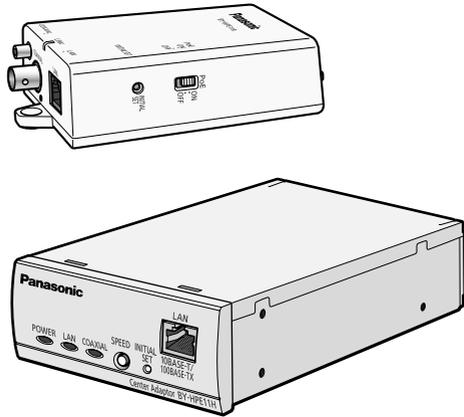


# Panasonic<sup>®</sup>

## Operating Instructions

Coaxial - LAN Converter with PoE function Indoor Use Only

Model No. **BY-HPE11KTA**



### Attached Installation Guide

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

# Introduction

## 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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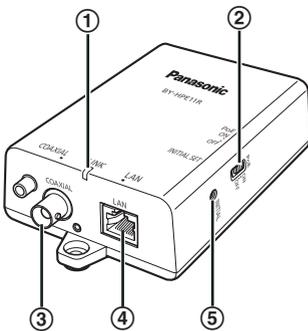
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# 1 Main Unit

## 1.1 Camera Adaptor (BY-HPE11R)

### Front view



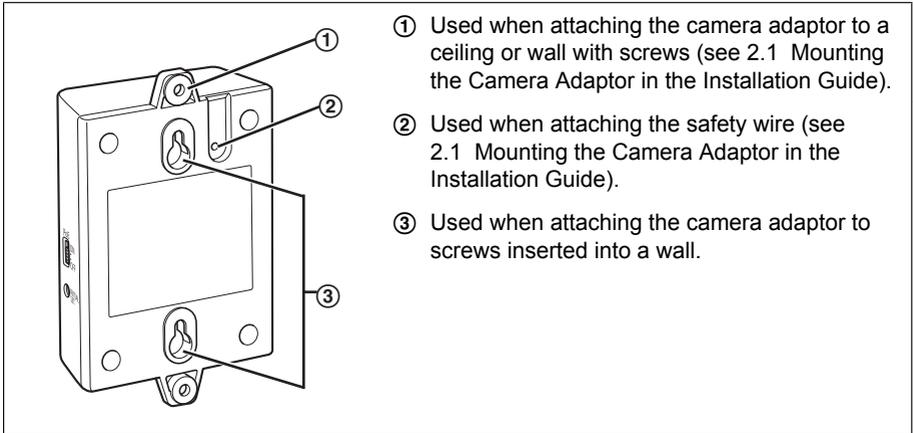
- ① **Indicator**  
Displays the status of the camera adaptor (see page 7).
- ② **PoE switch**  
Turns the PoE function ON/OFF. The default setting is [ON].

### **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 (1,640 feet 5 inches). Set the PoE switch to [OFF].

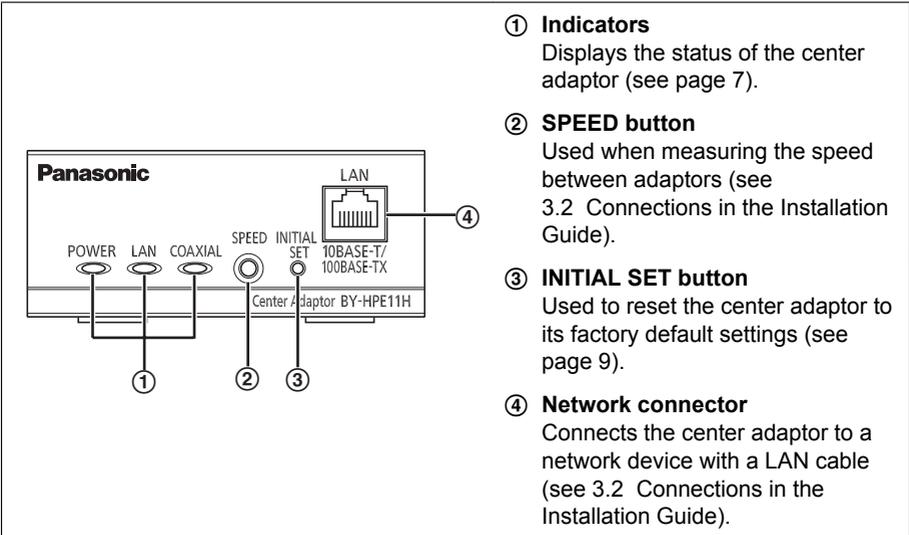
- ③ **BNC connector**  
Connects the camera adaptor to the center adaptor with a coaxial cable (see 3.2 Connections in the Installation Guide).
- ④ **Network connector**  
Connects the camera adaptor to a network camera with a LAN cable (see 3.2 Connections in the Installation Guide).
- ⑤ **INITIAL SET button**  
Used to reset the camera adaptor to its factory default settings (see page 8).

## Rear view

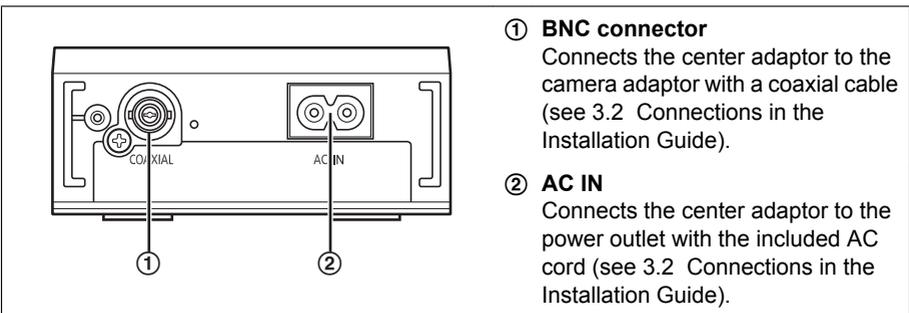


## 1.2 Center Adaptor (BY-HPE11H)

### Front view



### Rear view



## 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.

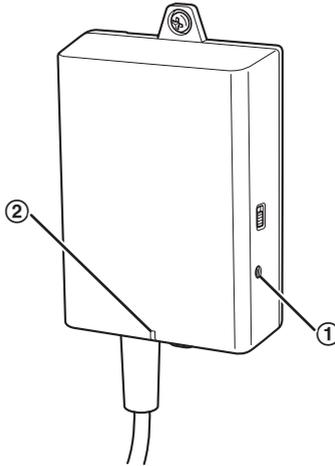
# 2 Resetting the Unit

Reset the unit when reselling, disposing, or sending it for repairs.

## 2.1 Resetting Camera Adaptors

Reset the camera adaptor when it is connected to the center adaptor with a coaxial cable, and the center adaptor is connected to the power outlet.

1. Press the camera adaptor's INITIAL SET button (①) for about 3 seconds with a pointed object.
  - The indicator (②) will start flashing green.



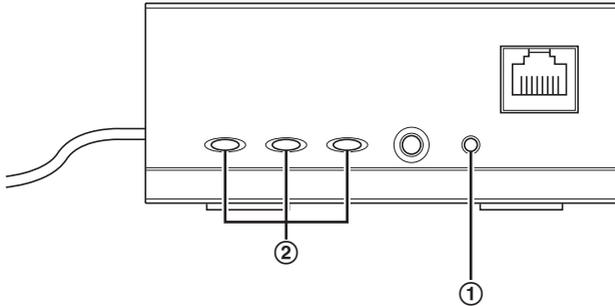
2. The camera adaptor's indicator (②) is lit green.
  - Resetting is completed when the indicator is lit green after changing from flashing green to flashing orange. However, depending on the condition of the connection, the indicator may be lit green after alternating from flashing orange to lit orange.

### **IMPORTANT**

- Do not disconnect the center adaptor's AC cord, or the coaxial cable during resetting or within 30 seconds after resetting, because the internal information may not have completed resetting.

## 2.2 Resetting Center Adaptors

1. Press the center adaptor's INITIAL SET button (①) for about 3 seconds with a pointed object.
  - All the indicators (②) will start flashing green.



2. All of the center adaptor's indicators (②) are lit green.
  - Resetting is completed when all the indicators are lit green after changing from flashing green.

### **IMPORTANT**

- Do not disconnect the center adaptor's AC cord within 30 seconds after resetting, because the internal information may not have completed resetting.

# 3 Adaptor Maintenance Screen

The adaptor's maintenance screen can be displayed on the web browser of a PC connected to the network connector of an adaptor.

Settings such as the following can be performed in the maintenance screen.

- firmware version updates
- adaptor status confirmation
- IP address and password changes

### **IMPORTANT**

- To display the maintenance screen of adaptors that have already been installed or connected, directly connect the camera or center adaptor to a PC with a LAN cable.
- In order to access the adaptor's maintenance screen, you must temporarily change the IP address assigned to your computer. Before you change the IP address of your computer, note the IP address and network settings already assigned to your computer.
- **After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.**
- If you plan to update the adaptor's firmware, download the latest version of the adaptor's firmware from the Panasonic support site (<http://panasonic.net/pss/security/products/coax/index.html>) and save it on the computer before you change the IP address of the computer.

## 3.1 Accessing the Maintenance Screen

### 3.1.1 Temporarily Changing the Computer's IP Address

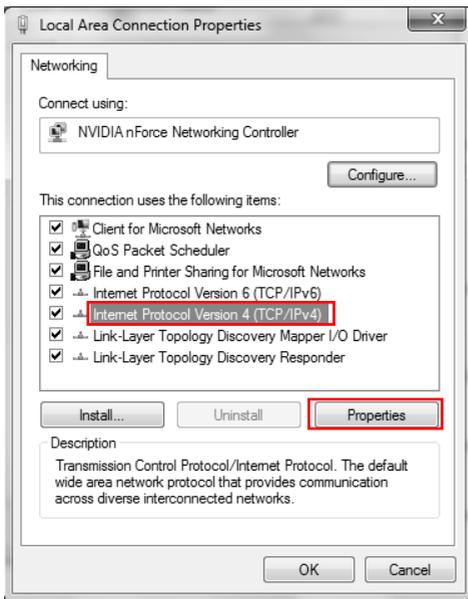
Temporarily change the IP address assigned to your computer to access the adaptor's maintenance screen.

The procedure for changing the IP address differs depending on the operating system used.

#### Windows® 7: Changing your computer's IP address

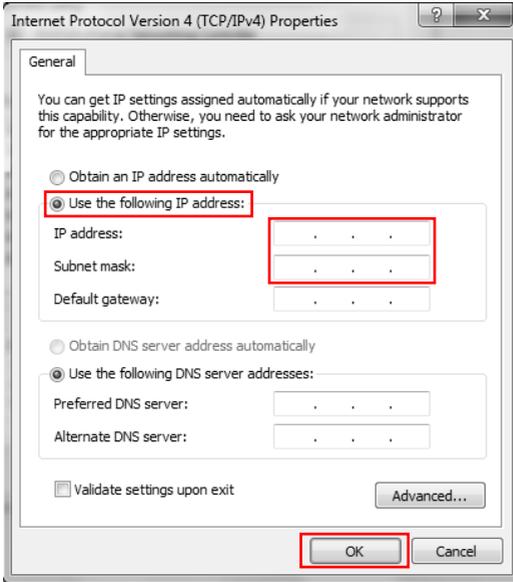
In Microsoft® Windows 7, this procedure must be performed by either the “Administrator” user, or a user assigned with administrator level privileges. Refer to the help file supplied with the operating system for more information.

1. Click [Start]→[Control Panel]→[View network status and tasks].
2. Click [View your active networks]→[Local Area Connection].
3. Click [Properties] under [Local Area Connection Status].
4. Select [Internet Protocol Version 4 (TCP/IPv4)], then click [Properties].



### 3 Adaptor Maintenance Screen

5. Select [Use the following IP address], then click [OK] after entering the IP address (192 . 168 . 249 . \*\*\*) and Subnet mask (255 . 255 . 255 . 0). For the IP address, \*\*\*=1-254. However, 249 cannot be used.



6. Click [Close] to exit the [Local Area Connection Properties] screen.

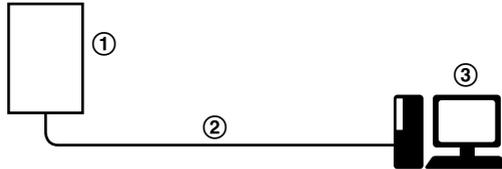
#### **IMPORTANT**

- The procedure for changing the IP address may change depending on whether the viewing method for Windows 7 is set to [Large icons] or [Small icons]. Refer to the help file supplied with the operating system for more information.

### 3.1.2 Accessing the Maintenance Screen

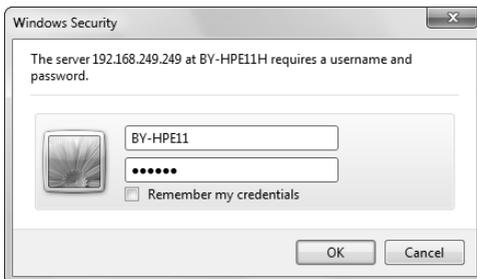
Follow the procedure below after you have changed the IP address of the computer.

1. Connect the adaptor (①: camera adaptor or center adaptor) and computer (③) using a LAN cable (②). When accessing the camera adaptor, make sure it is connected to the center adaptor with a coaxial cable, and that the center adaptor is connected to the power outlet.



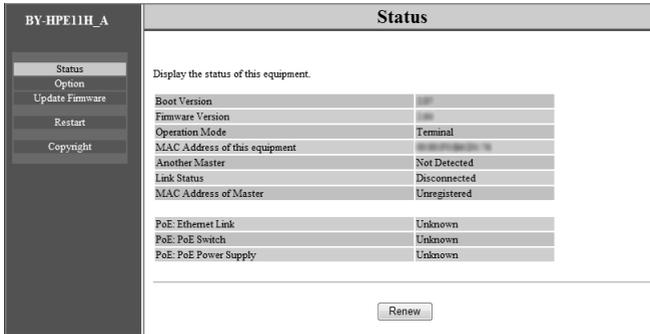
#### **IMPORTANT**

- To display the maintenance screen of adaptors that have already been installed or connected, directly connect each adaptor to a PC with a LAN cable.
2. Start the computer's web browser.
    - See page 16 for information on web browsers.
  3. Enter `http://192.168.249.249/` in the web browser's address bar.
  4. Enter the user name and password.
    - Default user name: BY-HPE11
    - Default password: 999999
    - The screen shown here depicts the screen shown when using Windows 7.



### 3 Adaptor Maintenance Screen

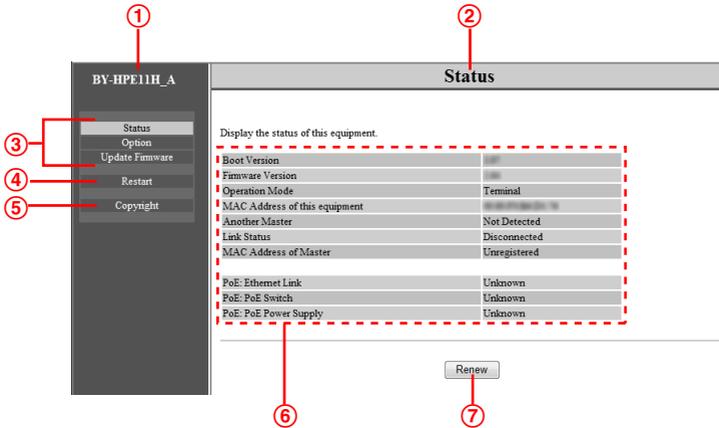
5. Click [OK].
  - The maintenance screen is displayed.



#### **IMPORTANT**

- The screen shown here depicts the screen shown when accessing a center adaptor. The screen displayed for the center adaptor and camera adaptor is different.
- After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.
- Only a PC connected to the adaptor's network connector can display the maintenance screen and perform firmware updates, etc.
- The maintenance screen is displayed in English.

### 3.1.3 Maintenance Screen Overview



- ① Model name
- ② Name of current screen
- ③ Click to jump to the corresponding page
- ④ Click to restart the adaptor
- ⑤ Click to view the copyright information
- ⑥ Contents of the current screen
- ⑦ Click to update the displayed information

#### **IMPORTANT**

- The screen shown here depicts the screen shown when accessing a center adaptor. The screen displayed for the center adaptor and camera adaptor is different.
- When consecutively connecting adaptors to the computer to access their maintenance screens, because the information (ARP table) of the previously connected adaptor is retained, the maintenance screen may not be able to be opened. Therefore, we recommend restarting the computer before connecting it to another adaptor and accessing its maintenance screen. You may reset the computer's ARP table if you do not want to restart the computer. Refer to the help file or operating instructions supplied with the operating system for more information.

#### **Resetting the ARP table when using Windows 7**

- Display the command prompt by clicking [Start]→[All Programs]→[Accessories]→[Command Prompt].
- Enter `arp -d`, then press [Enter].

### 3.1.4 System Requirements

<b>Operating System</b>	<b>Web Browser</b>
Microsoft® Windows® 7	Internet Explorer® (version 8.0 or later)
Microsoft® Windows Vista®	Internet Explorer® (version 7.0 or later)
Microsoft® Windows® XP	Internet Explorer® (version 6.0 or later)

## 3.2 Using the Maintenance Screen

### 3.2.1 Updating the Adaptor's Firmware

Make sure you download the latest version of the adaptor's firmware from the Panasonic support site (<http://panasonic.net/pss/security/products/coax/index.html>) and save it to the computer before changing the computer's IP address and accessing the maintenance screen.

1. Access the maintenance screen of the adaptor.
2. Click [Update Firmware].



3. Click [Browse...], select the firmware file, then click [Open].
4. Click [Start].
5. Click [OK] when prompted.
  - The firmware will be updated, and then the adaptor will automatically restart. After restarting, the updated firmware is used.

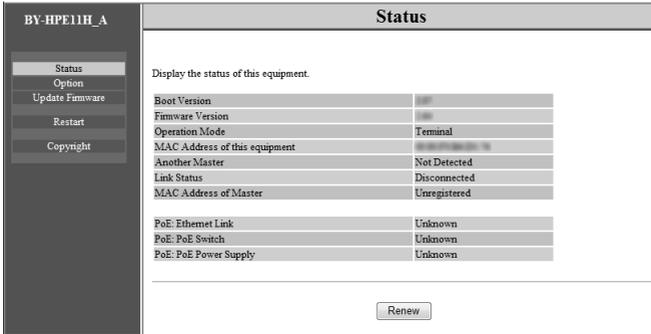
#### **IMPORTANT**

- After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.
- Do not disconnect the center adaptor from the power outlet until the update is completed.
- After you have updated the firmware, confirm the adaptor's firmware version on the [Status] screen. (See page 18)
- Update the firmware for both the camera adaptor and center adaptor.

#### 3.2.2 Confirming the Adaptor's Status

You can confirm the information in the table below, such as the firmware version and MAC address of the adaptor, on the [Status] screen.

1. Access the maintenance screen of the adaptor.
2. Click [Status].



#### IMPORTANT

- The screen shown here depicts the screen shown when accessing a center adaptor. The screen displayed for the center adaptor and camera adaptor is different. [Link Status] and [MAC Address of Master] are not displayed on the camera adaptor's screen.

Items	Description
Boot Version	Displays the adaptor's boot version.
Firmware Version	Displays the adaptor's firmware version.
Operation Mode	Displays the adaptor type (camera adaptor or center adaptor). Camera adaptors are displayed as [Master], and center adaptors are displayed as [Terminal].
MAC Address of this equipment	Displays the MAC address of the connected adaptor.
Another Master	Indicates whether other camera adaptors exist on the network. If other camera adaptors exist on the network, [Detected] is displayed, if they do not exist, [Not Detected] is displayed. Communication performance may be affected if other camera adaptors are detected.
Link Status (only displayed for the center adaptor)	Displays the status of the connection between the center and camera adaptor. [Connected] is displayed when there is a connection, and [Disconnected] is displayed when there is no connection.

Items	Description
MAC Address of Master (only displayed for the center adaptor)	Displays the MAC address of the connected camera adaptor. If no camera adaptor is connected, [Unregistered] is displayed.
PoE: Ethernet Link	<p>Displays the status of the connection between the camera adaptor and network device.</p> <p>[Link-up] is displayed if there is a connection, and [Link-down] is displayed if there is no connection.</p> <ul style="list-style-type: none"> <li>• When viewing the center adaptor's maintenance screen, information from the camera adaptor is obtained and displayed. If the information cannot be obtained, [Unknown] is displayed.</li> </ul>
PoE: PoE Switch	<p>Displays the status of the camera adaptor's PoE switch (ON/OFF).</p> <ul style="list-style-type: none"> <li>• When viewing the center adaptor's maintenance screen, information from the camera adaptor is obtained and displayed. If the information cannot be obtained, [Unknown] is displayed.</li> </ul>
PoE: PoE Power Supply	<p>Displays whether the camera adaptor's PoE function is able to supply power to connected devices or not. [Enable] is displayed if the camera adaptor is able to supply power, and [Disable] is displayed if it is not.</p> <ul style="list-style-type: none"> <li>• When viewing the center adaptor's maintenance screen, information from the camera adaptor is obtained and displayed. If the information cannot be obtained, [Unknown] is displayed.</li> </ul>

#### **IMPORTANT**

- After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.

### 3.2.3 Changing Adaptor Settings

The IP address and password for accessing the maintenance screen can be changed.

#### Changing the adaptor's IP address

You may change the adaptor's IP address and subnet mask if necessary. Change the IP address in cases such as when the adaptor is using the same IP address as another network device, or if you want to match the address used in the network.

1. Access the maintenance screen of the adaptor.
2. Click [Option].

The screenshot shows a web interface for an adaptor. On the left is a vertical menu with options: Status, Option (highlighted), Update Firmware, Restart, and Copyright. The main area is titled 'Option' and contains three tabs: 'IP Address' (selected), 'Account', and 'Terminal List/Delete'. Below the tabs, there is a text prompt: 'You can change the IP address of this equipment. Click "Set" button, and then restart this equipment to reflect the settings.' Below this prompt is a form with two rows: 'IP Address' with the value '192.168.249.249' and 'Subnet Mask' with the value '255.255.255.0'. At the bottom of the form are two buttons: 'Set' and 'Cancel'.

3. Enter the desired IP address.
4. Enter the subnet mask if necessary.
5. Click [Set], then click [OK] when prompted.
6. Click [Restart].
  - The adaptor will restart, and the new settings will take effect. The new IP address must be entered in the web browser's address bar in order to access the adaptor's maintenance screen again.

#### **IMPORTANT**

- After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.
- Match the IP address and subnet mask settings to those used in your network.
- The screen shown here depicts the screen shown when accessing a camera adaptor. The screen displayed for the center adaptor and camera adaptor is different.

### Changing the adaptor's password

You may change the adaptor's password if necessary. The password is required to access the maintenance screen.

1. Access the maintenance screen of the adaptor.
2. Click [Option], then click the [Account] tab.

The screenshot shows the maintenance interface for a device labeled 'BY-HPE11R\_A'. On the left is a vertical menu with options: Status, Option (highlighted), Update Firmware, Restart, and Copyright. The main area is titled 'Option' and contains three tabs: 'IP Address', 'Account' (selected), and 'Terminal List/Delete'. Below the tabs, there is instructional text: 'You can change your password. "User name" cannot be changed. Password should be 6 to 12 characters. Note: [Space], ["/"], ["/"], ["/"], ["/"], ["/'] are not allowed.' Below this text are three input fields: 'User name' (pre-filled with 'BY-HPE11'), 'Password', and 'Password (Retype)'. At the bottom of the main area are 'Set' and 'Cancel' buttons.

3. Enter the desired password within 6-12 characters (only A-Z, a-z, and 0-9 can be used).
  - Passwords are case-sensitive.
  - [Space], ["/"], ["/"], ["/"], ["/'], and ["/'] cannot be entered.
4. Click [Set], then click [OK] when prompted.
5. Click [Restart].
  - The adaptor will restart, and the new settings will take effect. The new password must be entered in order to access the adaptor's maintenance screen again.

### **IMPORTANT**

- After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.
- To increase security, we recommend changing the adaptor's password.
- Do not forget the password. If the password is forgotten, you can reset the password to the default value (999999) by resetting the adaptor (see page 8). If the adaptor is reset, all registration information is erased.
- Do not disclose the password, you are responsible for managing your password.
- The user name cannot be changed.
- The screen shown here depicts the screen shown when accessing a camera adaptor. The screen displayed for the center adaptor and camera adaptor is different.

### 3 Adaptor Maintenance Screen

#### Viewing the center adaptor's MAC address (only from the camera adaptor)

You can access the camera adaptor's maintenance screen and view the MAC address of the center adaptor.

1. Access the maintenance screen of the camera adaptor.
2. Click [Option], then click the [Terminal List/Delete] tab.



- The center adaptor's MAC address is displayed.
- The [Delete] button, [Cancel] button, and check box cannot be used.

#### **IMPORTANT**

- After you have finished using the maintenance screen, restore the computer's IP address and network settings to their original values.
- The MAC address of the center adaptor is written on the underside of the center adaptor.

## 4 Troubleshooting

Before sending the unit in for repairs, check if the problem can be resolved by following the troubleshooting steps.

If the problem cannot be solved by the steps in the troubleshooting, contact an authorized service center.

### 4.1 Indicator Display Issues

Problem	Cause and Remedy
All the indicators are not lit.	<ul style="list-style-type: none"> <li>• The center adaptor may not be receiving power.               <ul style="list-style-type: none"> <li>→ Confirm that the AC cord is connected to the power outlet and the AC IN of the center adaptor (see 3.2 Connections in the Installation Guide).</li> </ul> </li> </ul>
Only the camera adaptor's indicator is not lit.	<ul style="list-style-type: none"> <li>• The coaxial cable is not connected.               <ul style="list-style-type: none"> <li>→ Connect the coaxial cable.</li> <li>→ Confirm that the coaxial cable is not over 2 km (6,561 feet 8 inches) in length and is connected properly (see 3.2 Connections in the Installation Guide).</li> <li>→ Confirm that there are no connection problems such as damage or breaks in the cable.</li> </ul> </li> </ul>
The camera adaptor's LINK indicator is lit red.	<ul style="list-style-type: none"> <li>• Data cannot be sent because the camera adaptor may be malfunctioning.               <ul style="list-style-type: none"> <li>→ Contact an authorized service center.</li> </ul> </li> </ul>
The center adaptor's POWER indicator is flashing green.	<ul style="list-style-type: none"> <li>• The center adaptor may be connected to a device other than the camera adaptor.               <ul style="list-style-type: none"> <li>→ Check the connection with the camera adaptor (see 3.2 Connections in the Installation Guide).</li> </ul> </li> </ul>
The center adaptor's LAN indicator is lit orange.	<ul style="list-style-type: none"> <li>• A network device is not connected to the network connector.               <ul style="list-style-type: none"> <li>→ Connect a network device to the network connector with a LAN cable (see 3.2 Connections in the Installation Guide).</li> </ul> </li> <li>• The network device connected to the network connector may not be receiving power.               <ul style="list-style-type: none"> <li>→ Connect the network device to a power outlet (see 3.2 Connections in the Installation Guide).</li> </ul> </li> <li>• A network device is not connected to the network connector with a LAN cable.               <ul style="list-style-type: none"> <li>→ Confirm that the LAN cable is connected properly (see 3.2 Connections in the Installation Guide) and that there are no connection problems such as damage or breaks in the cable.</li> </ul> </li> </ul>

## 4 Troubleshooting

Problem	Cause and Remedy
The center adaptor's COAXIAL indicator is not lit.	<ul style="list-style-type: none"><li>• The center adaptor is not receiving power. → Confirm that the AC cord is connected to the power outlet and AC IN of the center adaptor (see 3.2 Connections in the Installation Guide).</li><li>• The coaxial cable is not connected. → Confirm that the coaxial is not over 2 km (6,561 feet 8 inches) in length and is connected properly (see 3.2 Connections in the Installation Guide). → Confirm that there are no connection problems such as damage or breaks in the cable.</li><li>• The camera adaptor is not connected. → Connect the center and camera adaptors with a coaxial cable (see 3.2 Connections in the Installation Guide).</li></ul>
The center adaptor's COAXIAL indicator is lit red.	<ul style="list-style-type: none"><li>• Data cannot be sent because the center adaptor may be malfunctioning. → Contact an authorized service center.</li></ul>

### 4.2 Communication Speed Issues

Problem	Cause and Remedy
When testing the communication speed, all the indicators are off, or only 1 or 2 of the indicators are lit.	<ul style="list-style-type: none"><li>• The communications speed may be affected due to issues with the installation environment. → This is not a malfunction. Confirm that there are no problems with using the camera or displaying images. → Confirm that the coaxial cable is of a suitable type and length, and that there are no devices near the unit that may cause strong interference.</li></ul>

## 4.3 PoE Issues

Problem	Cause and Remedy
Network cameras connected to the camera adaptor do not function.	<ul style="list-style-type: none"> <li>• The connection distance may be too long.               <ul style="list-style-type: none"> <li>→ The PoE function cannot supply power to devices connected at distances over 500 m (1,640 feet 5 inches).</li> <li>→ Confirm that the connected LAN cable is a PoE standard cable (see 3.1 Connection Example in the Installation Guide), that the LAN cable is connected properly, and that there are no connection problems such as damage or breaks in the cable.</li> </ul> </li> <li>• If the LAN cable was quickly disconnected and then reconnected, the PoE function may not be able to supply power.               <ul style="list-style-type: none"> <li>→ Disconnect the LAN cable and then reconnect after waiting for more than 2 seconds.</li> </ul> </li> </ul>
The status of the [PoE: PoE Power Supply] on the maintenance screen is set to [Disable] and the PoE function cannot supply power.	<ul style="list-style-type: none"> <li>• The status of the [PoE: Ethernet Link] on the maintenance screen is set to [Link-down].               <ul style="list-style-type: none"> <li>→ Confirm that the camera adaptor, network camera and other network devices are connected properly, that there are no connection problems such as damage or breaks in the cables, and that network devices are connected to the power outlet (see 3.2 Connections in the Installation Guide).</li> </ul> </li> <li>• The status of the [PoE: PoE Switch] on the maintenance screen is set to [OFF].               <ul style="list-style-type: none"> <li>→ Turn the PoE switch on the camera adaptor to [ON] (see page 4).</li> </ul> </li> <li>• Power cannot be supplied normally from the center adaptor to the camera adaptor.               <ul style="list-style-type: none"> <li>→ The PoE function cannot supply power to devices connected with coaxial cable at distances over 500 m (1,640 feet 5 inches) (see 3.2 Connections in the Installation Guide).</li> <li>→ The PoE function may not be able to supply power if the line resistance of the coaxial cable is of a high value (see 3.2 Connections in the Installation Guide).</li> </ul> </li> </ul>

## 4.4 Other Issues

Problem	Cause and Remedy
The unit is warm.	<ul style="list-style-type: none"> <li>• This is normal. (The unit may seem slightly warmer in summer than compared to winter.)               <ul style="list-style-type: none"> <li>→ If the unit gets extremely hot, disconnect the power plug and contact an authorized service center.</li> </ul> </li> </ul>

# 5 Specifications

## Center Adaptor (BY-HPE11H)

Items	Specifications
Operating Environment	Temperature: 0 °C (32 °F) to 50 °C (122 °F) Humidity: 20 %–85 % (no condensation)
Interfaces	10Base-T/100Base-TX × 1 AUTO MDI/MDI-X AC inlet BNC connector
Dimensions (W×H×D)	About 105 mm × 44 mm × 210 mm (4 1/8 inches × 1 3/4 inches × 8 1/4 inches) (main body only)
Mass (Weight)	About 570 g (1.26 lb)
Power Supply	AC 100–240 V 50/60 Hz 0.6 A
Power Consumption	Maximum about 28 W (including the power consumption of the camera adaptor)
Coaxial Cable Power Supply Capability	Maximum 22 W

## Camera Adaptor (BY-HPE11R)

Items	Specifications
Operating Environment	Temperature: -10 °C (14 °F) to 50 °C (122 °F) Humidity: 20 %–90 % (no condensation)
Interfaces	10Base-T/100Base-TX × 1 AUTO MDI/MDI-X (PoE compatible) BNC connector
Dimensions (W×H×D)	About 80 mm × 115 mm × 35 mm (3 1/8 inches × 4 1/2 inches × 1 3/8 inches) (main unit only)
Mass (Weight)	About 165 g (0.36 lb)
Power Supply	Original power system (DC 55 V from the center adaptor via the coaxial cable)
Power Consumption	Included in the center adaptor's power consumption
PoE Power Supply Capability	Maximum 15.4 W (see page 28 for more information)

## Coaxial Interface

Items	Specifications
Standard	Panasonic original system
Frequency Range	2 MHz–28 MHz
Data Transfer Mode	Wavelet OFDM
Access Method	CSMA/CA
Error Correction	Reed-Solomon Code + Convolutional Code (Viterbi decoding)

## LAN Interface

Items	Specifications
Standard	IEEE802.3/IEEE802.3u (10Base-T/100Base-TX)
MDI/MDI-X	Cross/Straight cable automatic recognition
Transmission Rate	10 Mbps/100 Mbps (Auto-Sensing)
Number of Ports	1 (RJ-45 connector)
Protocol	TCP/IP/UDP
Access Method	CSMA/CD

## Connection Specifications

Items	Specifications
Number of adaptors that can be communicated with	1 camera adaptor can be connected via coaxial cable for each center adaptor
Connectable Devices	Center adaptor: devices equipped with 10Base-T/100Base-TX interfaces Camera adaptor: Panasonic network cameras (see <a href="http://panasonic.net/pss/security/products/coax/index.html">http://panasonic.net/pss/security/products/coax/index.html</a> for more information)
Number of devices that can be connected	A maximum of 256 center adaptors or camera adaptors can be connected in 1 segment

## 5 Specifications

### Maintenance Screen Specifications

Items	Specifications
Compatible Operating Systems	Windows XP, Windows Vista, Windows 7
Web Browser	Internet Explorer 6.0, 7.0, 8.0 or later

### Performance Specifications

Items	Specifications
Transmission Speed <sup>*1</sup> (UDP)	45 Mbps or higher (when using an RG-6/U coaxial cable at distances under 2 km [6,561 feet 8 inches])
Transmission Speed <sup>*1</sup> (TCP <sup>*2</sup> )	35 Mbps or higher (when using an RG-6/U coaxial cable at distances under 2 km [6,561 feet 8 inches])
Maximum Transmission Distance	Without PoE function: 2 km (6,561 feet 8 inches) With PoE function: 500 m (1,640 feet 5 inches) (when using a Panasonic network camera) / 300 m (984 feet 3 inches) (when using a Class0 standard network camera)

<sup>\*1</sup> This value is for transmissions between the BY-HPE11H and BY-HPE11R. The transmission speed when using an RG-6/U coaxial cable may vary depending on factors such as the coaxial cable condition and network environment. The values shown here measured in environments not affected by cable or network environment conditions.

<sup>\*2</sup> Measured using Linux<sup>®</sup> FTP.

### Maximum Transmission Distance / PoE Power Supply (when using RG-6/U coaxial cable) Specifications

Maximum Transmission Distance	300 m (984 feet 3 inches)	500 m (1,640 feet 5 inches)	1,000 m (3,280 feet 10 inches)	1,500 m (4,921 feet 3 inches)	2,000 m (6,561 feet 8 inches)
Power Supplied by PoE	15.4 W <sup>*1</sup>	12.0 W <sup>*2</sup>	Cannot supply power with PoE <sup>*3</sup>		

<sup>\*1</sup> When connecting an IEEE802.3af (Alternative B, class0) network camera to the camera adaptor (BY-HPE11R).

<sup>\*2</sup> When connecting a Panasonic network camera (see <http://panasonic.net/pss/security/products/coax/index.html> for more information) to the camera adaptor (BY-HPE11R).

<sup>\*3</sup> Turn the PoE switch [OFF] in this situation.

### 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 (984 feet 3 inches) of Inner Conductor	Maximum Cable Length (for PoE connections)	Maximum Cable Length (for non-PoE connections)
RG-6/U	Less than 12 $\Omega$	500 m (1,640 feet 5 inches)	2,000 m (6,561 feet 8 inches)

### Accessories

Rack Mount Connecting Fitting: BY-HCA10A

**Panasonic System Networks Company of America,  
Unit of Panasonic Corporation of North America**

[www.panasonic.com/business/](http://www.panasonic.com/business/)

For customer support, call 1.800.528.6747

Three Panasonic Way, Secaucus, New Jersey 07094 U.S.A.

**Panasonic Canada Inc.**

5770 Ambler Drive, Mississauga, Ontario, L4W 2T3 Canada

(905)624-5010

[www.panasonic.ca](http://www.panasonic.ca)

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