

500 Mbps Powerline Ethernet Bridge

User's Manual

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1. IMPORTANT INFORMATION

1.1 IMPORTANT SAFETY NOTES

The Device is intended for connection to the AC power line. For installation instructions, refer to the Installation section. The following precautions should be taken when using this product.

- ◆ Please read all instructions before installing and operating this product.
- ◆ Please keep all instructions for later reference.
- ◆ Please follow all warnings and instructions marked on the product.
- ◆ For safety reason, when device is being powered on, this product should NOT be installed in any electric socket which makes the surface with venting holes on the product to face downward (facing the floor).
- ◆ Unplug the Powerline device from the wall outlet before cleaning. Use a dry cloth for cleaning. DO NOT use liquid cleaners or aerosol cleaners.
- ◆ DO NOT operate this product near water.
- ◆ This product should never be placed near or over a radiator, or heat register.
- ◆ This product relies on the building's electrical installation for short-circuit (over current) protection.
- ◆ DO NOT allow anything to rest on the product interconnect plug. DO NOT locate this product where people may walk on the cords.
- ◆ Because this product sends data over the power line, it is recommended that you plug directly into a power outlet. Do not plug the Device into a UPS or power strip with surge protection. The product has its own power filter for protection against surges.
- ◆ Only a qualified technician should service this product. Opening or removing covers may result in exposure to dangerous voltage points or other risks.
- ◆ Unplug the product from the wall outlet and refer the product to qualified service personnel for the following conditions:
 - When the interconnect cords are damaged or frayed.
 - If liquid has been spilled into the product.
 - If the product has been exposed to rain or water.
 - If the product does not operate normally when the operating instructions are followed.
 - If the product exhibits a distinct change in performance.

1.2 FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

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

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

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Labeling Requirements

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

RF Exposure Warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

Canada, Industry Canada (IC) Notices

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the Device.

Radio Frequency (RF) Exposure Information

The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

This device has also been evaluated and shown compliant with the IC RF Exposure limits under mobile exposure conditions. (antennas are greater than 20cm from a person's body).

Canada, avis d'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Informations concernant l'exposition aux fréquences radio (RF)

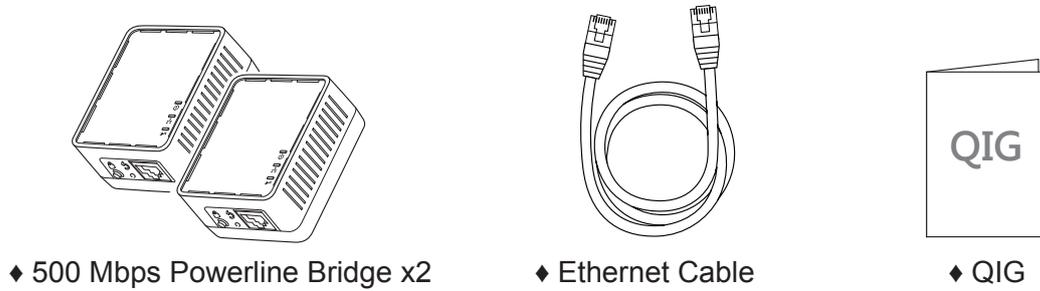
La puissance de sortie émise par l'appareil de sans fil est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez l'appareil de sans fil de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce périphérique a également été évalué et démontré conforme aux limites d'exposition aux RF d'IC dans des conditions d'exposition à des appareils mobiles (les antennes se situent à moins de 20 cm du corps d'une personne).

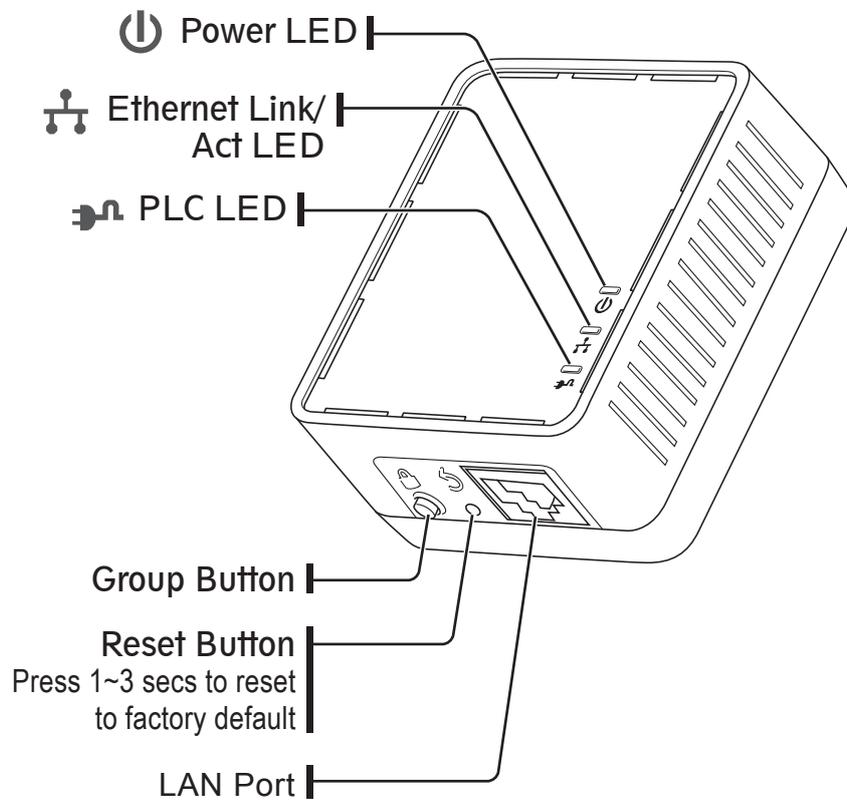
2. INTRODUCTION

2.1 PACKAGE CONTENT

Before starting the installation of the Device, please make sure the package contains the following items:



2.2 PRODUCT OVERVIEW

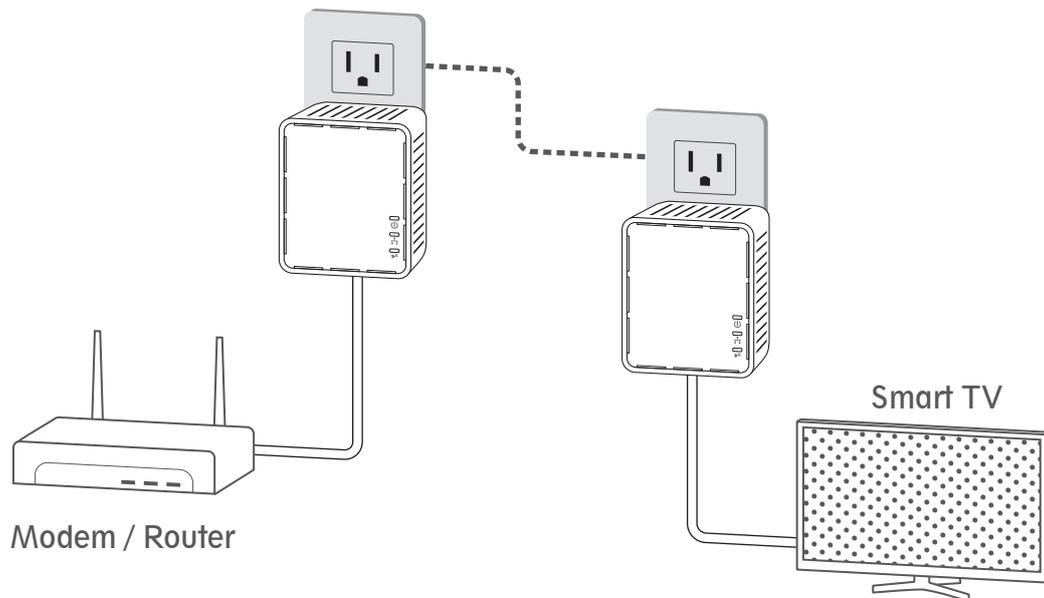


2.3 BUTTONS AND LEDS

Button / LED	Description
 <p data-bbox="177 595 389 658">Ethernet Link / Act LED</p>	<p data-bbox="469 551 963 584">ON: Ethernet connection detected.</p> <p data-bbox="469 595 1027 629">Blinking: Network traffic in transaction.</p> <p data-bbox="469 640 1027 674">OFF: No Ethernet connection detected.</p>
 <p data-bbox="204 871 368 904">Power LED</p>	<p data-bbox="469 770 831 804">ON: Power on and ready.</p> <p data-bbox="469 815 604 848">Blinking:</p> <ol data-bbox="485 860 1382 931" style="list-style-type: none"> <li data-bbox="485 860 1294 893">1. Slow blinking (2.0sec ON / 3.0 sec OFF): Sleep mode. <li data-bbox="485 898 1382 931">2. Fast blinking (0.5 sec ON / 0.5 sec OFF): PLC group pairing. <p data-bbox="469 943 695 976">OFF: Power off.</p>
 <p data-bbox="217 1207 357 1240">PLC LED</p>	<p data-bbox="469 1066 895 1099">ON: PLC connection detected.</p> <p data-bbox="469 1111 1347 1223">Blinking:</p> <ol data-bbox="620 1111 1347 1223" style="list-style-type: none"> <li data-bbox="620 1111 1150 1144">1. Fast: Powerline data rate > 60Mbps <li data-bbox="620 1149 1347 1182">2. Normal: 60Mbps > Powerline data rate > 10Mbps <li data-bbox="620 1187 1161 1223">3. Slow: 10Mbps > Powerline data rate <p data-bbox="469 1234 959 1267">OFF: No PLC connection detected.</p> <p data-bbox="469 1279 1418 1312">(They are too far to communicate or it is alone in its logical network).</p>
 <p data-bbox="193 1576 384 1610">Group Button</p>	<p data-bbox="469 1442 1315 1520">Press 10 seconds: Randomly generate a new PLC network group name.</p> <p data-bbox="469 1532 1339 1700">Press 2 to 3 seconds: Start paring with the other PLC device. Paring procedure keeps for 2 minutes or ends automatically when they are paired. It can be stopped manually by pressing the button for 2 to 3 seconds again.</p>
 <p data-bbox="193 1912 376 1946">Reset Button</p>	<p data-bbox="469 1856 1150 1890">Press 1 second: Reset to factory default setting.</p> <p data-bbox="469 1901 1414 1935">Press the button when the Device is powered (not in standby mode)</p>

3. HARDWARE INSTALLATION

3.1 ESTABLISH POWERLINE NETWORK



Step 1

Plug the PLC adapter into AC outlet and connect to router or broadband modem with an Ethernet cable (provided)

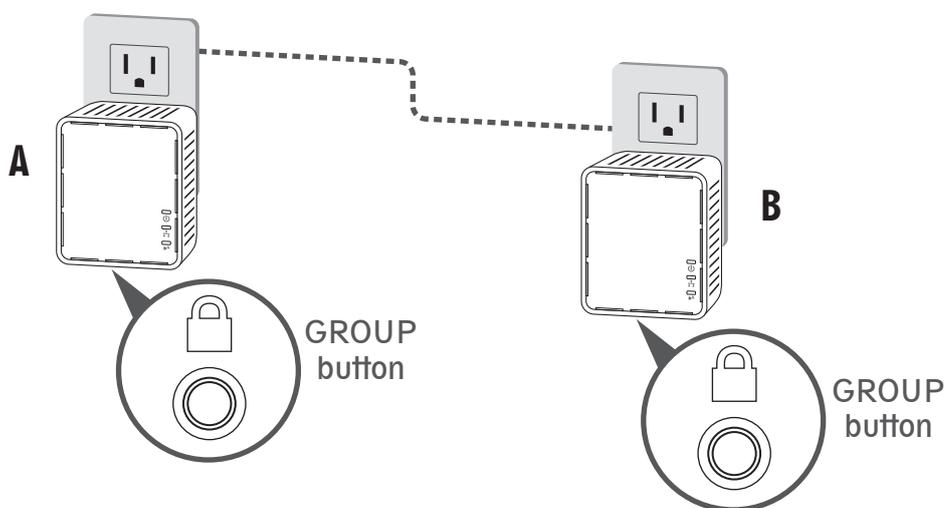
Step 2

Plug another PLC adapter into AC outlet and connect it with networked device such as Blu-ray player, Gaming console, Smart TV, or Set-Top Box.

4. ENCRYPTED PLC NETWORK

4.1 CREATE AN ENCRYPTED PLC NETWORK GROUP

User can easily create an encrypted PLC network with 128-bit encryption for network security and data protection. Simply press **GROUP** button on adapters to set up hassle-free PLC encrypted network. To do so, please follow below steps!



Step 1

Press **GROUP** button on both adapters over 10 secs until LED light turns off and on at once to generate new encrypted PLC network. (PLC LED light will be off)

Step 2

Press **GROUP** button of adapter A again for 1~3 sec to start pairing procedure. (Power LED will start blinking)

Step 3

Press **GROUP** button of adapter B for 1~3 sec to start pairing procedure. (Power LED will start blinking)
Once Pairing procedure is completed, both of PLC LED light will be on.

4.2 JOIN TO AN ENCRYPTED PLC NETWORK GROUP

Simply follow step 1 to generate new PLC group name for PLC adapter. Afterward, follow step 2, 3 to join into the current encrypted PLC network.

4.3 REMOVE DEVICE FROM AN EXISTING NETWORK GROUP

If you would like to remove powerline device from an existing network group, you can generate a new group name (referring to Step 1) to stop communication with an existing network group.

4.4 CREATE ADDITIONAL ENCRYPTED NETWORK

If you want to create additional private network for your powerline devices that co-existence with your existing powerline private network group, please repeat the **Step 1 & 2** to generate new private network group for selected powerline devices.

P.S. Users can press the RESET button to reset the network name back to its factory default.

5. SPECIFICATIONS

Items	Description
Chipset	AR7420
Supported Protocols	LAN: 10/100 Base-TX PLC: HomePlugAV 1.1, IEEE 1901
Data Transfer Rate (PHY/TCP/UDP)	PHY Rate: up to 500Mbps TCP Rate: up to 95Mbps UDP Rate: up to 95Mbps
Frequency Band	2~28 MHz, 30~68 MHz
Security encryption	128-bit AES w/ Key management
Ethernet Port	1-port 10/100 Ethernet
Operating Temperature	0~40°C
Operating Relative Humidity	10~85% non-condensing
Power Supply	100 - 240 VAC, 50/60 Hz
Power Consumption	Full Load < 2.4W Standby Mode < 0.5W
Electrical Plug Type	Custom
Dimension (L x W x H)	67.5 x 56 x 31 mm
PLC Modulation	OFDM (QAM 8/ 16/ 64/ 256/ 1024/ 4096, QPSK, BPSK, ROBO)
QoS (Quality of Service)	Yes
Max IGMP based IPTV streams	up to 16
Transmission Distance	AC wiring: up to 300 meters
Maximum Supported Devices in a network group (Active/Total)	8/16
Regulation	FCC, CE, CE-LVD, RoHS, Erp/Eup