transmission interference. When mounting several camera adaptors in the same area, mount them side by side each other.
- When connecting the coaxial cable to the unit, make sure that no other devices are connected to the coaxial cable. Connecting the coaxial cable to the unit when there are other devices connected (such as an analog CCTV camera), may cause damage to the connected device.
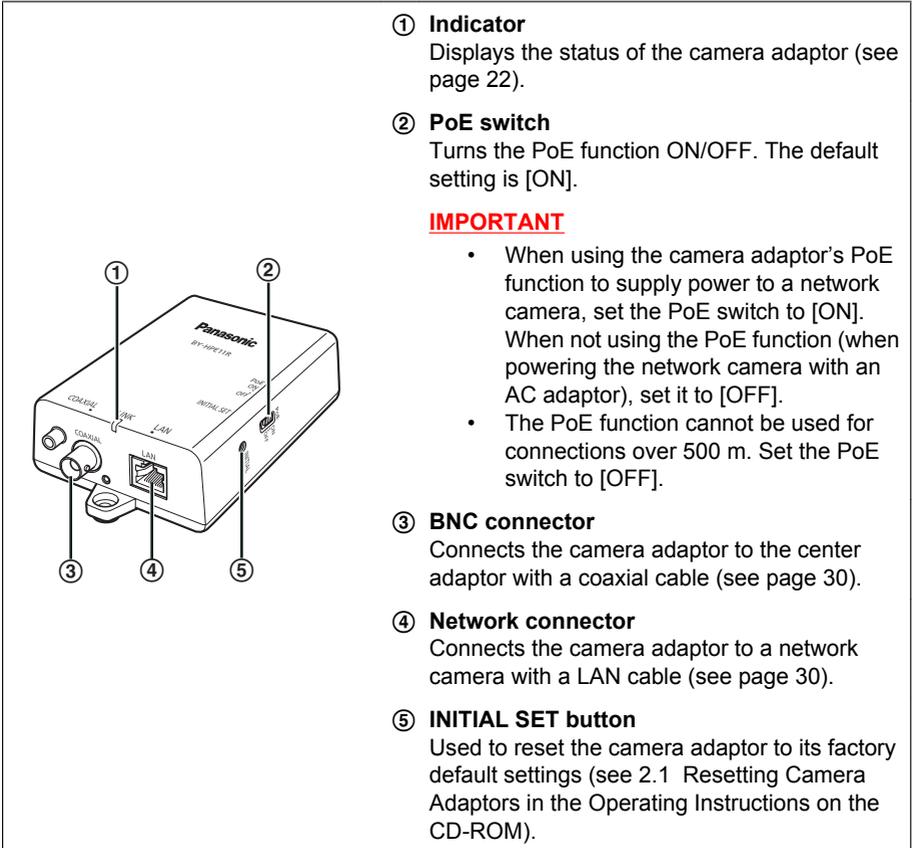
Table of Contents

1 Main Unit

1.1 Camera Adaptor (BY-HPE11R)

Front view

① **Indicator**
Displays the status of the camera adaptor (see page 22).

② **PoE switch**
Turns the PoE function ON/OFF. The default setting is [ON].

IMPORTANT

- When using the camera adaptor's PoE function to supply power to a network camera, set the PoE switch to [ON]. When not using the PoE function (when powering the network camera with an AC adaptor), set it to [OFF].
- The PoE function cannot be used for connections over 500 m. Set the PoE switch to [OFF].

③ **BNC connector**
Connects the camera adaptor to the center adaptor with a coaxial cable (see page 30).

④ **Network connector**
Connects the camera adaptor to a network camera with a LAN cable (see page 30).

⑤ **INITIAL SET button**
Used to reset the camera adaptor to its factory default settings (see 2.1 Resetting Camera Adaptors in the Operating Instructions on the CD-ROM).
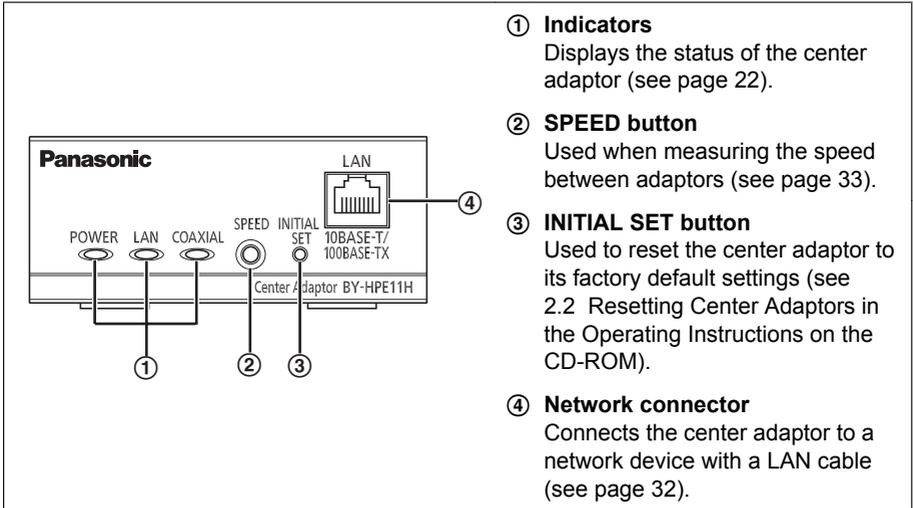
Rear view

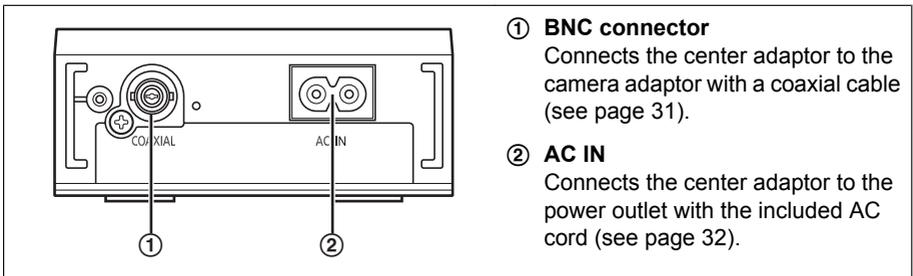① Used when attaching the camera adaptor to a ceiling or wall with screws (see page 24).

② Used when attaching the safety wire (see page 23).

③ Used when attaching the camera adaptor to screws inserted into a wall.
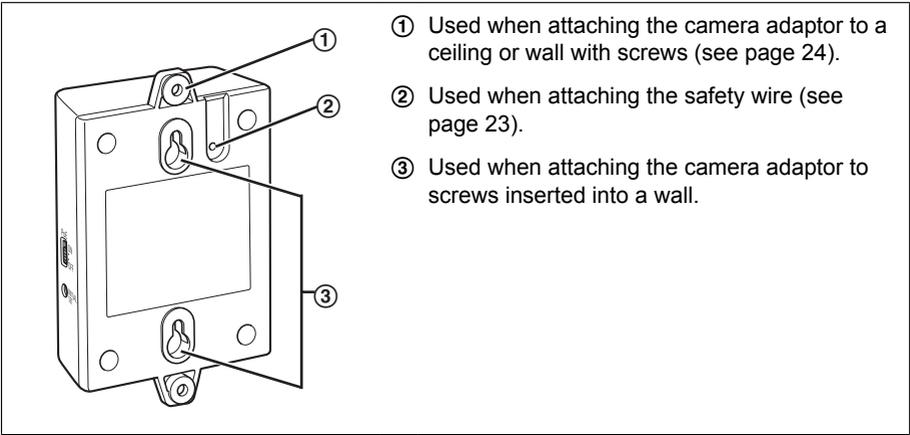
1.2 Center Adaptor (BY-HPE11H)

Front view

① **Indicators**
Displays the status of the center adaptor (see page 22).

② **SPEED button**
Used when measuring the speed between adaptors (see page 33).

③ **INITIAL SET button**
Used to reset the center adaptor to its factory default settings (see 2.2 Resetting Center Adaptors in the Operating Instructions on the CD-ROM).

④ **Network connector**
Connects the center adaptor to a network device with a LAN cable (see page 32).

Rear view

① **BNC connector**
Connects the center adaptor to the camera adaptor with a coaxial cable (see page 31).

② **AC IN**
Connects the center adaptor to the power outlet with the included AC cord (see page 32).

1.3 Understanding the Indicators

The light indicators change depending on the operating status of the camera and center adaptors.

Camera adaptor

Indicator	Light Status	Meaning
LINK	Green (lit)	The camera adaptor is connected to the center adaptor.
	Orange (lit)	The camera adaptor is activating.
	Red (lit)	The camera adaptor is malfunctioning. Contact an authorized service center.
	Off	The center adaptor is not connected to the power outlet, or the coaxial cable is not connected.

Center adaptor

Indicator	Light Status	Meaning
POWER	Green (lit)	The center adaptor is active.
	Green (flashing)	The center adaptor may be connected to a device other than the camera adaptor with the coaxial cable. Check the connection with the camera adaptor.
	Off	The center adaptor is not connected to the power outlet.
LAN	Green (lit)	A network device is connected.
	Green (flashing)	Sending/receiving data from a network device.
	Orange (lit)	A network device is not connected, or the connected network device is not connected to the power outlet.
	Off	The center adaptor is not connected to the power outlet.
COAXIAL	Green (lit)	The camera adaptor is connected to the center adaptor.
	Red (lit)	The center adaptor is malfunctioning. Contact an authorized service center.
	Off	The center adaptor is not receiving power, or the coaxial cable or camera adaptor is not connected.

2   Mounting the Unit

2.1   Mounting the Camera Adaptor

Please read the following information before mounting the camera adaptor.

IMPORTANT

- Mount the camera adaptor to a secure area.
- Mount the camera adaptor and safety wire to secure part of the ceiling or wall such as a crossbeam.
- Make sure you attach the safety wire when mounting the camera adaptor on a ceiling or wall to prevent the adaptor from falling. Consult an authorized dealer for mounting.
- Do not mount camera adaptors above or below other camera adaptors. This can cause transmission interference. When mounting several camera adaptors in the same area, mount them side by side each other.
- The pull-out strength of the installation area must be at least 294 N (30 kgf) per screw.

1. Secure the safety wire to the camera adaptor with the screw (included). (Recommended torque 0.4-0.8 N·m {4.1-8.2 kgf·cm})

Screw
(length: 10 mm,
body diameter: 2.6 mm)
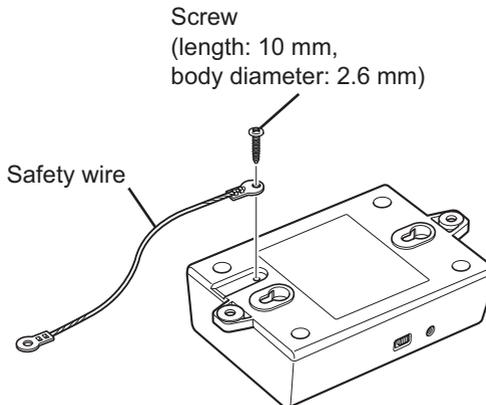
Safety wire

2. Secure the camera adaptor to the wall or ceiling using screws (customer-provided, length: 20 mm, body diameter: 4 mm).
   • Use screws that are appropriate for the material of the ceiling or wall.

Screw
(customer-provided,
length: 20 mm,
body diameter: 4 mm)
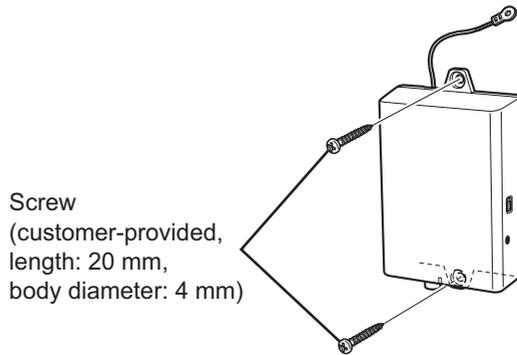
3. Secure the safety wire to the ceiling or wall using a screw (customer-provided, length: 20 mm, body diameter: 4 mm).
   • Use screws that are appropriate for the material of the ceiling or wall.
   • Attach the safety wire in a position so that if the camera adaptor were to become detached, it would not fall on nearby people.

Screw
(customer-provided,
length: 20 mm,
body diameter: 4 mm)

Safety wire
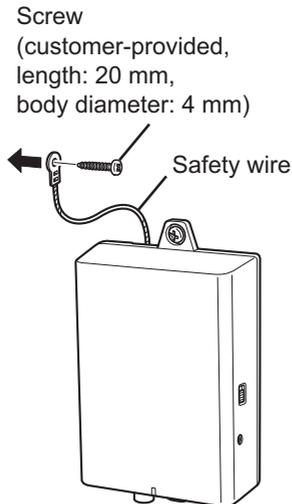
2.2 Mounting the Center Adaptor to a Rack

By using the Rack Mount Connecting Fitting (sold separately), 3 or 4 connected center adaptors can be mounted to a rack.
Prepare the Rack Mount Connecting Fitting (BY-HCA10CE), which includes the following items.
– Mounting bracket (2 pcs.)
– Underside continuous connecting bracket (2 pcs.)
– Screw (Flat-head M3×6: 32 pcs.)
– Screw (M3×6: 6 pcs.)

IMPORTANT
• Make sure to use the screws included with the BY-HCA10CE.

Mounting 3 or 4 center adaptors to a rack

1. Connect the center adaptors together using the BY-HCA10CE underside continuous connecting brackets with the screws included with the BY-HCA10CE.
• **Connecting 3 center adaptors**
Place a center adaptor on both ends of the underside continuous connecting brackets.
(Recommended torque 0.4-1.0 N·m {4.1-10.2 kgf·cm})

Screw (Flat-head M3x6: 24 pcs.)
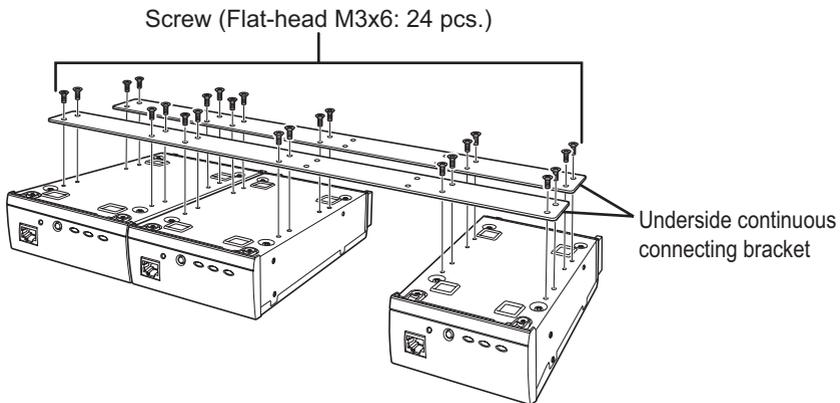
Underside continuous connecting bracket

•   **Connecting 4 center adaptors**
    (Recommended torque 0.4-1.0 N·m {4.1-10.2 kgf·cm})

Screw (Flat-head M3x6: 32 pcs.)

Underside continuous
connecting bracket
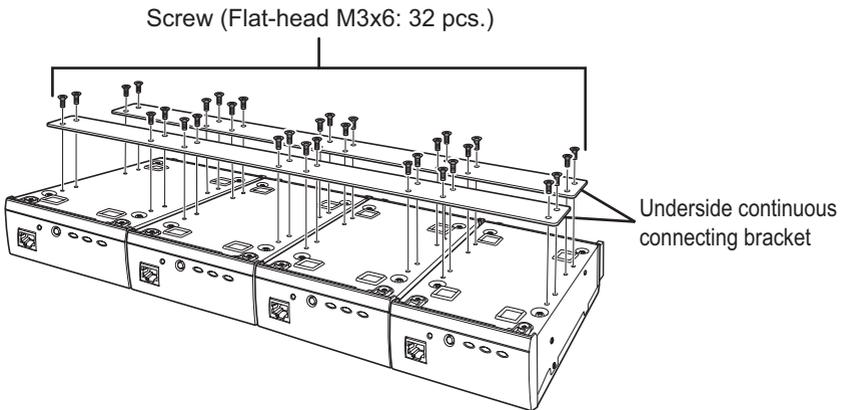
2. Secure the BY-HCA10CE mounting brackets to both sides of the connected center
adaptors with the screws included with the BY-HCA10CE.
(Recommended torque 0.4-1.0 N·m {4.1-10.2 kgf·cm})

Mounting bracket

Screw
(M3x6: 6 pcs.)

Mounting bracket
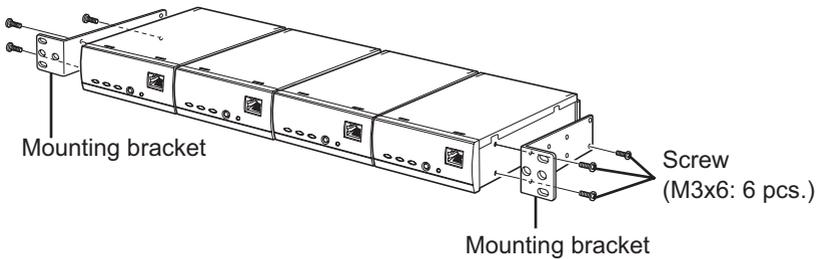
3. Secure the connected center adaptors to the rack.
   - Securely mount the center adaptors to the rack with the rack mounting screws (customer-provided, nominal diameter 5 mm tapping).
   - We recommend using a fan or other device to keep the temperature in the rack under 30 °C.
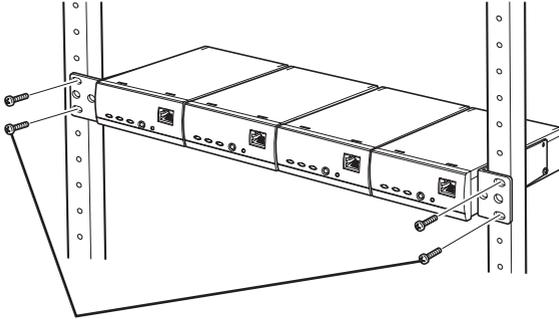
Rack mounting screw
(customer-provided,
nominal diameter 5 mm tapping)

IMPORTANT
   - Take measures to ensure that the temperature in the rack does not exceed 45 °C.
   - When mounting center adaptors to the rack, leave 1U (44 mm) or more clearance above and below the adaptors.

3 Connecting the Unit

3.1 Connection Example
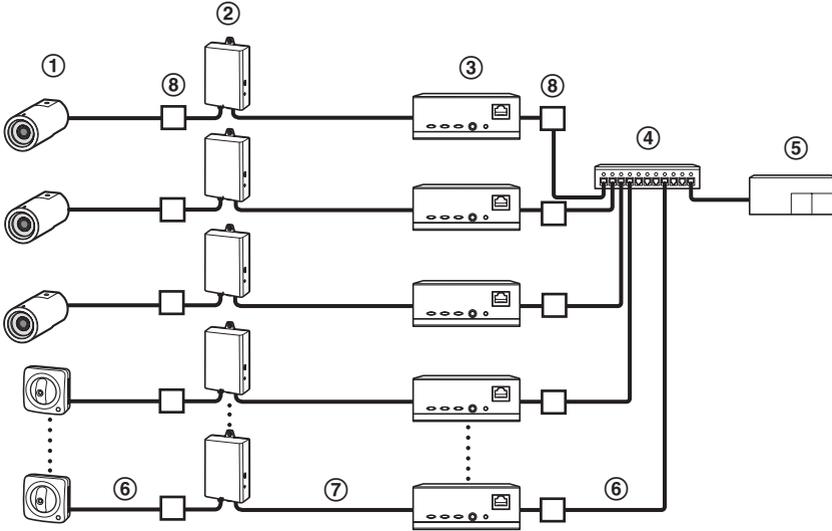
① Network camera
② Camera adaptor
③ Center adaptor
④ Switching hub (or similar device)
⑤ Network device
⑥ LAN cable
⑦ Coaxial cable
⑧ Ferrite core
– Connect network cameras and camera adaptors with LAN cables.
– Connect camera adaptors and center adaptors with coaxial cables.
– Connect center adaptors and network devices with LAN cables.
• We recommend Cat-5e or higher cable for the LAN cable. When using PoE to supply power to the network camera from the camera adaptor, we recommend using 100 Ω balanced LAN cable that complies to the ISO/IEC 11801-2002 (IEEE802.3af Annex 33B).

IMPORTANT
  • Use all 4 pairs (8 pins) of the LAN cable.
  • The maximum length of LAN cable that can be used is 100 m.

- When reconnecting the LAN cable, wait for at least 2 seconds after disconnecting before reconnecting. If the LAN cable is quickly disconnected and then reconnected, the PoE function may not be able to supply power.
- When connecting to network cameras not made by Panasonic, the PoE function may not be able to supply power using cross-pair LAN cables. Confirm the specifications of the network camera used before installation.
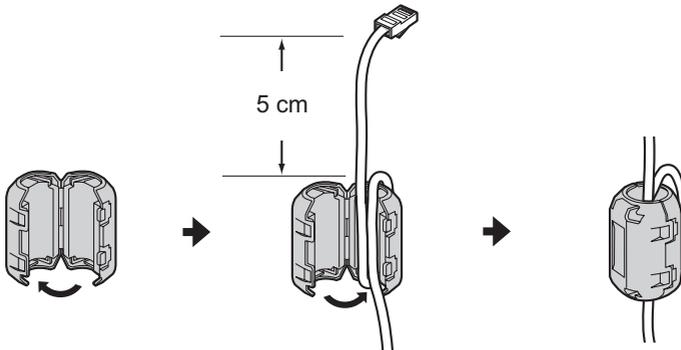
3.2 Connections

Before proceeding with the connections, turn off the power of the unit and other network devices that will be connected.
Prepare the necessary peripheral equipment and cables.
The LAN cable and coaxial cable are customer-provided.

IMPORTANT
- Connect the center adaptor to the power outlet only after completing all the connections.
- Make sure to attach the ferrite core (included).

1. For each adaptor, wrap the LAN cable (Cat-5e or higher) once around the ferrite core (included), then close the case of the ferrite core. Attach the ferrite core 5 cm away from the adaptors' network connector.


5 cm

2. Connect a LAN cable (Cat-5e or higher) that is wrapped around a ferrite core to the camera adaptor and network camera.
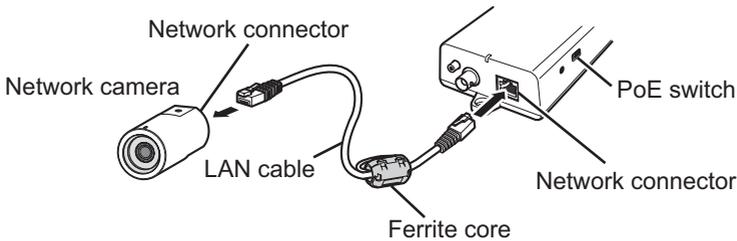
IMPORTANT
- Turn the PoE switch to [ON] when using the PoE function to supply power to a network camera. When using an AC adaptor to supply power to a network camera, turn the PoE switch to [OFF].
- The PoE function cannot be used for connections over 500 m. Set the PoE switch to [OFF].

3. First pass the coaxial cable through the included BNC connector cover, then connect the coaxial cable to the BNC connector of the camera adaptor.
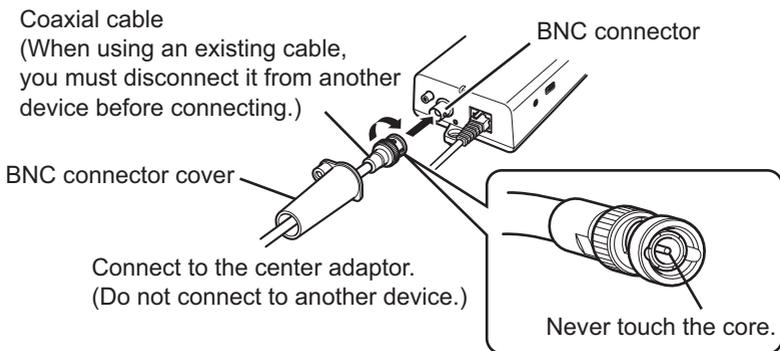
IMPORTANT
- When connecting the coaxial cable to the unit, make sure that no other devices are connected to the coaxial cable. Connecting the coaxial cable to the unit when there are other devices connected (such as an analog CCTV camera), may cause damage to the connected device.
- When using existing coaxial cables, disconnect other devices that are connected to the coaxial cable before connecting to the unit.
- Measure the insulation resistance of the coaxial cable (new or existing) before making connections.

Insulation resistance value: 1 MΩ or more for DC 500 V
- Confirm the length of the coaxial cable when using the PoE function. The maximum length is 500 m when using RG-6/U coaxial cable (with loop resistance at 20 Ω or less).
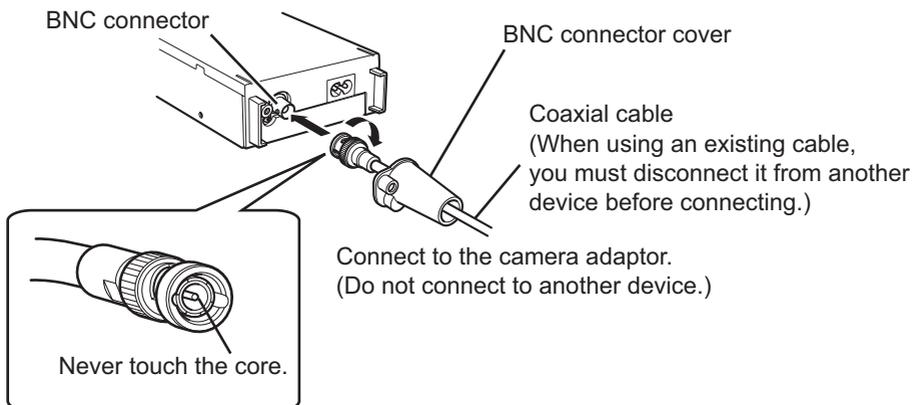
RG-6/U coaxial cable

Coaxial Cable Type	DC R/300 m of Inner Conductor	Maximum Cable Length (for PoE connections)	Maximum Cable Length (for non-PoE connections)
RG-6/U	Less than 12 Ω	500 m	2,000 m

4. Secure the BNC connector cover with the included screw to the camera adaptor. (Recommended torque 0.4-0.8 N·m {4.1-8.2 kgf·cm})

Screw
(length: 10 mm,
body diameter: 2.6 mm)

BNC connector cover
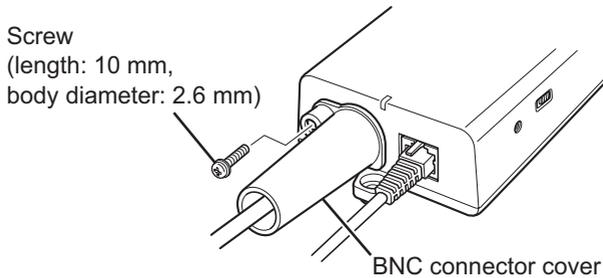
5. First pass the coaxial cable through the included BNC connector cover, then connect the coaxial cable to the BNC connector of the center adaptor.


BNC connector

BNC connector cover

Coaxial cable
(When using an existing cable, you must disconnect it from another device before connecting.)

Connect to the camera adaptor.
(Do not connect to another device.)

Never touch the core.

6. Secure the BNC connector cover with the included screw to the center adaptor.
(Recommended torque 0.4-0.8 N·m {4.1-8.2 kgf·cm})

BNC connector cover

Screw
(length: 10 mm,
body diameter: 2.6 mm)
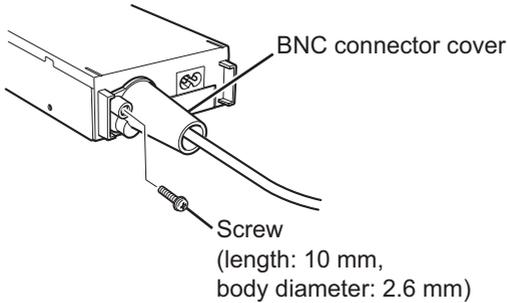
7. Connect a LAN cable (Cat-5e or higher) that is wrapped around a ferrite core to the
center adaptor and network device.

Network connector

Network device

Network connector

LAN cable   Ferrite core
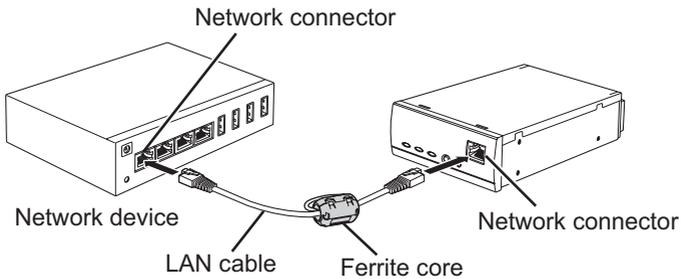
8. Connect the AC cord to the AC IN jack of the center adaptor, then plug the AC cord
into the power outlet.

AC IN

To the power outlet

AC cord (included)
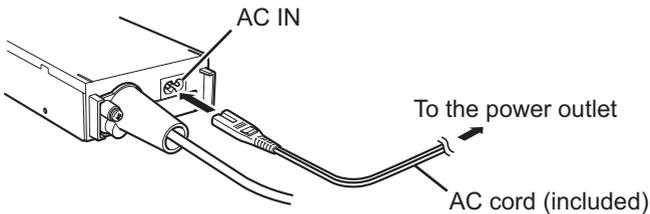
- Use the appropriate AC cord for where you use the unit.
- When you operate the center adaptor, the power outlet should be near the center
  adaptor and easily accessible. To prevent the AC cord from being disconnected
 if it is pulled, do not place objects near the power outlet.

9. Turn the power on for the network cameras and network devices, then check the indicators of the adaptors.

Green

POWER LAN COAXIAL

Green
Green
Green
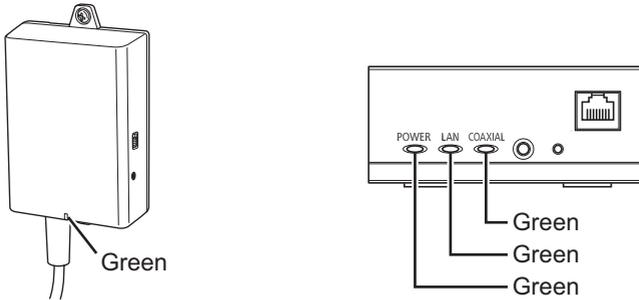
10. Press the center adaptor's SPEED button for about 1 second.

SPEED button
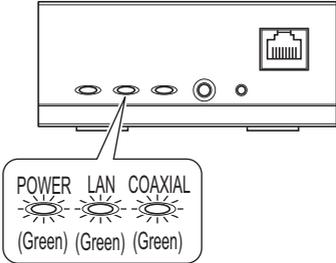
POWER   LAN   COAXIAL
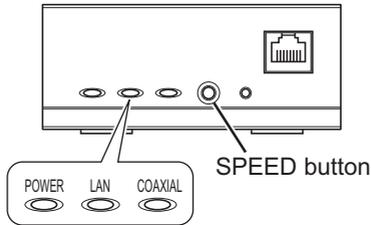
- The transmission speed between the camera adaptor and center adaptor will be measured. During measurements, the indicators of the center adaptor will be lit in the following order.

POWER	LAN	COAXIAL
(Green)		

➡

POWER	LAN	COAXIAL
	(Green)	

➡

POWER	LAN	COAXIAL
		(Green)
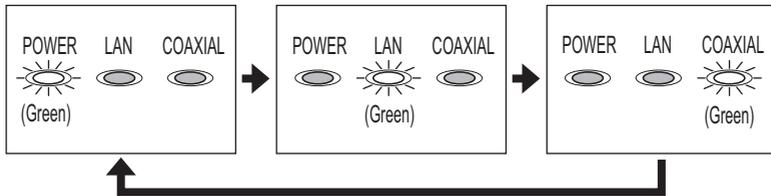
11. Confirm that all 3 of the center adaptor's indicators are lit (for about 6 seconds).

Panasonic Corporation

http://panasonic.net

Importer's name and address to follow EU rules:

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Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, Germany

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