# ALL1682511v2

## 500 Mbps PLC Ethernet Bridge

## + 300 Mbps WiFi AP

# USER MANUAL

**DEFAULT VALUES**

**IP: 192.168.1.2**

**User name: admin**

**Password: admin**

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# About the Product

HomePlug AV is ready to use out of the box and does not require the installation of driver software to work. It can be connected to computers, routers, gaming consoles, hubs, IPTV set-top boxes, and other Ethernet devices regardless of operating system.

# How Does It Work?

HomePlug AV utilizes the existing electrical wiring in the house as a path to create a secured network of computers and Ethernet devices. With a maximum data rate of up to 500 Mbps, HomePlug AV can reliably handle high requirement applications such as broadband Internet, high definition video streaming, and Voice over IP.

HomePlug AV converts digital signals to a complex analog signal that traverses along the electrical wires. When receiving the analog signal, HomePlug AV converts the analog signal back to digital. To make the signal secured, a 128-bit AES encryption is applied.

A HomePlug AV device can only communicate with other HomePlug AV devices that use the same Private Network Name. The Private Network Name can be easily changed in two ways; (1) is through the HomePlug AV Web User Interface. It can be changed manually using the HomePlug AV Web User Interface on a computer with a Windows operating system. When you use the Web Interface, you have to manually type the Private Network Name for the device. (2) Is through the Simple Connect button. The Simple Connect button automatically creates an encrypted Private Network Name. It can also be used to reset the Private Network Name or to add a device into an existing HomePlug AV network.

**Note:** HomePlug AV devices are effective when used in pairs. The Twin packs are already configured to use a common Private Network Name unique for that pair and are ready to use without involving any complex configurations. The HomePlug AV from a Single Pack on the other hand, uses a random Private Network Name. You still need to change its Private Network Name to allow it to communicate with an existing HomePlug AV network.

When a HomePlug AV communicates with another device, the Powerline Activity LED color will indicate the status of the connection rate it provides: Red means below 30 Mbps; Amber means 30 to 80 Mbps; and Green means more than 80 Mbps.

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# Direct Connection

For best performance, connect the HomePlug AV directly to a wall outlet. As much as possible, avoid connecting it to a power strip where other electrical devices are connected. Other devices may produce electrical noise or interference that may affect the overall performance of your HomePlug AV.

# Package Contents

The package contains the following items:

- 1 HomePlug AV for Single Pack
- 1 Ethernet cable for Single Pack
- Resource CD that contains the Easy Start Guide and the User Manual.
- Easy Start Guide

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# Device Design

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| | Label | Status | Description/ Function |
|---|---|---|---|
| 1 | **WPS Button / Wireless LED** | OFF | • No power. |
| | | ON | • When this button is pressed for 2 seconds it will enable WPS function.<br>• When this button is pressed for more than 5 seconds it will reset the device.<br>• When the wireless LED is steady it means that the Wireless Function is enabled. |
| 2 | **Power LED** | OFF | • No power. |
| | | ON | • When Simple Connect is pressed for more than 10 seconds, this LED will turn OFF and turn ON to confirm the Private Network Name reset.<br>• After Simple Connect is pressed for 2 seconds, this LED will blink to confirm the button press. |
| 3 | **Powerline Activity** | OFF | Device is not connected to a HomePlug AV network. |
| | | ON | • When Simple Connect is pressed for more than 10 seconds, this LED will turn OFF to confirm the Private Network Name reset. (If PLC is active, If not this LED remains OFF)<br>• This LED is steady in color when the device is part of a HomePlug AV network.<br>• The LED colors represent the connection rate within the HomePlug AV network whether it is good (red), better (amber), or best (green). |
| 4 | **Ethernet Activity** | OFF | An Ethernet device is not connected. |
| | | ON | • This LED is steady when an Ethernet device is connected.<br>• The LED flashes to indicate Ethernet activity. |
| 5 | **Ethernet Port** | | Accepts either cross or straight Ethernet cable. |
| 6 | **Simple Connect Button** | | Press to create or join a HomePlug AV network.<br>When Simple Connect is pressed for more than 10 seconds, it will randomize the Private Network Name.<br>Then Press for 2 seconds to pair the device. |
| 7 | **Dual Band Switch (2.4Ghz/5Ghz)** | | This allows you to manually switch to either 2.4 Ghz or 5 Ghz frequency band. |

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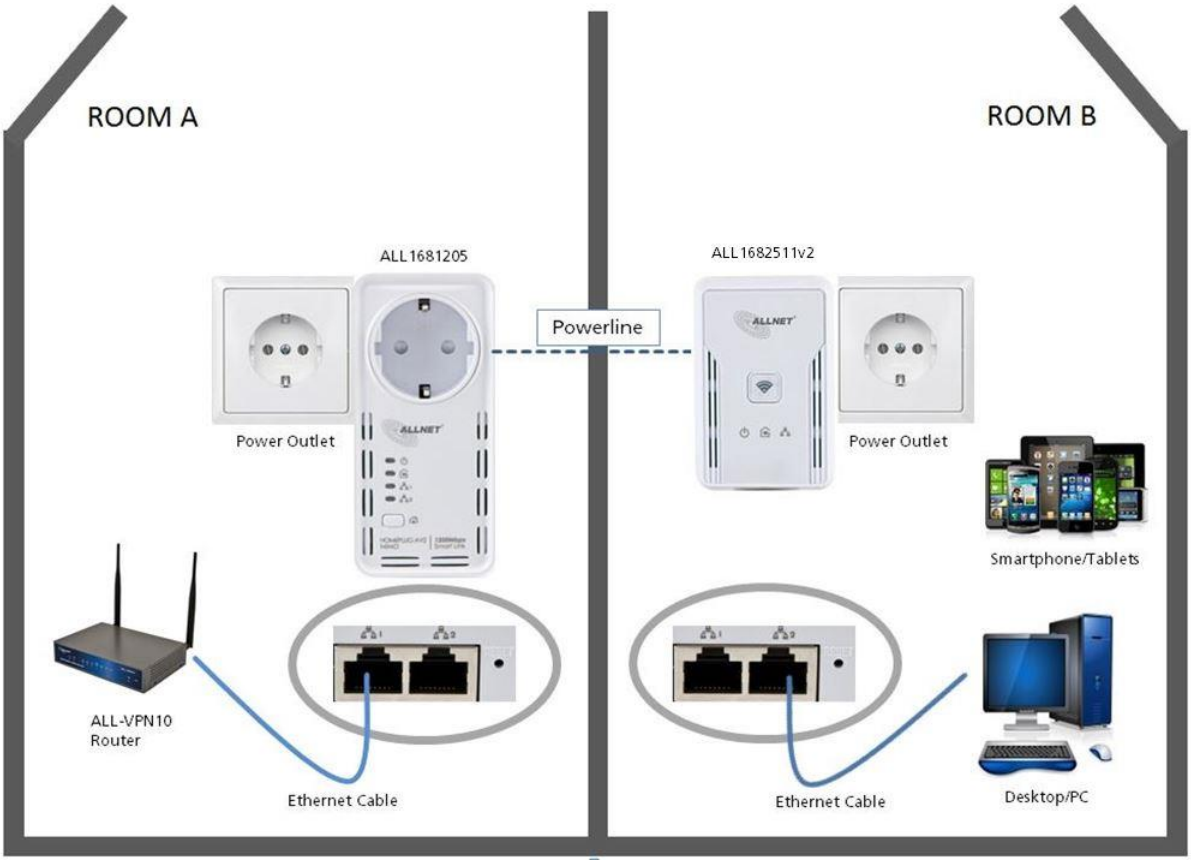
# Pairing the Device

Your HomePlug AV devices by default are preconfigured to have a common Private Network Name. Setting up your HomePlugAV network is as easy as 1, 2 and 3.

1. It is advisable that you plug in your HomePlugAV devices side by side to easily observe the LED behaviors of each HomePlug AV. Wait until the Power and PL-ACT LED turns ON to confirm that the connection has been established.




2. In ROOM A plug in your HomePlugAV into the wall socket then connect it to your Modem/Router's Ethernet LAN port using an Ethernet cable.
3. In ROOM B plug in your HomePlugAV into the wall socket then connect it to your computer's Ethernet Port using an Ethernet cable. Your HomePlugAV is now ready to use.

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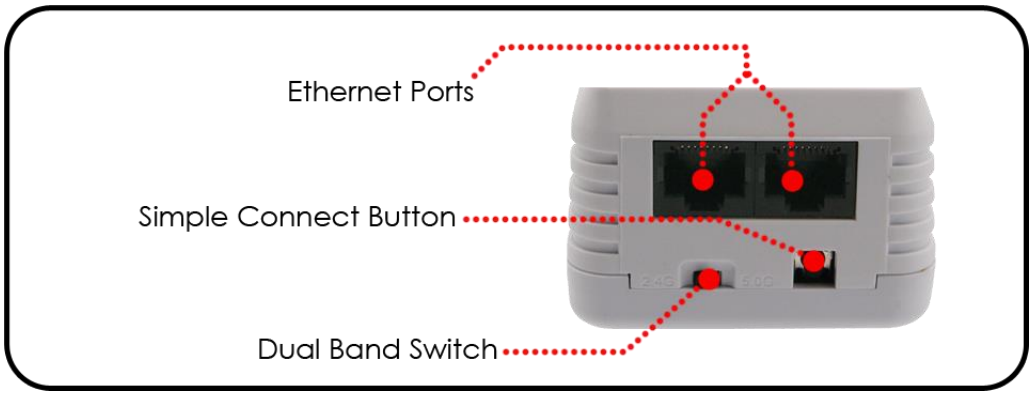
# How to Use Simple Connect

Simple Connect provides a more convenient way of creating your HomePlug AV network without the need to open the HomePlug AV Web User Interface from a computer. The button has three main functions which include:

- Resetting the Private Network Name
- Creating a Secured HomePlug AV Network
- Joining an existing Secured HomePlug AV Network




## Resetting the Private Network Name

Simple Connect allows you to reset the HomePlug AV's Private Network Name to a random key. When a HomePlug AV is reset to a random key, it will not be able to communicate with any other device.

**Note:** Resetting the Private Network Name is different from resetting the device to its factory default settings. If you intend to reset the device to its factory default settings, press WPS button on the device for more than 5 seconds.

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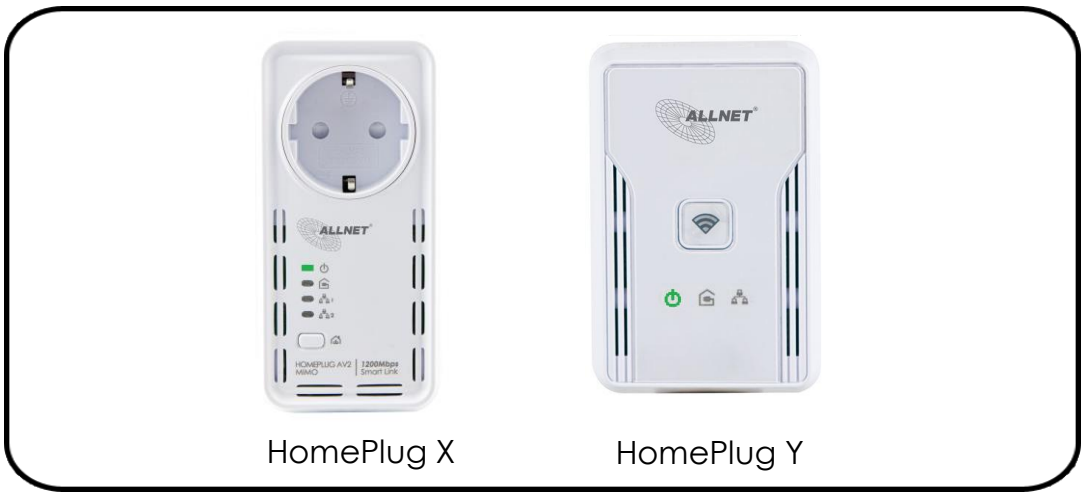
# To reset the Private Network Name using Simple Connect:

**Step 1**

On HomePlug X, Press the Simple Connect button more than 10 seconds. Power LED and Ethernet LED will turn OFF and turn ON (Ethernet is connected). The Powerline Activity LED will switch OFF on both units.

**Step 2**

On the second adapter (HomePlug Y/ ALL1682511v2), press the Simple Connect button for 2 seconds and do it on the first adapter to pair the devices. The Power LED will blink to indicate that the button is pressed.




# Creating a Secured HomePlug AV Network

To create a HomePlug AV network, you need at least two HomePlug AV devices using random Private Network Names. When you press Simple Connect for more than 10 seconds on both devices, a common Private Network Name will be automatically generated to enable them to communicate with each other.

**Note:** New HomePlug AV devices can already communicate with each other once out of the box and plugged. However, if you intend to create a new Private Network Name using Simple Connect for both devices, you need to reset their Private Network Names to a random key before proceeding.

To create a Secured HomePlug AV network using Simple Connect:

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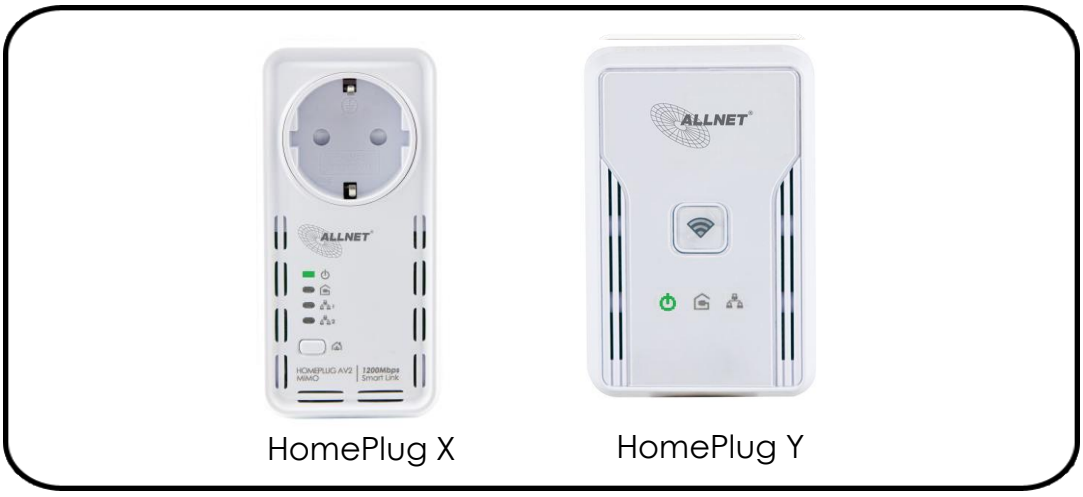
# Step 1

Plug your HomePlug AVs side by side where you can easily observe the LED behavior.

Upon connection, the Ethernet LEDs will blink simultaneously and then the Power LED and Powerline Activity LED lights on steadily.

Press the Simple Connect button of HomePlug AV X for more than 10 seconds. Power LED will turn OFF and ON indicating that the Private Network Name has been randomized.




# Step 2

Press Simple Connect for two seconds on HomePlug Y. After you release the button, the Power LED ⏻ will blink. If the Power LED ⏻ did not blink, press Simple Connect again for two seconds.

**Note:** Do not press Simple Connect for more than two seconds.

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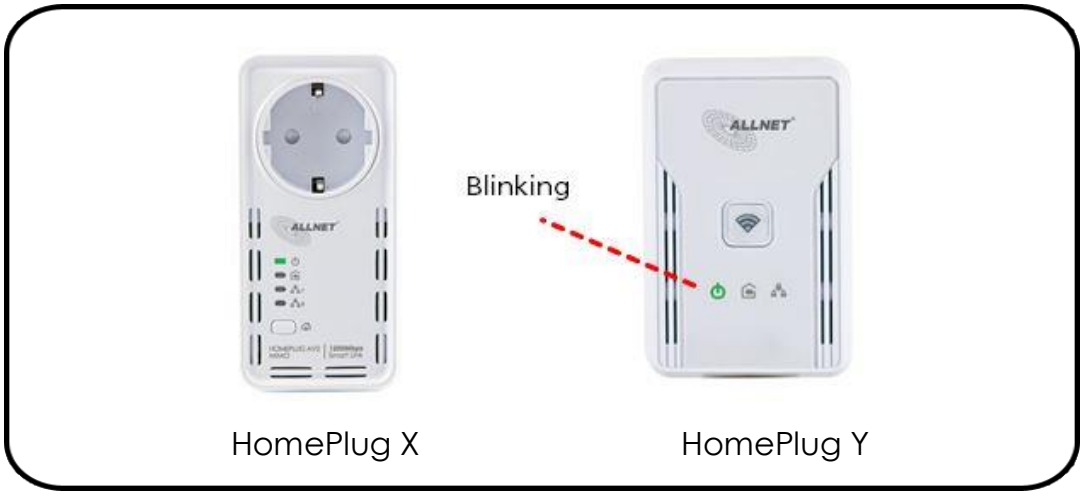
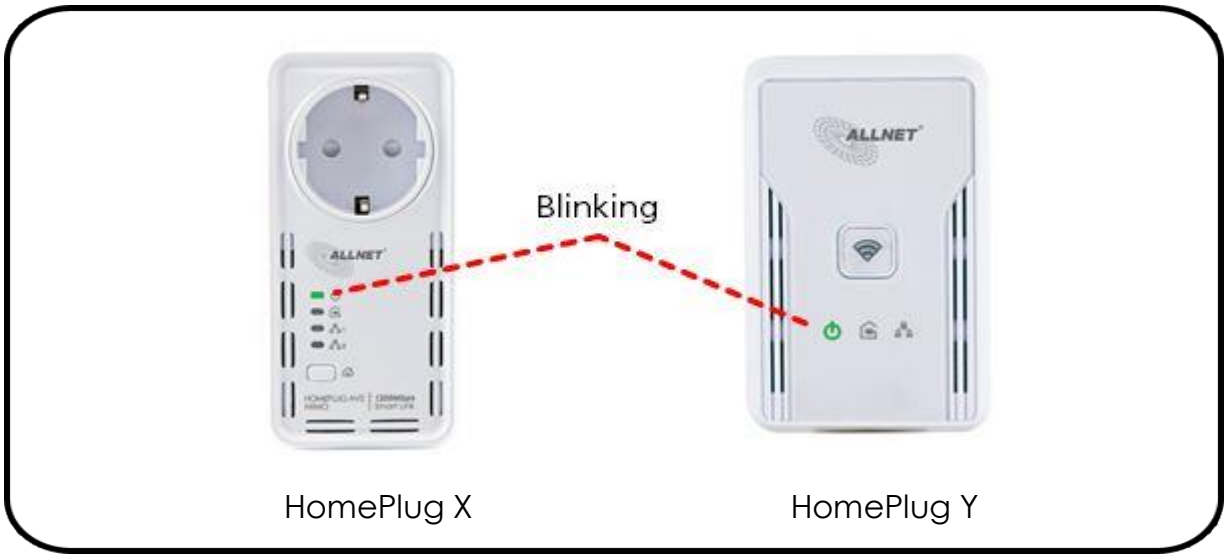



## Step 3

Press Simple Connect for two seconds on HomePlug X. After you release the button, the Power LED ⏻ will blink. If the Power LED ⏻ did not blink, press Simple Connect again for two seconds.

Pairing between two devices are only given two minutes upon pressing the Simple Connect button for two seconds on HomePlug Y. After pressing Simple Connect on HomePlug Y, make sure to press Simple Connect on HomePlug X within two minutes to ensure a successful connection, otherwise repeat steps 2 and 3 until the LEDs of both devices switch OFF and on twice, indicating that they are paired successfully with one another.

**Note:** Do not press Simple Connect for more than two seconds

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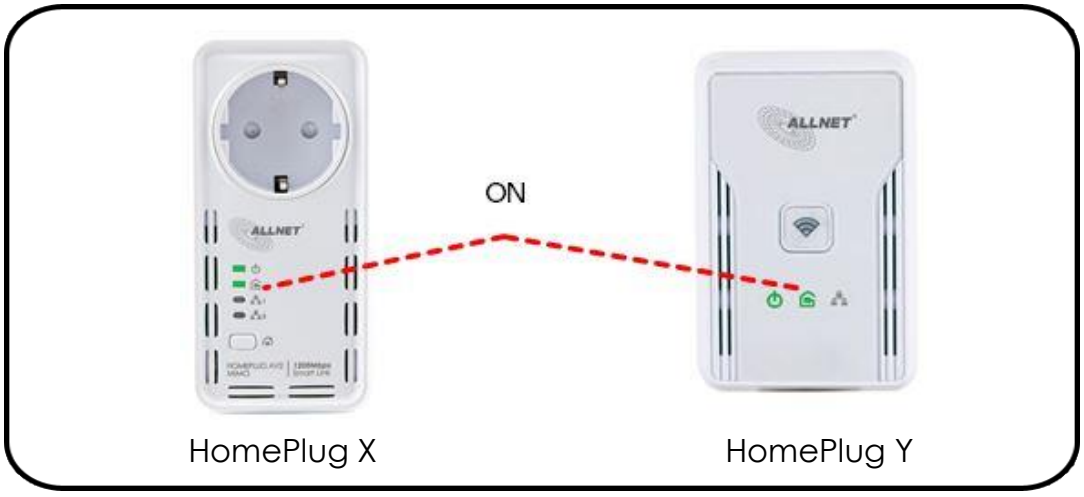
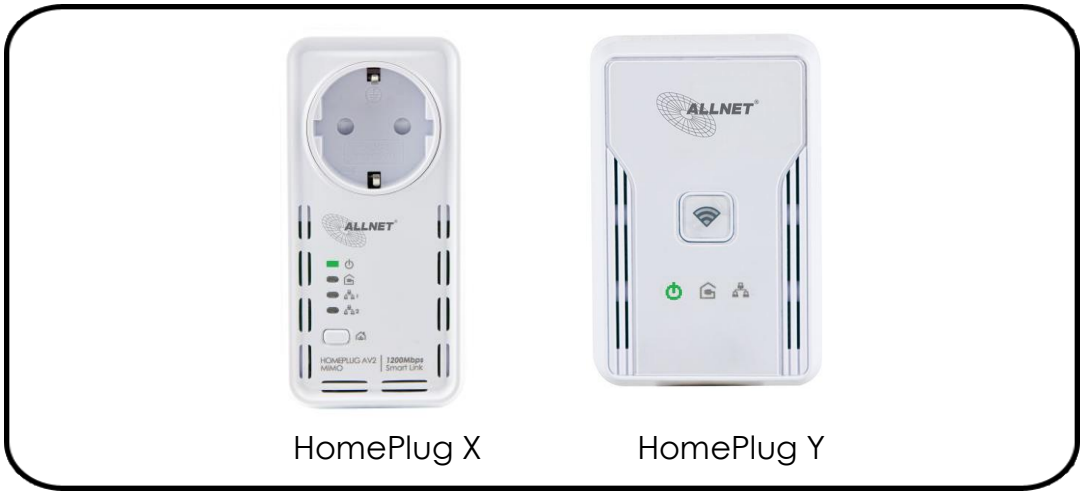
# Step 4

To confirm if the connection was established, check the LEDs. The Power LEDs and the Powerline Activity LEDs on both HomePlugs are ON.




When the Powerline Activity LED on either HomePlug X or HomePlug Y is OFF, this means the pairing was unsuccessful. You have to repeat steps 1 to 3 again until all LEDS in all HomePlug AV devices are on.

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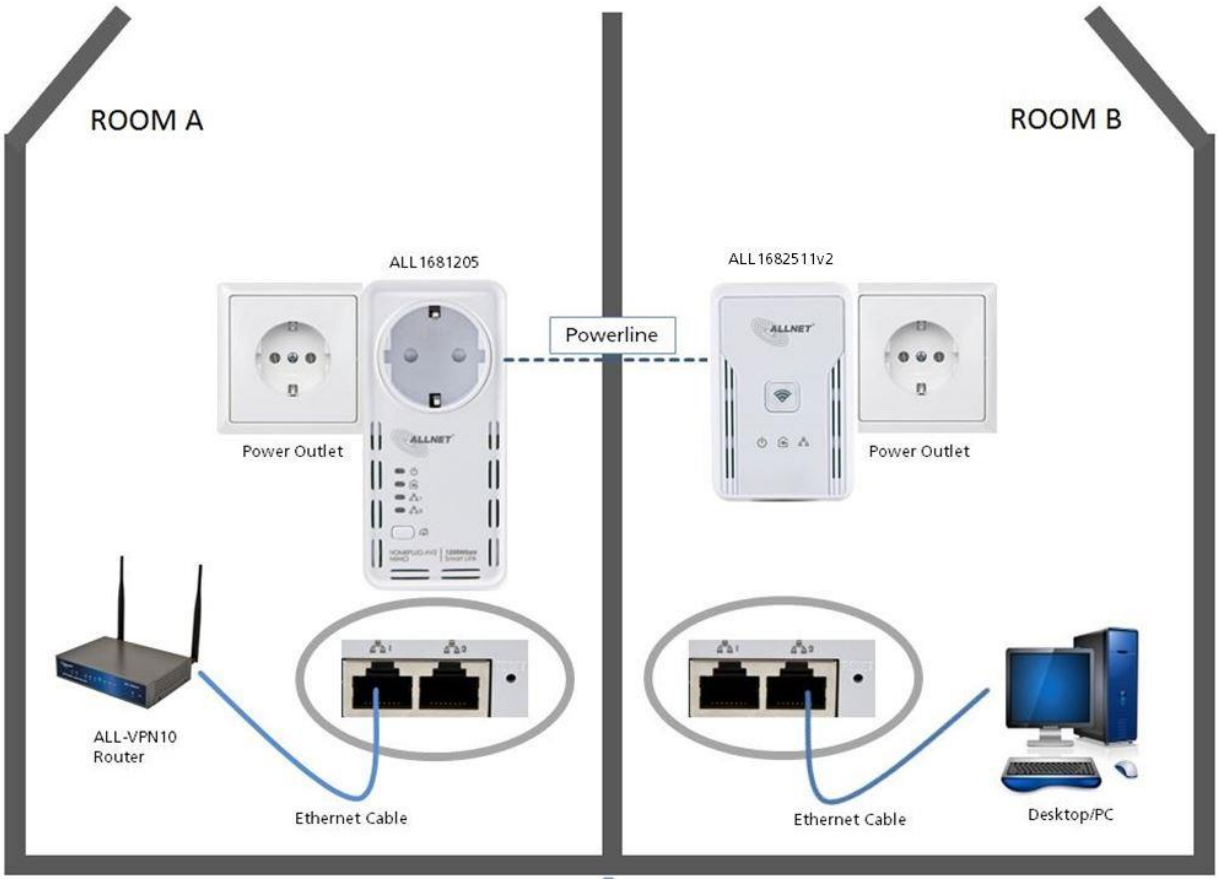
# Step 5

Unplug the HomePlug AVs and then connect them to your Ethernet devices using the Ethernet cables from the product package. After connecting the Ethernet cable, plug the HomePlugs directly to a wall outlet.

An Ethernet-enabled device can be a router, computer, hub, gaming console, IP phone, network printer, or IP TV set-top box.

**Note:** HomePlug AVs work best when connected directly to a wall socket. It is suggested to avoid plugging a HomePlug AV to a power strip or power extension as much as possible. Other electrical devices plugged in the power strip produce electrical noise that may affect the overall performance of the HomePlug.



# Joining an Existing Secured HomePlug AV Network

To enable a new device to join an existing network, Simple Connect will copy the Private Network Name of the existing network to the new HomePlug AV. You only have to pair the new HomePlug AV device to any of the devices within the existing HomePlug AV Network by pressing the Simple connect. If you pressed Simple Connect from multiple HomePlug AVs, only the signal from the first two devices will be processed.

## To join an existing Secured HomePlug AV network using Simple Connect:

## Step 1

Plug HomePlug AV Z beside one of your existing HomePlug AV device. It is important to ensure that you can easily observe the LED behavior of the HomePlugs.

Upon connection, HomePlug Z's LEDs will blink simultaneously and then the Power LED lights ON steadily. Ethernet LED will be ON if there is an ethernet link.

# Step 2

Press Simple Connect for more than 10 seconds from HomePlug AV Z. The Power LED will turn OFF and turn ON to indicate that the button is pressed.

Note: If the Power LED did not turn OFF and on, press Simple Connect again for more than 10 seconds.

# Step 3

Press Simple Connect Button for two seconds on the existing HomePlug AV device. After you release the button, the Power LED will continuously blink. If the Power LED did not blink, press Simple Connect again for two seconds.

Make sure to press Simple Connect Button again on the HomePlug AV Z within two minutes after you press Simple Connect from the existing network.

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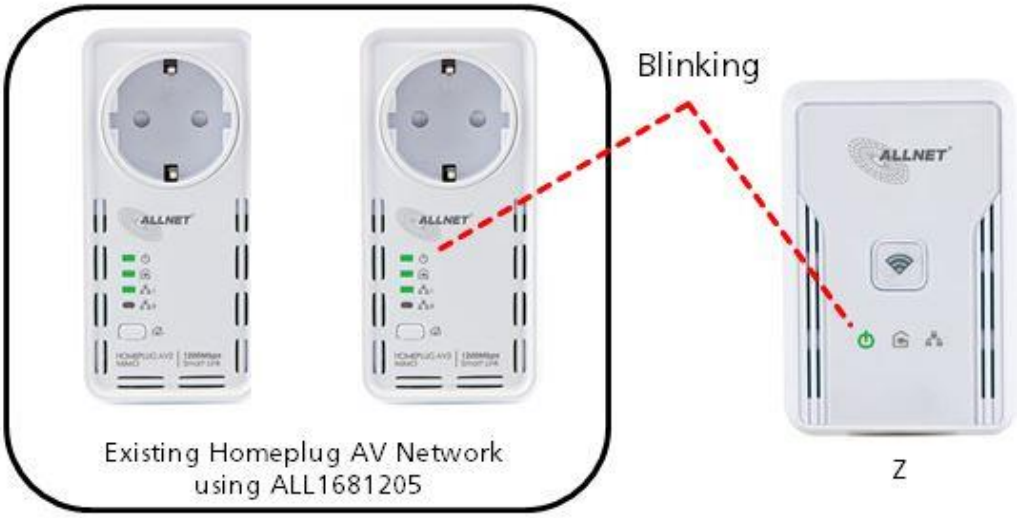


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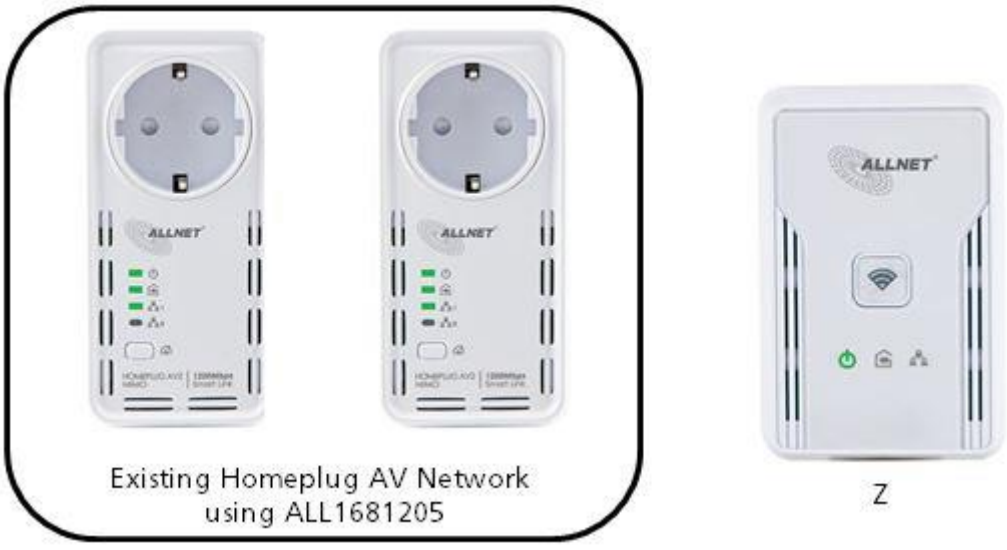
# Step 4

To confirm if the connection was established, check the LEDs. The Power LEDs and the Powerline Activity LEDs on all HomePlugs are on.

If the Powerline Activity LED on HomePlug Z is OFF, this means the pairing was unsuccessful. You have to repeat steps 1 to 3 again until all LEDS in all HomePlug AV devices are on .

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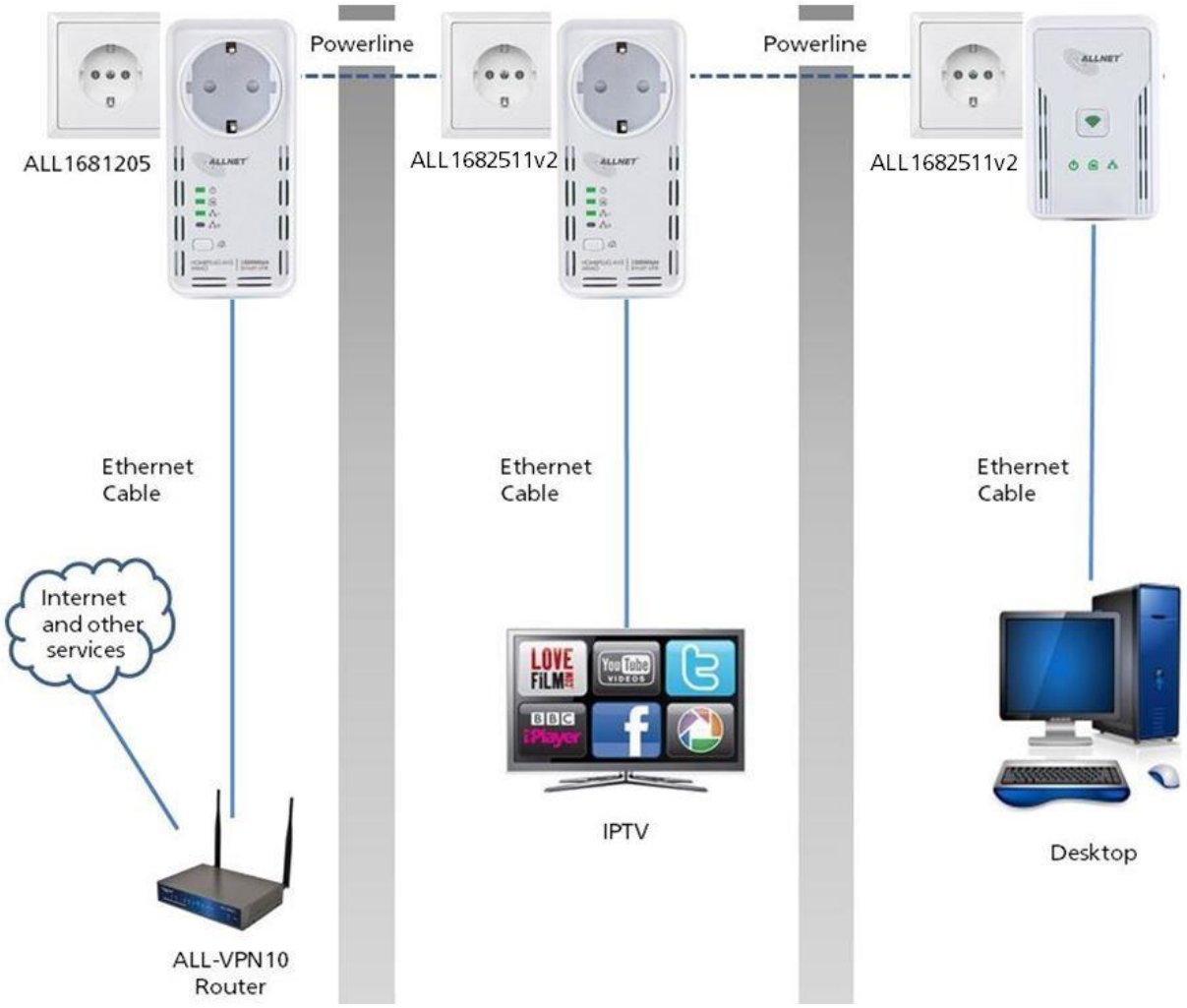
# Step 5

Unplug HomePlug Z and then connect it to your Ethernet device using the Ethernet cables from the product package. After connecting the Ethernet cable, plug HomePlug Z directly to a wall outlet. An Ethernet-enabled device can be a router, computer, hub, gaming console, IP phone, network printer, or IP TV set-top box.

**Note:** HomePlug AVs work best when connected directly to a wall socket. It is suggested to avoid plugging a HomePlug AV to a power strip or power extension as much as possible. Other electrical devices in the power strip produce electrical noise that may affect the overall performance of the HomePlug.



# Determining Connection Rate

Each LED color of the Powerline Activity LED represents a connection rating. The connection rating can only be calculated when the device is part of an existing network. The exact connection rate value can also be viewed using the HomePlug AV Web User Interface.

**GOOD (RED)**
Connection rate is less than 30 Mbps

**BETTER (Amber)**
Connection rate is between 30 to 80 Mbps

**BEST (Green)**
Connection rate is more than 80 Mbps

# Power Saving Mode

After 15 minutes of Ethernet inactivity, HomePlug AV will enter Power Saving Mode. The Power LED will start BLINKING slowly to indicate its Power Saving Status.

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Conditions of a HomePlug AV on a Power saving mode:

- Power LED is blinking slowly
- Powerline Activity LED and Ethernet LED are turned OFF.
- When connected to a PC or Laptop, if there is network card inactivity, HomePlug AV is also on a Power Saving mode.

**Note:** If another device is on a Power Saving Mode, the HomePlug AV Utility may detect the device but would be unable to configure its respective setting.

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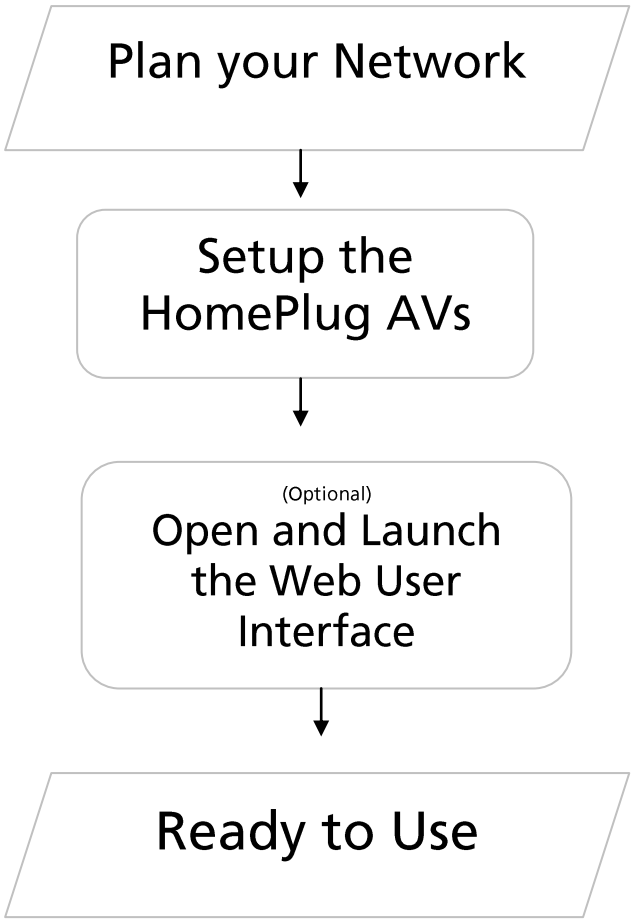
# Getting Started

Setting up the device is easy. The flowchart below provides an outline of the steps you need to complete the installation. There are brief descriptions beside each step to help you along. Detailed instructions are provided in the subsequent pages.




Use an Ethernet cable to connect HomePlug AV to your computer or Ethernet device.

Open Homeplug AV Web User Interface and apply manual configuration changes and monitor device activity.

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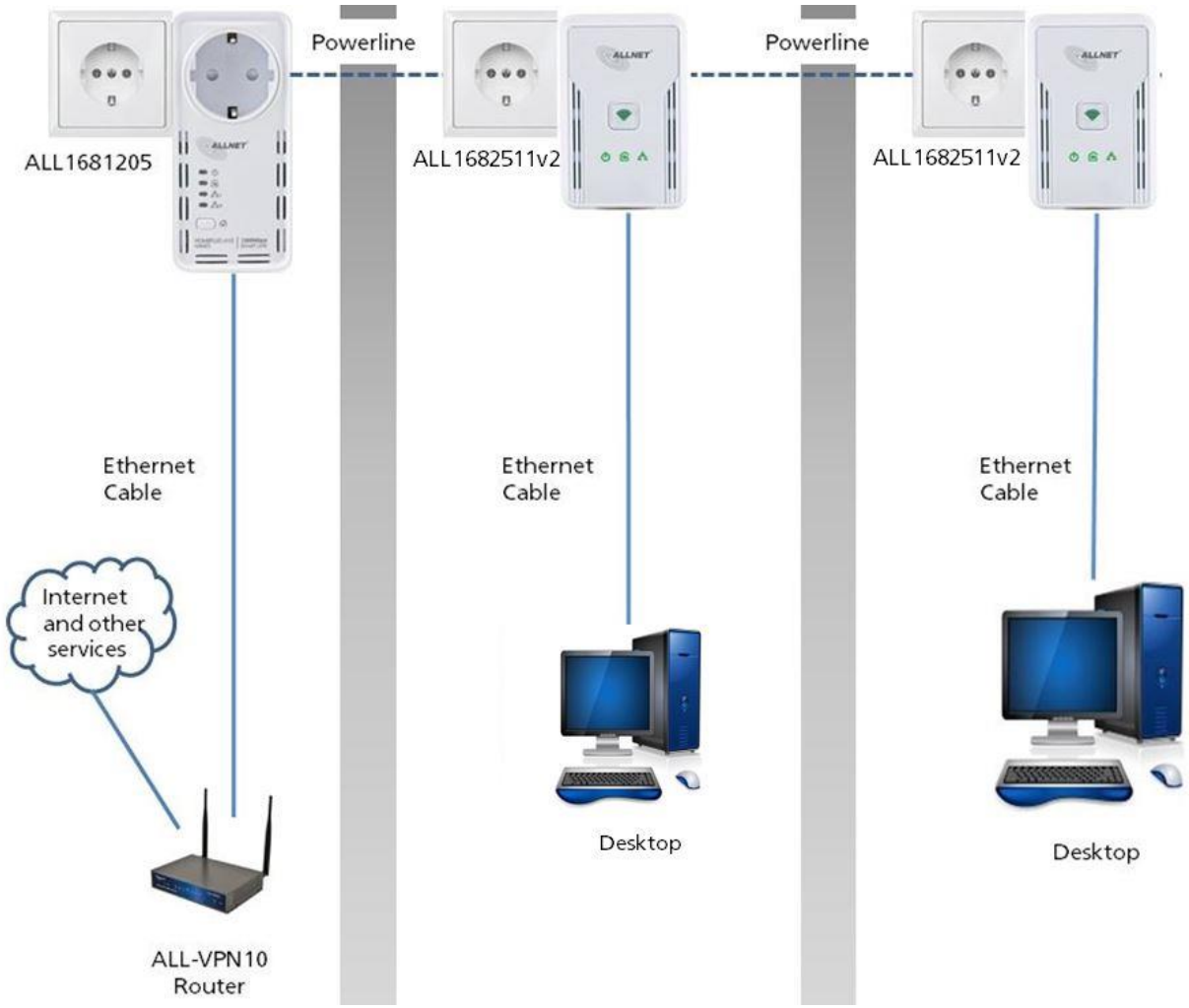
# Plan Your Network

Here are ideas on how you can plan your HomePlug AV network.

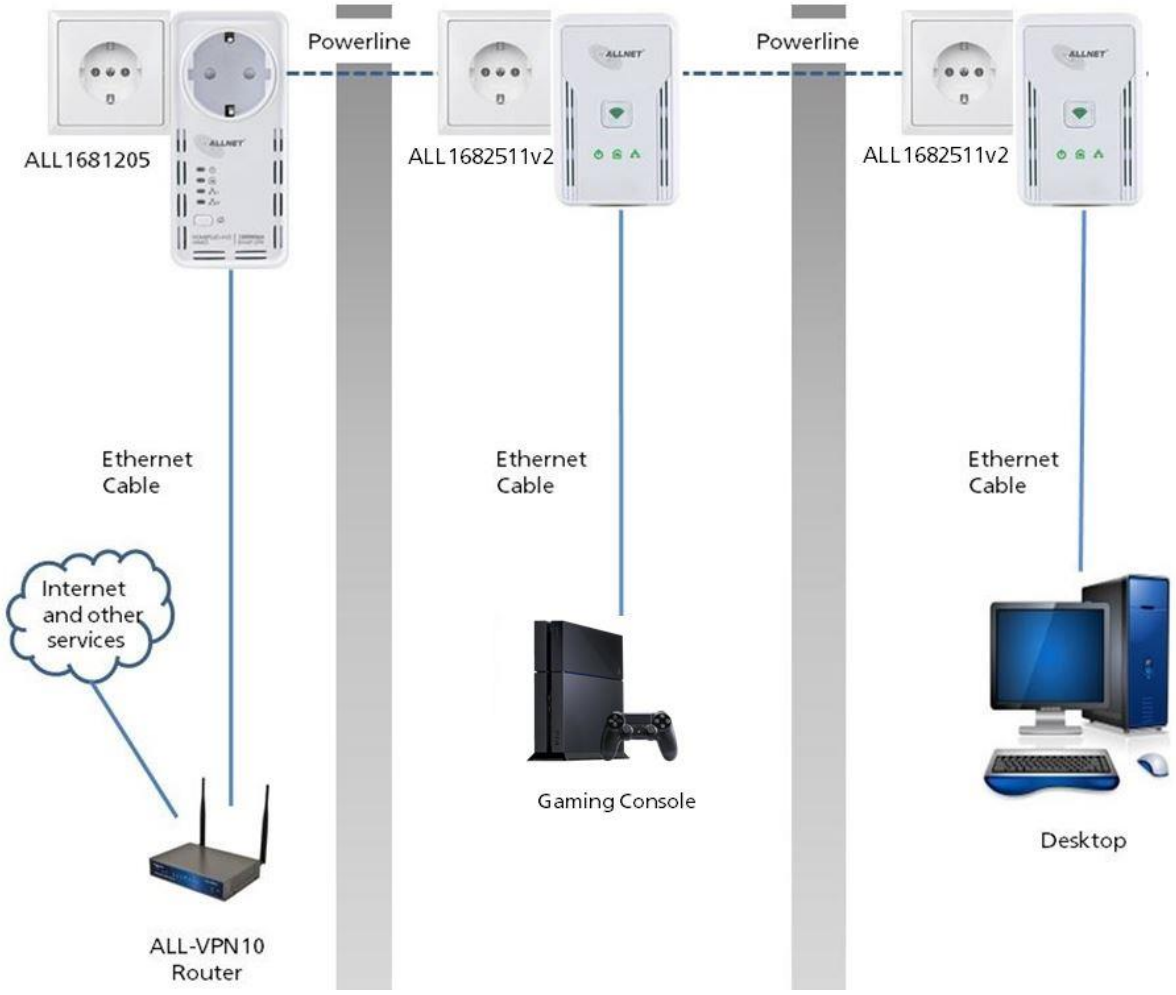
## Local Network

Share - ultra fast - Internet connection with any computer wherever it is in the house.



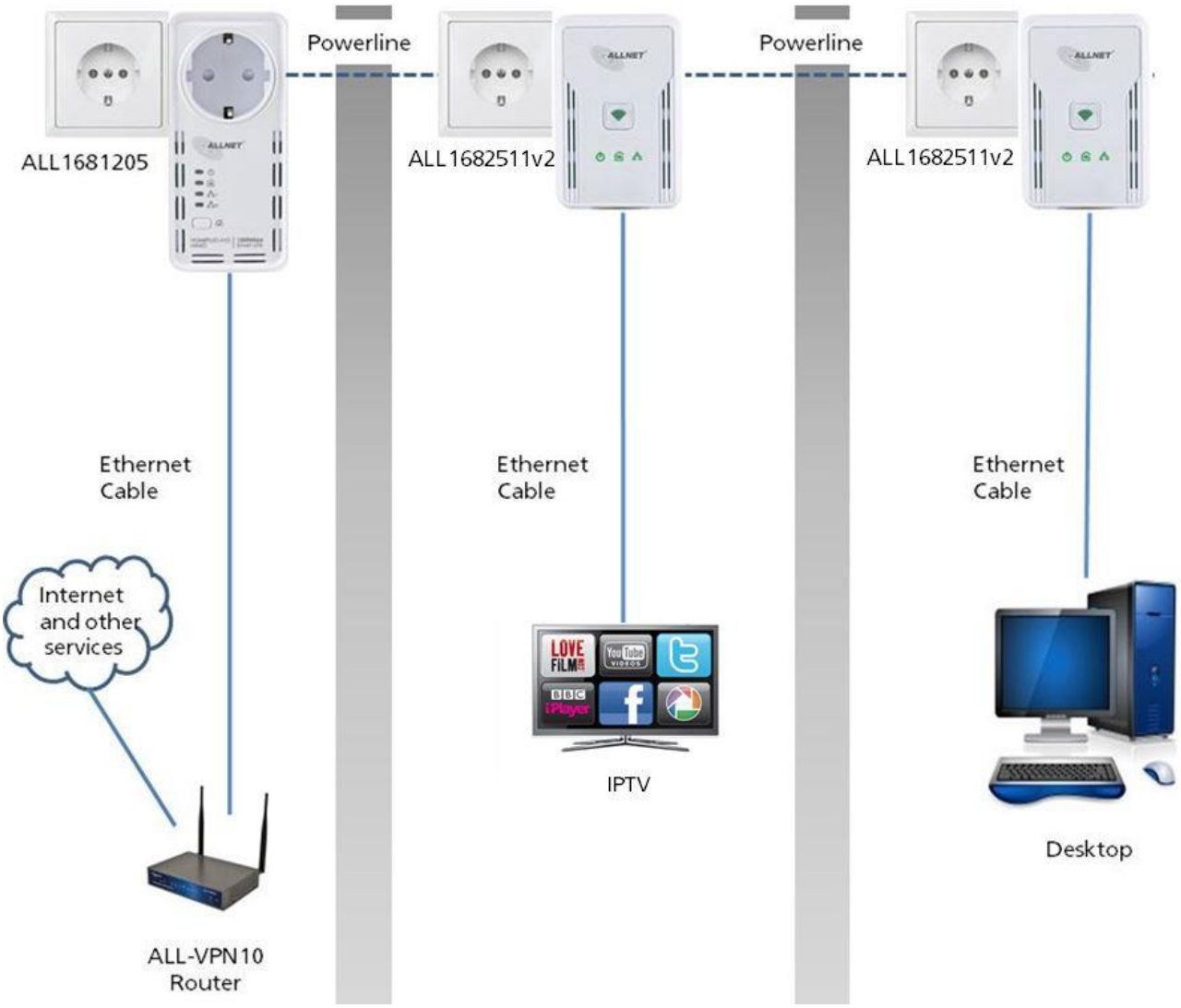
# Gaming Network

Connect your gaming console to the Internet and compete with other online players.



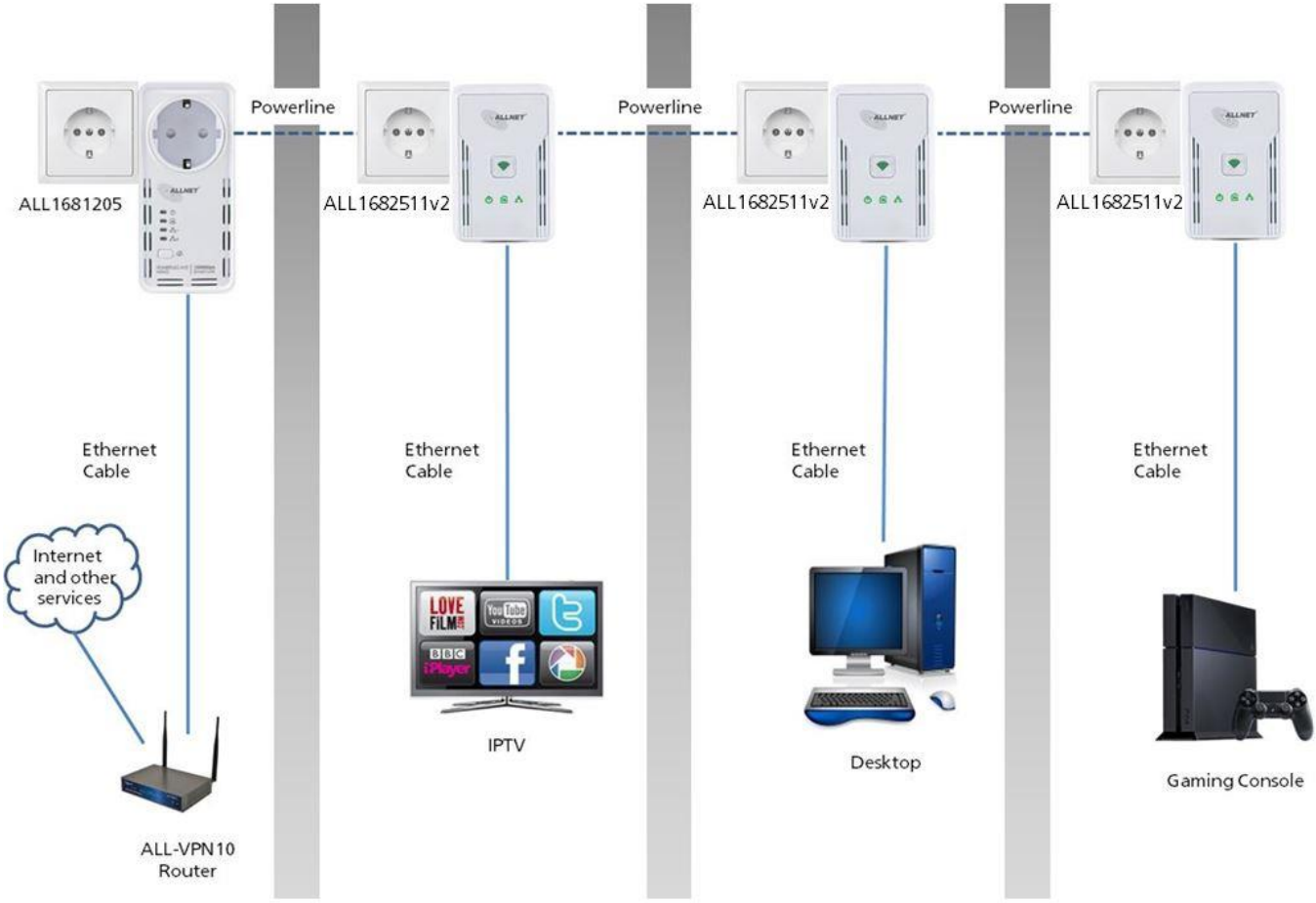
# Entertainment Network

Experience IP TV streaming into your home entertainment system.



# Media Network

Realize your high tech lifestyle by converging your IP devices into a single network.




# Setup the HomePlug AVs

## For Twin Pack

HomePlug AVs from a Twin Pack are preconfigured to have a common Private Network Name unique for that pair. All you need to do is connect the HomePlug AVs to an Ethernet device and then plug it to a wall socket.

To setup a pair of HomePlug AVs:

1. Plug one end of the Ethernet cable to your Ethernet device and then connect the other end to HomePlug AV.

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2. Connect the HomePlug AV to a wall socket.
3. Plug one end of the Ethernet cable to your other Ethernet device and then connect the other end to HomePlug AV.
4. Connect the HomePlug AV to a wall socket.

# For Single Pack

A HomePlug AV from a single pack uses a random Private Network Name that prevents it from communicating with other HomePlug AVs. To add it into an existing network, you need to use either the Simple Connect button or the HomePlug AV Web User Interface to change the random Private Network Name to the Private Network Name being used by the existing HomePlug AV network.

To add a HomePlug AV to an existing network:

1. Plug one end of the Ethernet cable to your Ethernet device and then connect the other end to HomePlug AV.
2. Connect the HomePlug AV to a wall socket.
3. Add the new HomePlug AV by using either Simple Connect or the HomePlug AV Web User Interface. To use Simple Connect, please refer to Joining an Existing HomePlug AV Network. To use the HomePlug AV Web User Interface please refer to Private Network Name.

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# Using the Web User Interface

Web User Interface will allow you to configure HomePlug AV with WiFi. It is mainly used for Wireless Configuration, Changing the Private Network Name, detecting other HomePlug AV's in the network, and measuring the throughput of devices. Installation is straightforward and the user interface is easy to use.

**Note:** To use the Web User Interface, you need a computer using a Windows or MAC operating system. The Web interface works with various web browsers such as Internet Explorer, Firefox, Safari, and Google Chrome.

# Requirements

To ensure the smooth run of the Web User Interface, it is suggested that your computer must be able to meet the following requirements:

- Windows XP (32 and 64 bit), Vista (32 and 64 bit), Windows 8 (32 and 64 bit)
- 300 MHz Processor
- 128 Mb of RAM
- .NET Framework
- Windows Installer 3.1 for Windows XP (32 and 64 bit)
- Network Interface Card
- 128 Mb of free hard disk space

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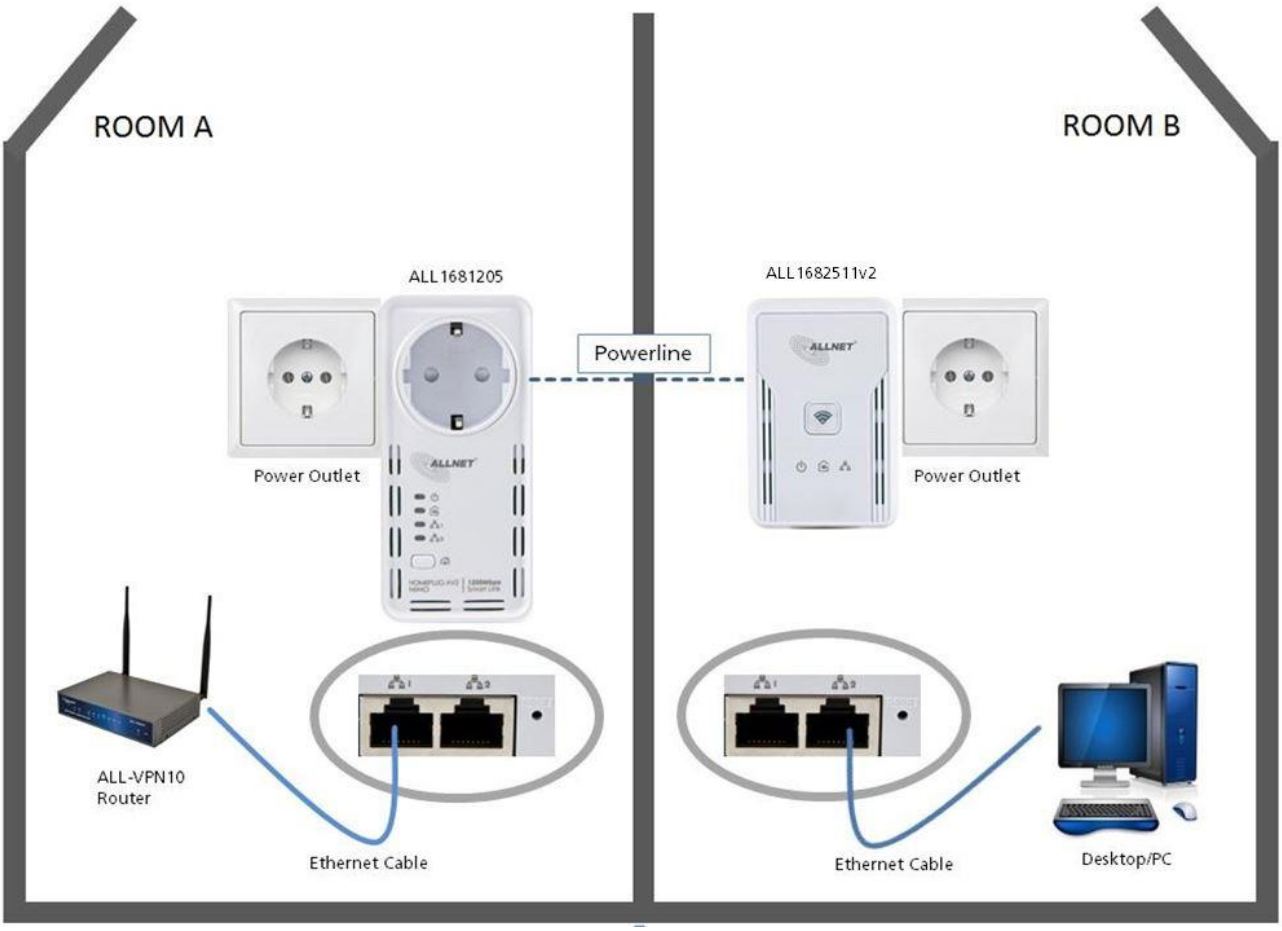
# How to access the Web User Interface?

Web User Interface will allow you to configure HomePlug AV with WiFi. It is mainly used for Wireless Configuration, Changing the Private Network Name, detecting other HomePlug AV's in the network, and measuring the throughput of devices. Installation is straightforward and the user interface is easy to use.

1. Ensure to follow the connection set up below.




2. Connect an Ethernet cable from the Desktop/PC to any of the Ethernet ports of the ALL1682511v2.
3. On your computer, turn OFF Wireless Adapater (if applicable).
4. Open and launch a Web Browser.

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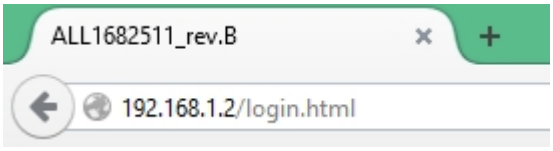
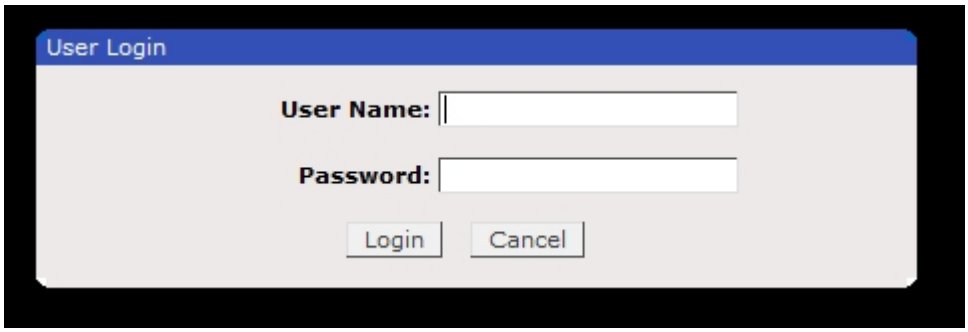
5. Type in **192.168.1.2** on the Web Browser's URL Link then hit the enter key.




6. Enter '**admin**' as Username and '**admin**' as Password. Then click Login.




7. You will now be directed to the Web User Interface page.

   It has 3 main tabs: Status, Network and Management Tab.

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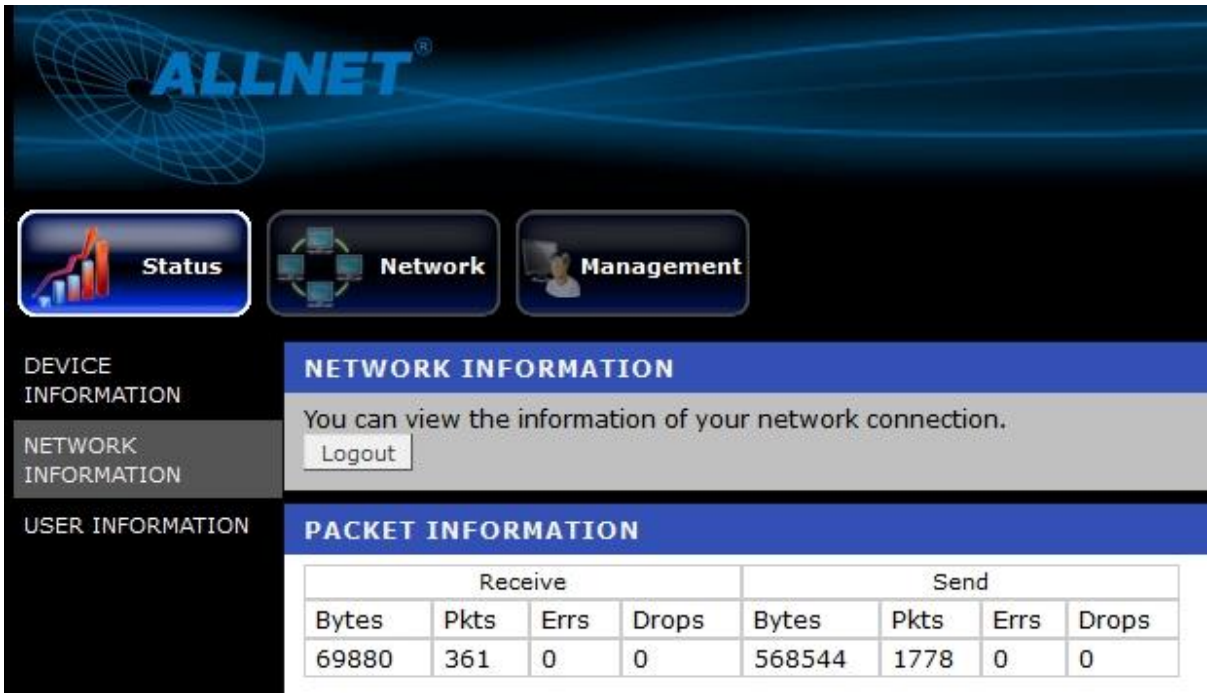
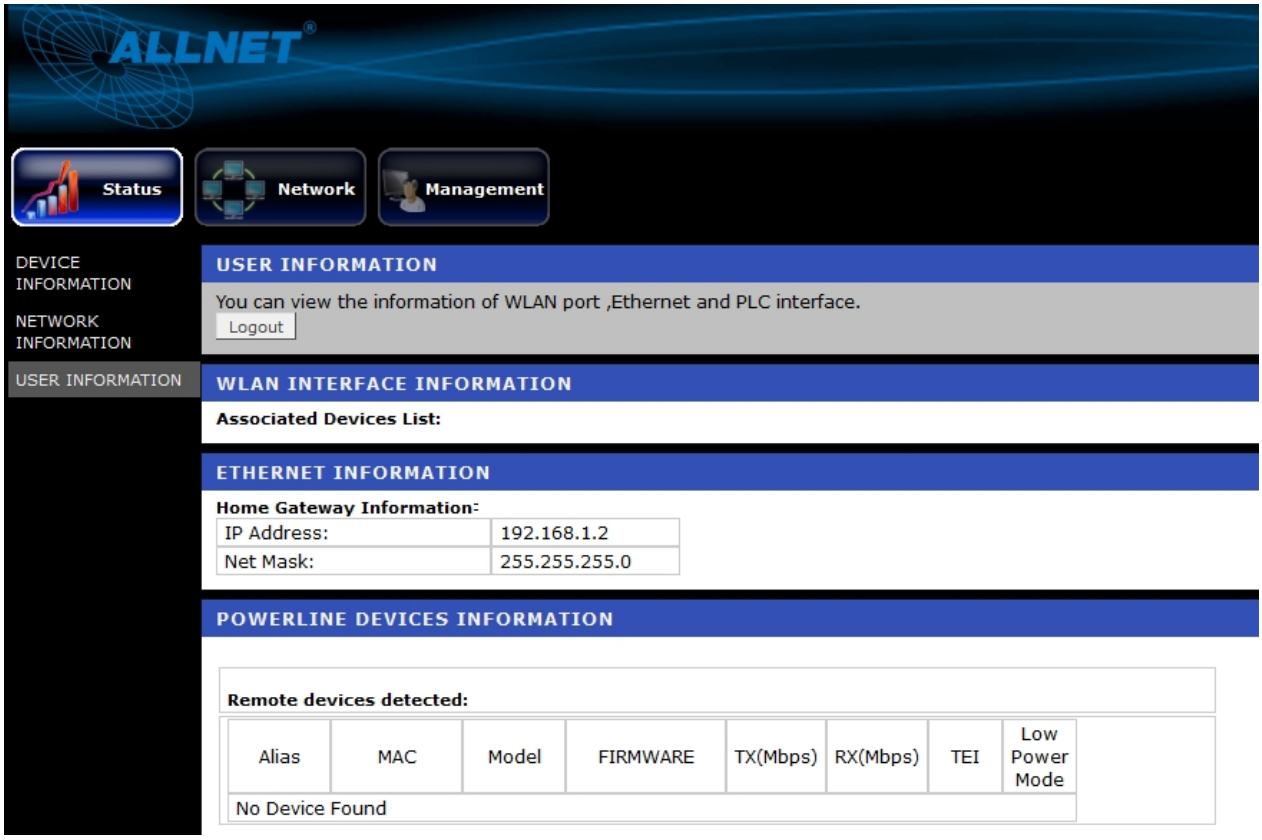
# Status Tab

1. **Device Information.** Allows you to check your Device MAC Address and Software Version.

2. **Network Information.** Displays the Packet Information of your HomePlug AV device.




3. **User Information.** Displays the information of the Ethernet and WLAN.




### Remote Device Information

Displays information about remote HomePlug AV's detected in the network. Only HomePlug AVs using the same Private Network Name as the local HomePlug AV will appear in the Remote Devices list.

Remote Device Information displays the following information:

**Device MAC Address.** Displays the Remote HomePlug AV MAC Address.

**Connection Rate (Tx/Rx).** Displays the Transmit and Receive connection rate for each active HomePlug AV device.

**TEI.** Displays the Terminal Equipment Identifier.

# Network Tab

1. **WLAN Setting.** Allows you to check your Device MAC Address and Software Version.

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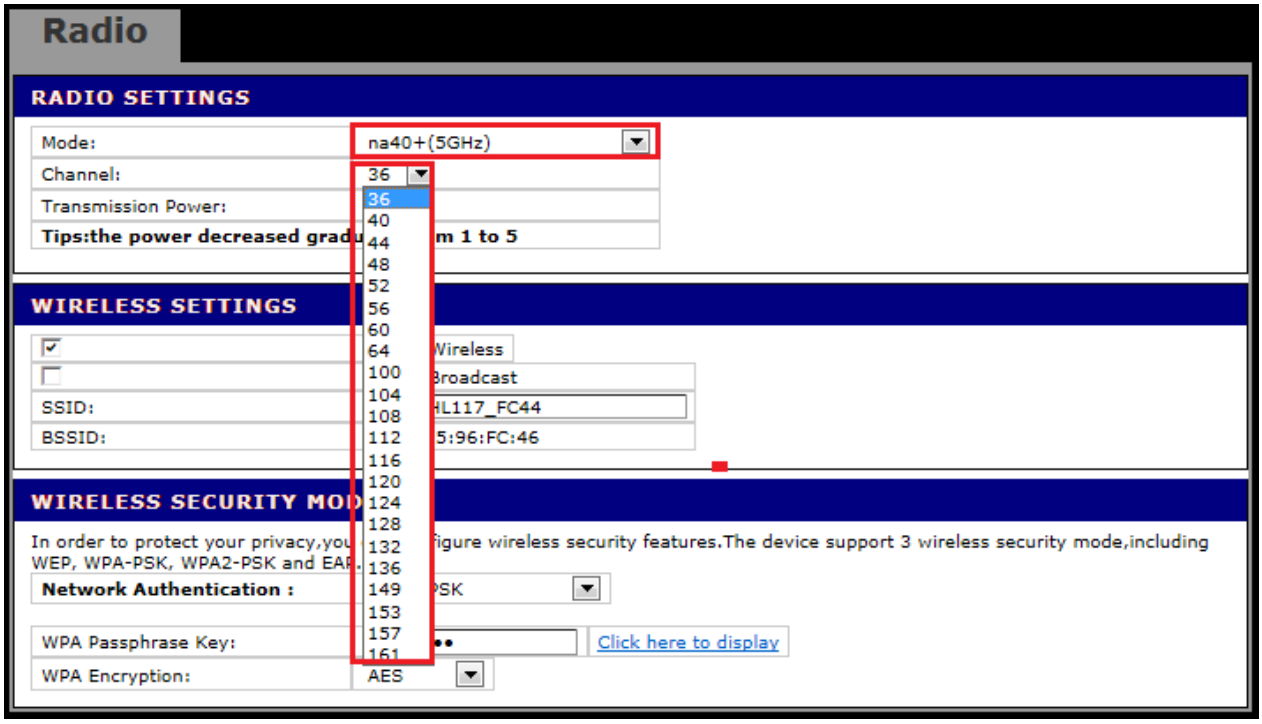
## Radio Settings

a. **Modify the mode,** or change the wireless standard implemented in your HomePlug AV.

b. **Define the Wireless Channel**, or limit the number of devices connected to your network.

At 5 Ghz Mode/Channel




At 2.4 Ghz Mode/Channel

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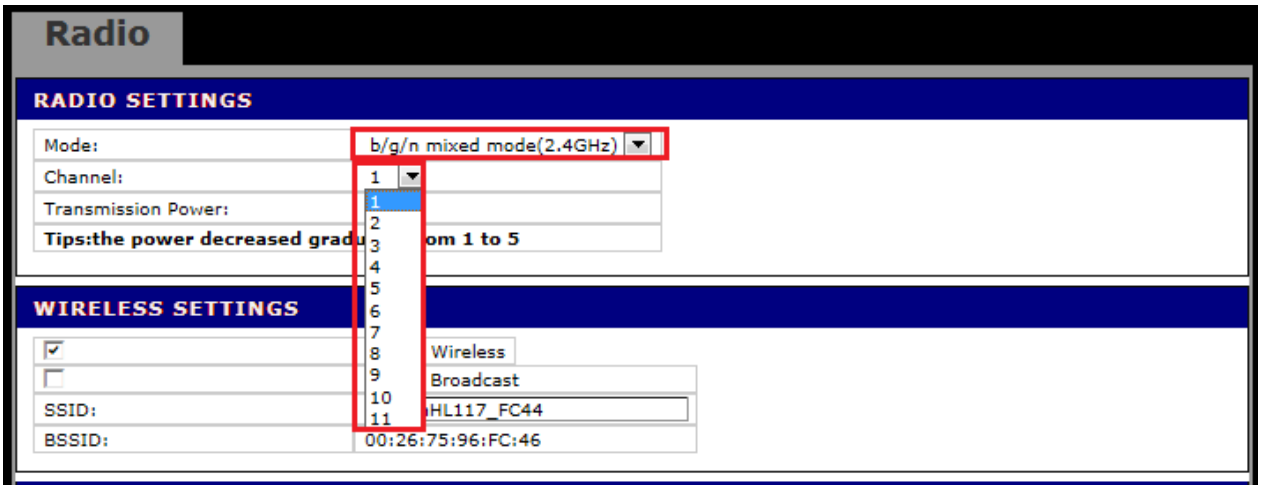
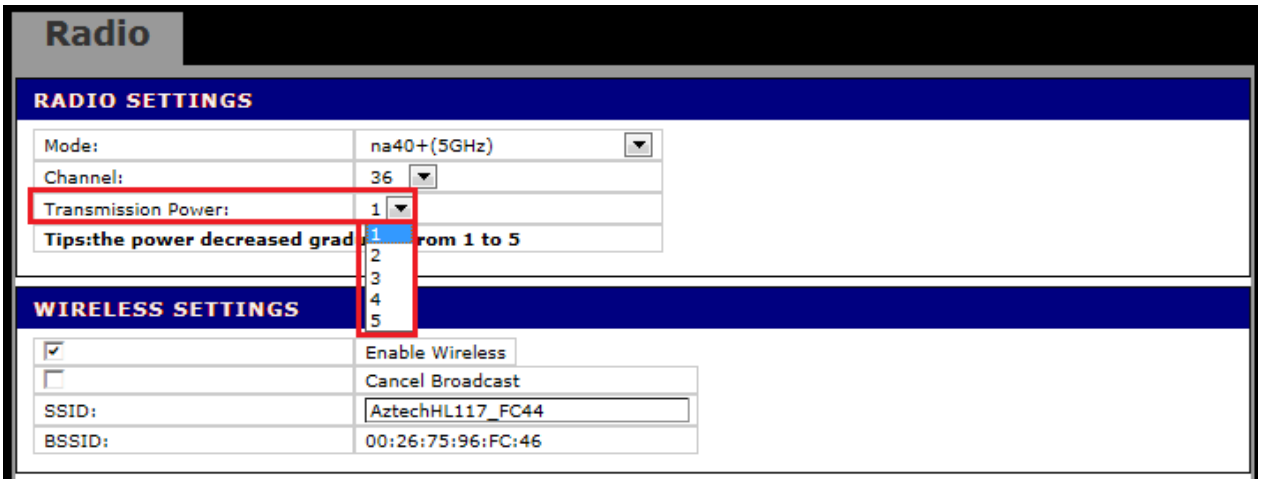



Note: By default, Wireless Mode is set at ng40+ **(2.4Ghz)**

c. **Set the Transmission Power**. Value of the power is decreased gradually from 1 to 5.




## Wireless Setting

a. **Wireless Enable.** You may enable or disable Wireless network visibility in ALL1682511v2.

b. **Cancel Broadcast.** This will hide your Wireless Network from being detected.

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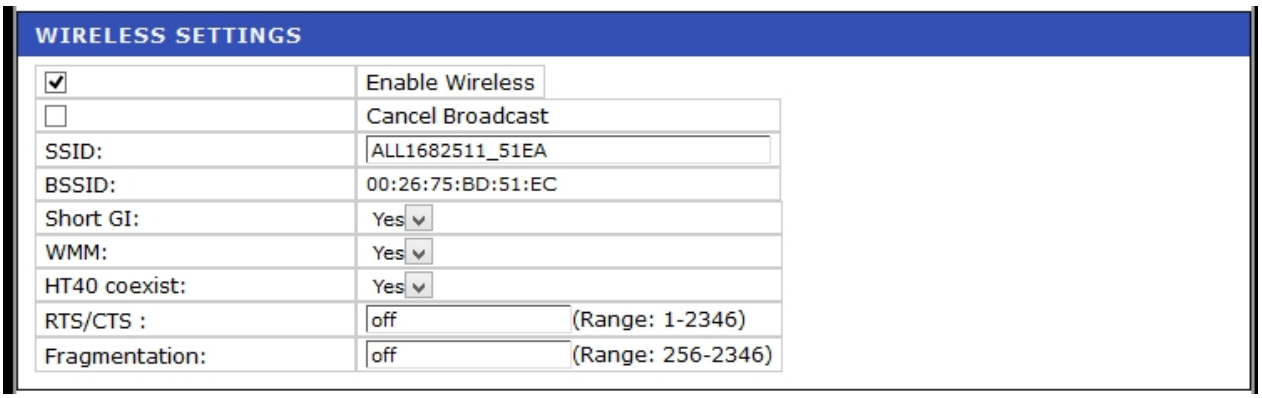
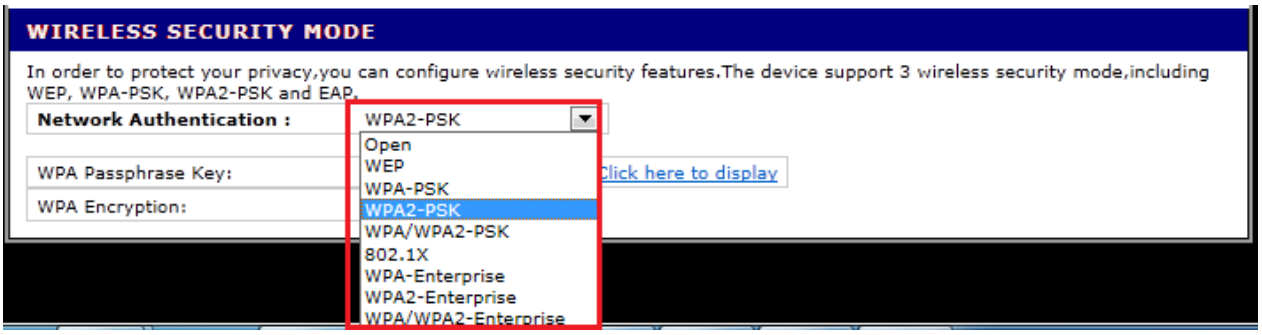
c. **Change the SSID Name.** By changing this, you are changing the name of your network.




## Wireless Security Mode

a. **Network Authentication.** You may configure wireless security features. ALL1682511v2 supports 3 Wireless Security Mode including WEP, WPA-PSK, WPA2-PSK and EAP.




2. **Powerline Settings.** Allows you to configure your Powerline Settings.

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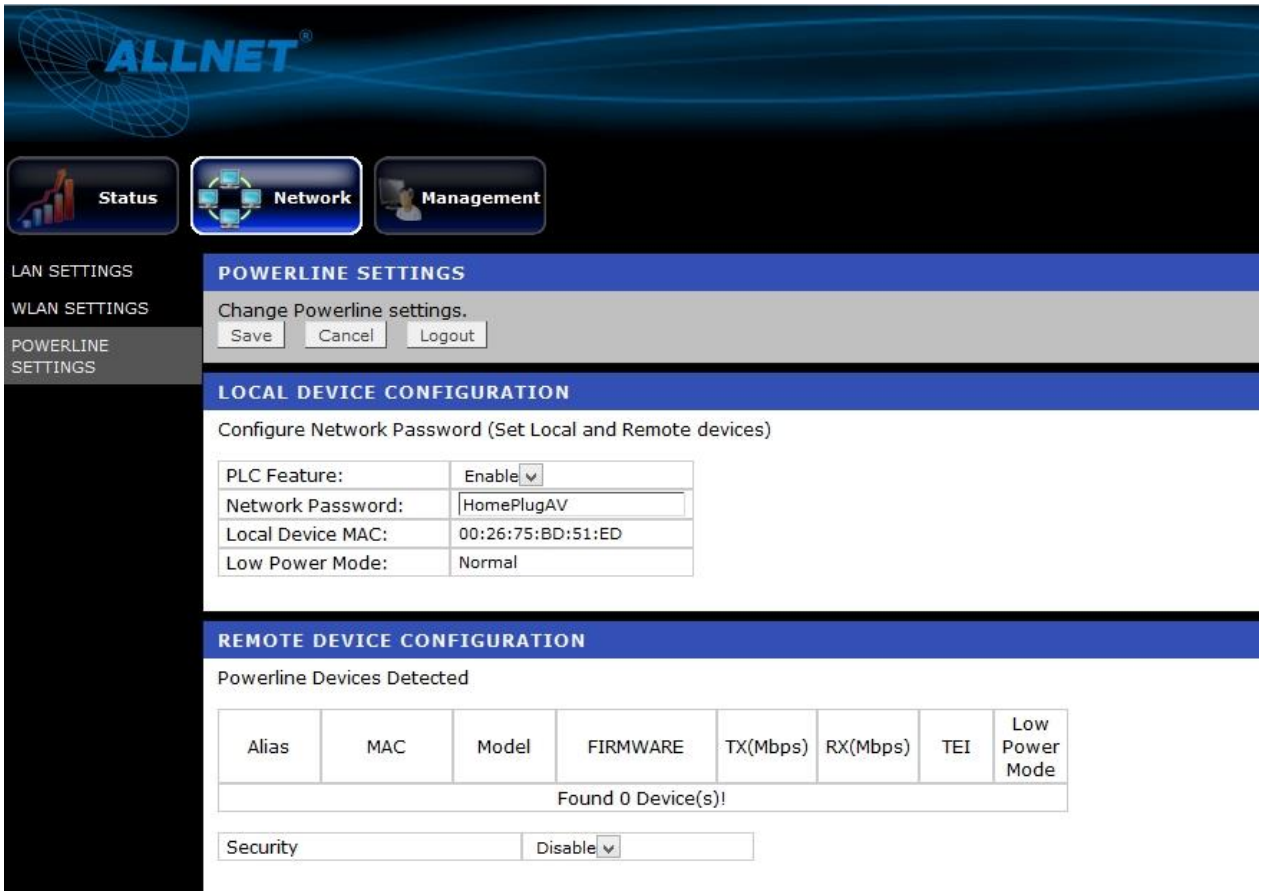
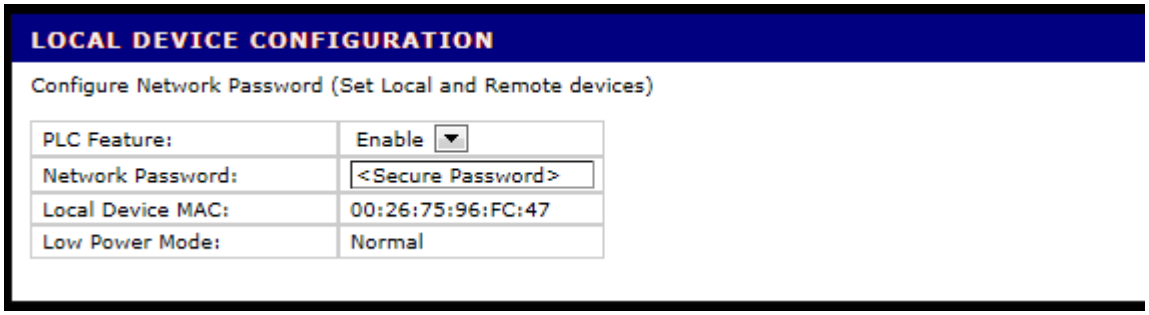



## Local Device Configuration

This function allows you to enable/disable the PLC feature of your device. It also allows you to change the Network Password or the Private Network Name.

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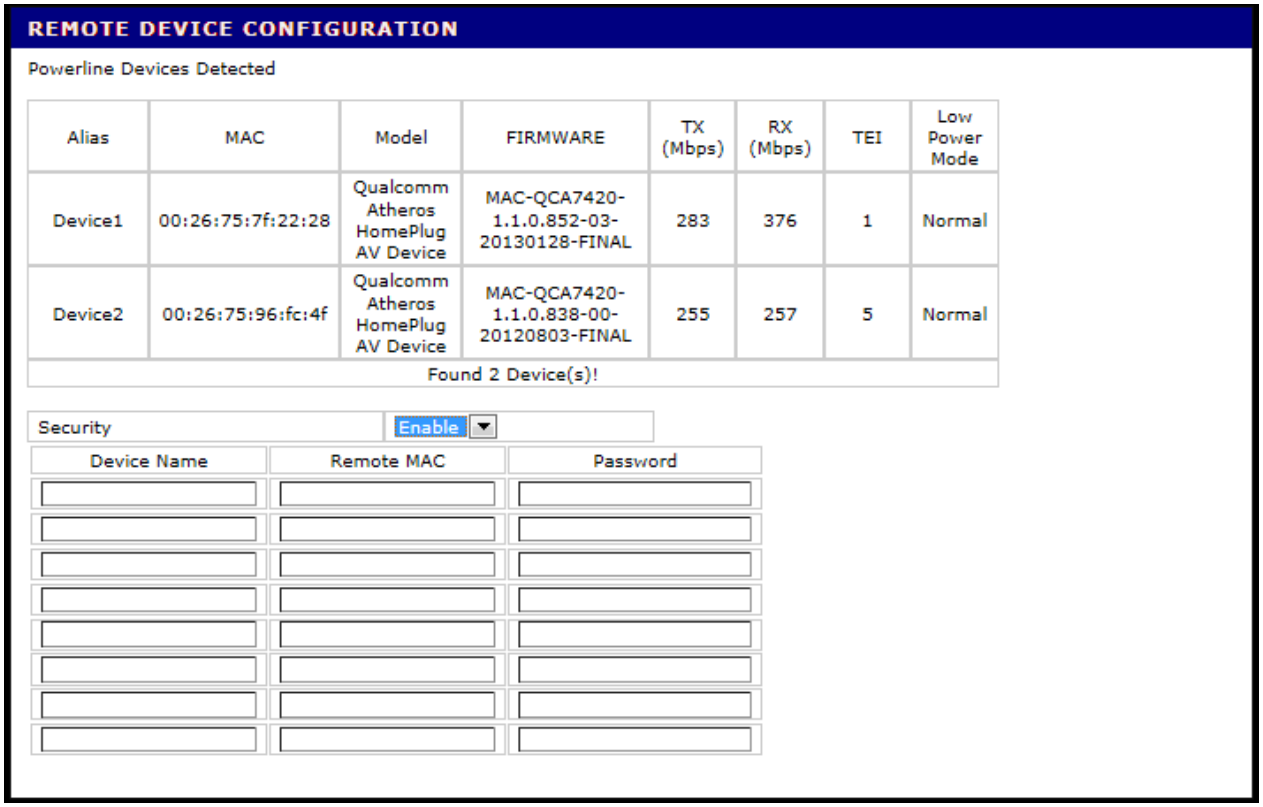
## Remote Device Configuration

Allows you to add additional remote devices to your network. You can only enter the Remote MAC Address and respective Password of your other HomePlug AV adapters.

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Management Tab

**User Management.** Allows you to change the log-in password of this ALL1682511v2.

**Device Management.** You may have the option to upgrade the firmware, restart the device, or restore the device to Factory Settings.

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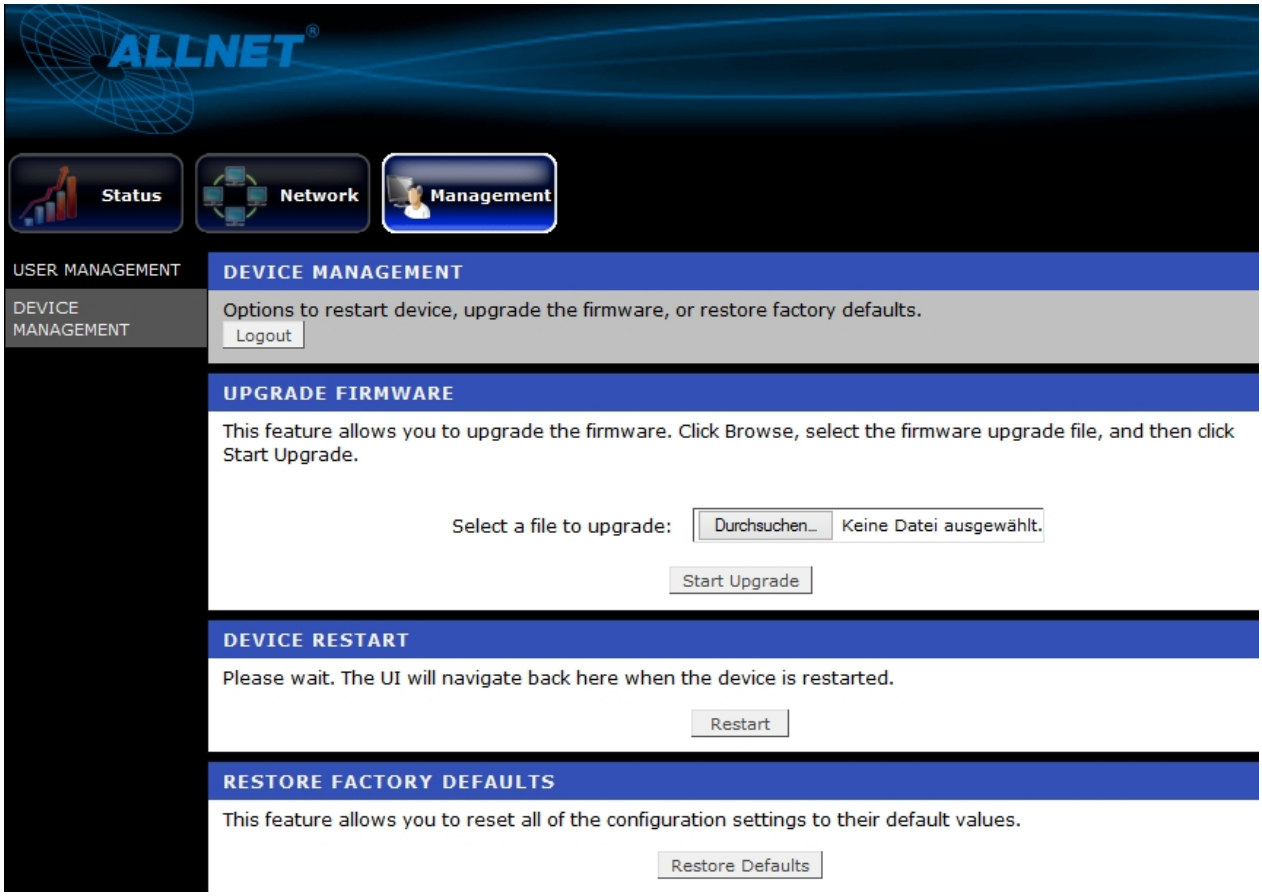
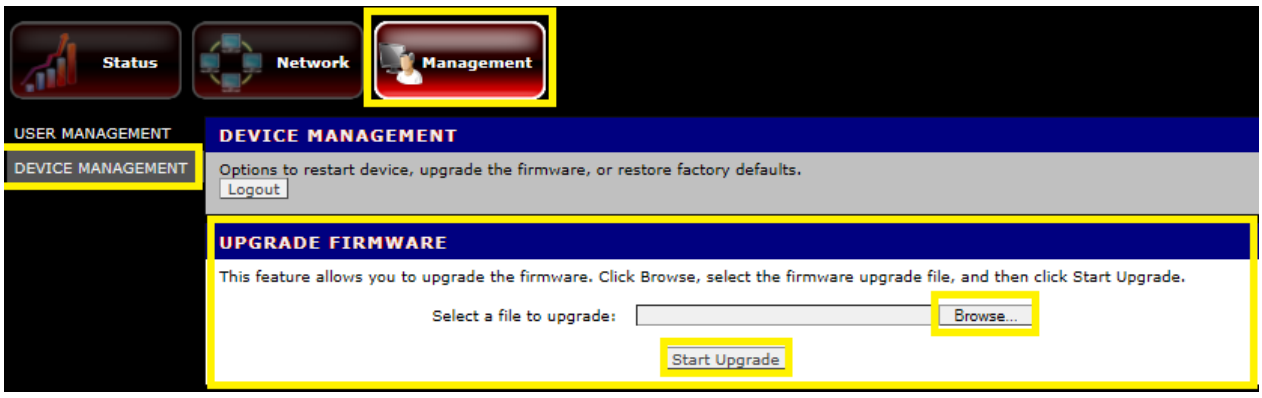



# How to Upgrade Firmware?

Use Firmware Upgrade to upgrade the firmware of HomePlug AV. After upgrading the firmware, HomePlug AV will still retain the same Private Network Name and MAC address settings. Before you proceed with the upgrade, you need to have the Firmware File (FWUpgrade). You can download upgrade files from the product's Web site.

1. Go to Management Tab, Device Management, Upgrade Firmware.

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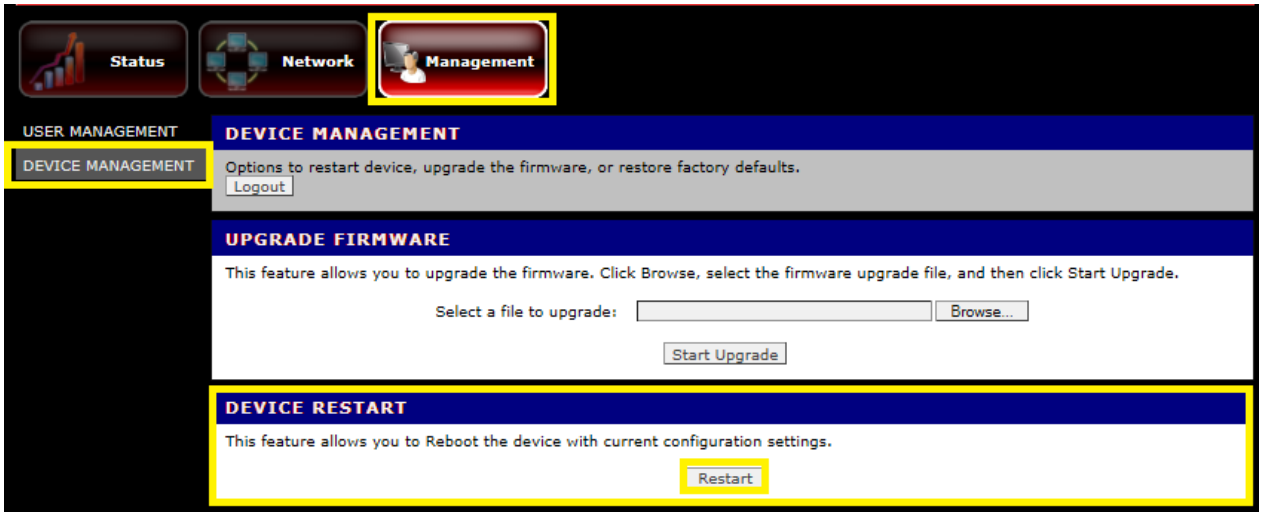
2. Click Browse, Select the Firmware File (fwupgrade file), then Click Start Upgrade

   Firmware Upgrade will take about 3-5 minutes to complete.

   IMPORTANT: After Firmware Upgrade, please Restore to Factory Default Settings.

**Device Restart.** Allows you to restart the device.




## Device Reset

User may have the option to reset the device to Factory Settings.

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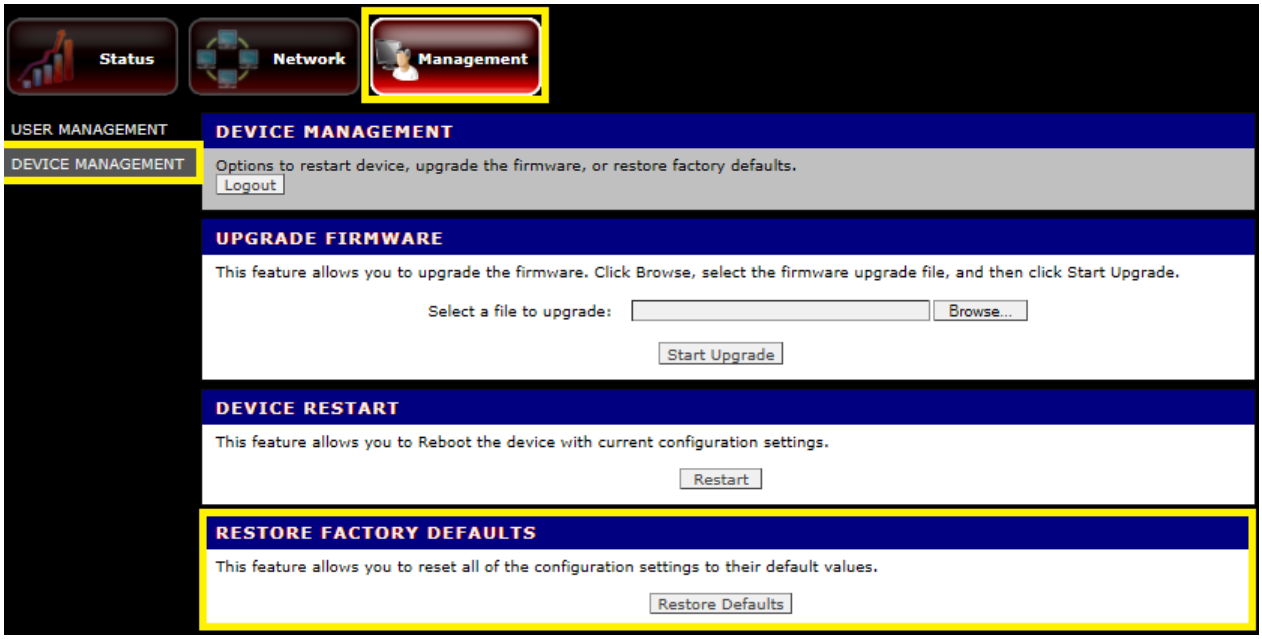


**Note:** You can also perform a reset to the factory default when you press the WPS button on the device more than 5 seconds.

# To change the Private Network Name

Private Network Name provides the function to manually change the Private Network Name of local and remote HomePlug AVs. A Private Network Name is a string of 8 to 64 characters enables HomePlug AV devices to communicate with each other.

If you intend to create multiple networks, you can assign different Private Network Names among your devices. You have to, however, make sure that at least two HomePlug AVs have a similar Private Network Name. A HomePlug AV that uses a unique or random Private Network Name will not be able to communicate with other devices under a different Private Network name.

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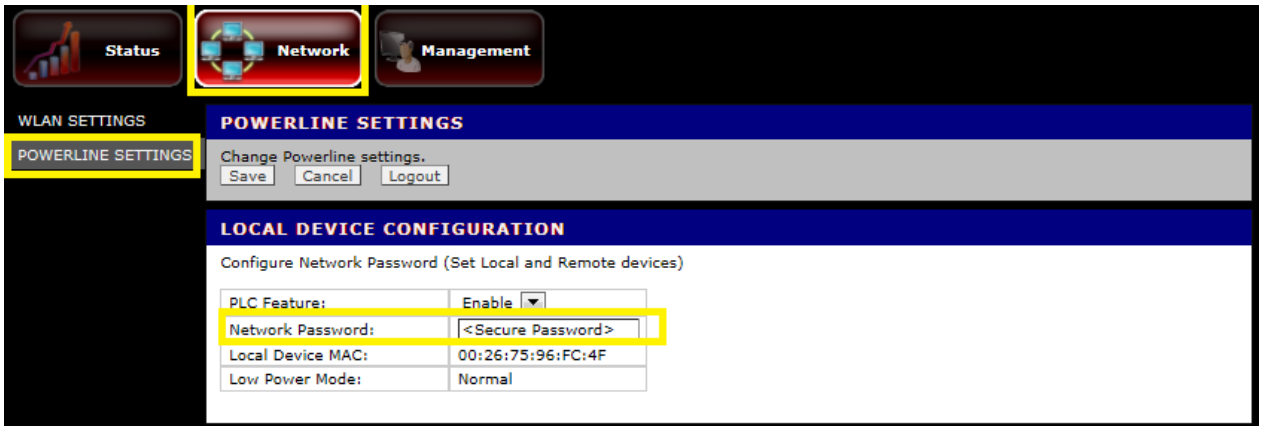


The Private Network Name is the Network Password.

**Note:** In case you cannot connect into the network after changing the Private Network Name, please power cycle the device. To power cycle, disconnect and then reconnect HomePlug AV from the power outlet.

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## Local Private Network Name

Local Private Network Name refers to the Private Network Name of the HomePlug AV that is directly connected to the computer where you use the Web User Interface.

To change the local Private Network Name:

1. Open the Web User Interface.
2. Click HomePlug Tab, then Choose Security.
3. Type the new Private Network Name. This field is case sensitive. It accepts 8 to 64 alphanumeric characters including punctuation marks but no spaces.
4. Click Apply. When the process is complete, the message Settings Applied appears.

## Remote Private Network Name

Without leaving your computer, you can change the Private Network Name of remote HomePlug AV devices, provided they are using the same Private Network Name as your local HomePlug AV. You cannot change the Private Network Name of remote devices that is not currently networked with your local HomePlug AV.

**Note:** When changing the Private Network Name of remote devices, you will need the Device ID that appears on the label pasted on the device. It will be more helpful if you list down the Device ID of all your HomePlug AVs to enable you to remotely change their settings using the HomePlug AV Web User Interface.

To change the Private Network Name of a remote HomePlug AV:

1. Open the Web User Interface, Under Network Tab, Powerline Settings
2. Go to Remote Device Configuration.
3. Enable Security

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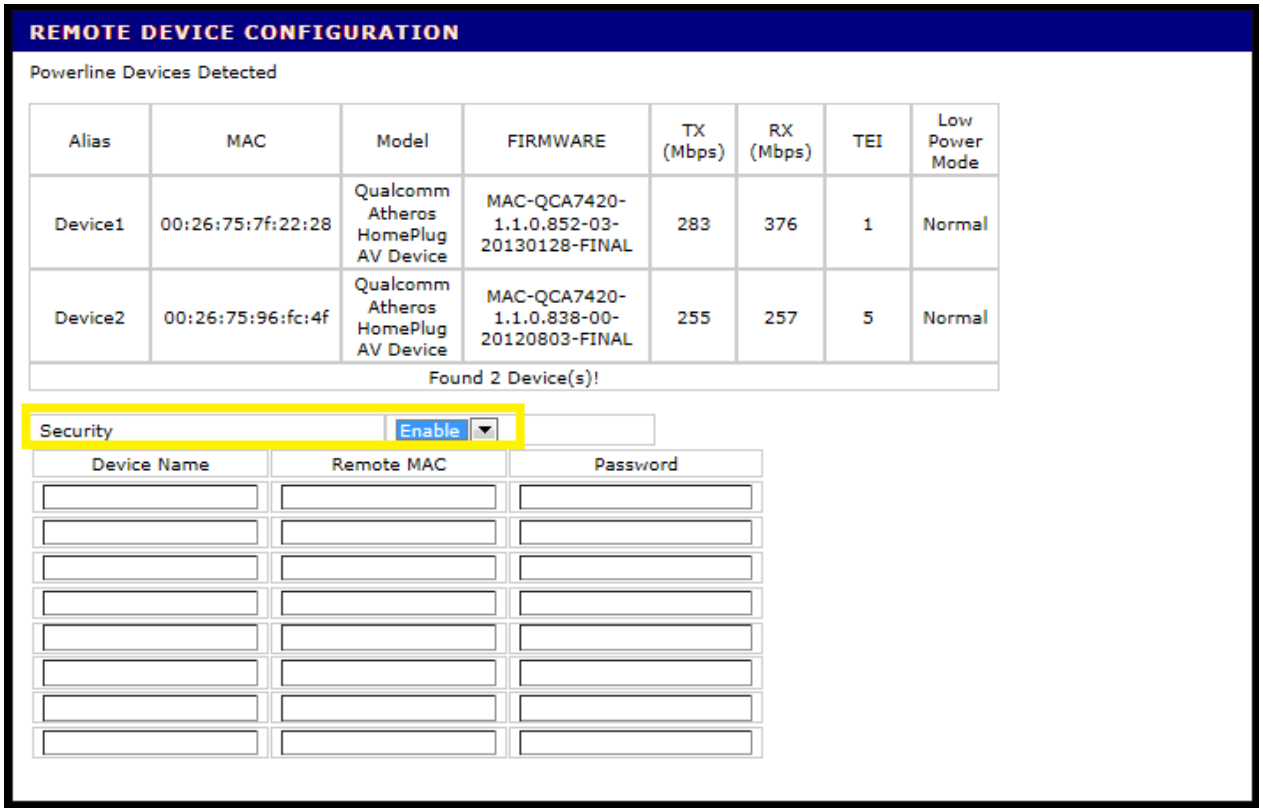


4. Type the Device Name (If any).
5. Enter the Remote MAC Address of the other HomePlug AV.
6. Enter the Device Password. The Device Password can be found on the label sticker on each respective device.

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7. Click Save. When the process is complete, the message Settings Applied appears.

   After changing the Private Network Name of the remote HomePlug AV, it will no longer be able to communicate with your local HomePlug AV, unless you use a similar Private Network Name for your local HomePlug AV.

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# Appendix

## FCC Statement

This equipment has been tested and complies with the specifications 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 according to 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 is found 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 or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

## Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions.

- Do not open the device. Opening or removing the device cover can expose you to dangerous high voltage points or other risks. Only qualified service personnel can service the device. Please contact your vendor for further information.
- Do not use your device during a thunderstorm. There may be a risk of electric shock brought about by lightning.
- Do not expose your device to dust or corrosive liquids.
- Do not use this product near water sources.
- Make sure to connect the cables to the correct ports.
- Do not obstruct the ventilation slots on the device.

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**CE-Declaration of Conformity**

For the following equipment:

Germering, 1st of July, 2015

## 500Mbit Powerline WLAN N Access Point

# ALL1682511v2

The safety advice in the documentation accompanying the products shall be obeyed. The conformity to the above directive is indicated by the CE sign on the device.

The ALLNET ALL1682511v2 conforms to the Council Directives of 1999/5/EC.

This equipment meets the following conformance standards:

| Evaluated test reports | |
|---|---|
| **Requirement** | **Standard, test report number, date & laboratory** |
| **Safety** | **EN 60950-1:2006+A11:2009+A1:2010+A12:2011**<br><br>-CB Test Certificate SG-OF-10286 dated 2013-10-08 by TÜV SÜD PSB Pte ltd<br>-No.: 7191067535-EEC13/NCH1 dated 2013-10-04 and issued by TÜV SÜD PSB Pte Ltd |
| **Health** | **EN 50385: 2002**<br><br>-No.: SE130815C43A R1 dated 2013-12-11 and issued by Bureau Veritas CPS (HK) Ltd. |
| **EMC** | **EN 301 489-1 V1.9.2**<br>**EN 301 489-17 V2.2.1**<br>**EN 55022/ CISPR/I/XX/CDV Opt B**<br>**EN 50412-2-1 / EN 61000-3-2 / EN 61000-3-3**<br><br>-Notified Body 0680 Statement of compliance NB13061 dated 2013-12-16 and issued by CETECOM GmbH<br>-No.: CE130815C43 R1 dated 2013-12-11 and issued by Bureau Veritas CPS (H.K.) Ltd.<br>-No.: RM130815C43 R1 dated 2013-12-11 and issued by Bureau Veritas CPS (H.K.) Ltd. |
| **Radio spectrum** | **EN 300 328 V1.7.1**<br>**EN 301 893 V1.6.1**<br><br>-No. : RE130815C43 R1 dated 2013-12-11 and issued by Bureau Veritas CPS (H.K.) Ltd. |

This equipment is intended to be operated in all countries.

This declaration is made by

ALLNET Computersysteme GmbH
Maistraße 2
82110 Germering
Germany

Germering, 01.07.2015

Wolfgang Marcus Bauer
CEO

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