



# ALL168255

## 500 Mbps PLC Ethernet Bridge

### QUICK INSTALLATION



#### PREFACE

This document describes installation of the 500Mbps PLC Ethernet Bridge Network products.

Please read this document before installing the product.

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## **TO THE INSTALLER**

**This publication contains the following sections:**

- **Important safety instructions**
- **The first thing you need to know before you begin to install**
- **Product installation guide**
- **Specification**

## IMPORTANT SAFETY INSTRUCTIONS

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

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- 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.
  - **Unplug the AC coupler from the wall outlet before cleaning. Use a damp cloth for cleaning. DO NOT use liquid cleaners or aerosol cleaners.**
  - **DO NOT** operate this product near water.
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- 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.
  - Ensure that a fuse or circuit breaker **no larger than 120 VAC 20A or 240 VAC 16A** is used on the phase conductors (all current-carrying conductors).
  - **DO NOT** allow anything to rest on the product interconnect cords. **DO NOT** locate this product where people may walk on the cords.
  - Because the 500Mbps PLC Ethernet Bridge product sends data over the powerline, 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 500Mbps PLC-Ethernet Bridge product has its own power filter for protection against surges.
  - The product can be operated at an ambient temperature of 40°C.
  - For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
  - **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 AC coupler 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.

## THE FIRST THING YOU NEED TO KNOW BEFORE YOU BEGIN TO INSTALL...

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### 1. Before installing, make sure your PC meets these requirements for hardware installation:

- Microsoft Windows® 98SE, ME, 2000, XP, Vista, Mac OS or linux OS
  - Pentium® III or better, clock rate faster than 2.0GHz recommended
  - Resource on your PC
    - At least one free Ethernet port for 500Mbps PLC-Ethernet Bridge
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### 2. Your PC must not be configured for another network. This means that:

- **No network clients** except for Microsoft Network\*, Client for Netware\* Networks, or Microsoft Family Logon\* are installed
  - **No network services** except file and printer sharing for Microsoft Networks or Personal Web Server\* are installed
  - **No network protocols** except Microsoft's TCP/IP, IPX/SPX, NetBEUI, or Net BIOS support for IPX/SPX are installed
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### 3. Network installation requires two steps:

1. Install the 500Mbps PLC-Ethernet Bridge
  2. For each PC to be added to the network, repeat the process
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### 4. Check that you have the following parts for each PC on the network:

#### Product installation guide for 500Mbps PLC-Ethernet Bridge:

1. 500Mbps PLC-Ethernet Bridge
  2. Ethernet Cable (CAT 5)
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### 5. Familiarize yourself with the Powerline device connections:

There is only one Ethernet port. This is used for the connection with PC, xDSL/Router, Cable Modem, or Wireless AP.

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### 6. Limitation of the PLC device:

To meet the safety regulation, the longest distance between powerline carrier devices will be limited at 100 meter and for in-house use only. More than 100 meter will cause the signal reduction or data loss.

## Product installation guide

### Important:

**Do not plug the device into a power strip or surge protector because these devices may consist of filter and impair signal. Also avoid plugging the device right next to noisy sources such as cell phone charger, Halogen light, Energy saving bulb, noisy desktop computer, vacuum cleaner, etc. Both cases result in poor transmission speed.**

### To install for the PC local Powerline network

1. Use the supplied Category 5 Ethernet cable to connect Ethernet Bridge and your PC's Ethernet port.
2. Plug the Ethernet Bridge to outlet.
3. The Power LED indicator will light on after plugging.
4. You can repeat steps 1 and 2 for connecting the others.
5. The PL-ACT LED indicator starts blinking when the data communication proceeds on Powerline.
6. The ETH-ACT LED indicator starts blinking when the data communication proceeds on Ethernet.

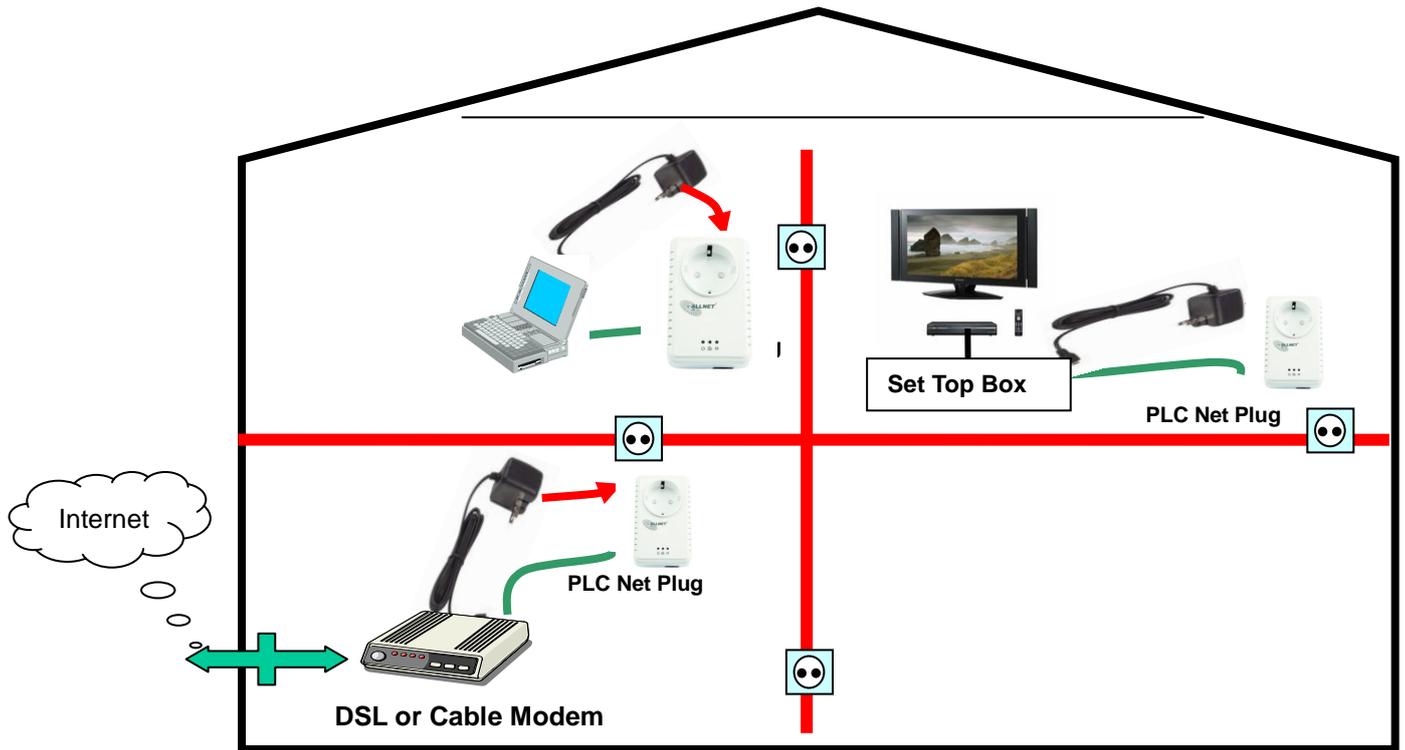
### To share a xDSL or cable modem with Internet access service

1. Connect one Ethernet Bridge to the broadband router
  - Plug the Ethernet Bridge into an AC outlet.
  - Plug the provided Ethernet cable into the RJ45 connector of the Bridge and plug the other end of the cable into an available Ethernet port of the Router.
2. Connect the other Ethernet Bridge(s) to the PC(s) to share the Internet access
  - Plug the Bridge into an AC outlet.
  - Plug the provided Ethernet cable into the RJ45 connector of the Bridge and plug the other end of the cable into Ethernet port on the PC.

### As wireless AP (Access Point) Extender

1. Connect one Ethernet Bridge to the broadband router
  - Plug the Bridge into an AC outlet.
  - Plug the provided Ethernet cable into the RJ45 connector of the Bridge and plug the other end of the cable into an available Ethernet port of the broadband router.
2. Connect the other Ethernet Bridge to the wireless AP
  - Plug the Bridge into an AC outlet.
  - Plug the provided Ethernet cable into the RJ45 connector of the Bridge and plug the other end of the cable into the Ethernet port on the wireless AP.

User diagram:



## Specification

Items	Description	
<b>PHY Rate</b>	500Mbps	
<b>Effect Data Rate</b>	TCP: Up to 95 Mbps effective throughput UDP: Up to 95 Mbps effective throughput	
<b>Frequency Band</b>	2~68 MHz (With Mask)	
<b>Access Methods</b>	priority-based CSMA/CA channel access schemes maximize efficiency and throughput	
<b>Qos</b>	<ul style="list-style-type: none"> <li>– Integrated Quality of Service (QoS) Enhancements</li> <li>– Hardware Packet Classifiers for ToS, CoS and IP Port Number</li> <li>– Supports IGMP managed multicast sessions</li> </ul>	
<b>Modulation</b>	OFDM (QAM 8/16/64/256/1024/4096, QPSK, BPSK, ROBO)	
<b>Standards</b>	IEEE 802.3, HomePlug AV Protocol Compliance with HomePlug 1.0 coexistence capability	
<b>OS</b>	Microsoft Windows® 2000, XP, Vista ,Windows 7 (for utility-program only)	
<b>Nodes</b>	Up to 8 total devices	
<b>IGMP</b>	IGMP supports IGMP managed multicast sessions	
<b>Encryption</b>	128-bit AES Link Encryption with key management	
<b>Push button</b>	NID/RST button	
<b>Port</b>	One 100 Mbps Ethernet Port	
<b>Distance</b>	AC Wire : 200 meters distance max.	
<b>LEDs</b>	PWR (Green) PLC (Green/Orange/Red, throughput indicator) ETH (Green)	
<b>Environment</b>	Temperature	Operating : 0~40 °C Storage : -20~60 °C
	Relative Humidity	Operating : 10~85% Non-Condensing Storage : 5~90% Non-Condensing
<b>Power Source</b>	100 ~ 240 VAC 50/60Hz	
<b>Power Consumption</b>	ca. 2W (Normal mode), less than 0.5W (Standby mode)	
<b>Certification</b>	CE	



LED's

PWR PLC ETH



NID/RST  
Button

## LEDs

PWR (Green)	On: Power on Blinking: Standby mode (*1) Off: Power off
PLC (Green/Orange/Red)	On: Powerline Link detected and no traffic Blinking: Powerline traffic detected <ul style="list-style-type: none"> <li>■ Green: The Powerline connection quality is good</li> <li>■ Orange: The Powerline connection quality is fair</li> <li>■ Red: The Powerline connection quality is bad</li> </ul> Off: No Powerline Link detected
ETH (Green)	On: Ethernet Link detected Blinking: Ethernet traffic detected Off: No Ethernet Link detected

\*1 : The "Power" LED indicator will blink in standby mode. It will get into standby mode, if you plug the device to outlet and no Ethernet link detected after booted and 60 second later. If you unplug the Ethernet cable, it will get into standby mode after 60 seconds. **Under standby mode, PLC and ETH LEDs will both be off.**

## Push Buttons (Only applicable for models with push button)

Push button functions are disabled when in Standby mode!

## **NID/RST Button Usage:**

### **1. Set 2nd device into same group (private network):**

**Step 1.** Press and hold the device's "NID/RST" button for less 3 seconds at same time. You can then release the button and this device would join into the same private network.

### **2. Add a new device to the existing private network:**

**Step 1.** Plug in the new device and one already grouped device. Press and hold its "NID/RST " button less 3 seconds at same time.

**Step 2.** The new device starts to communicate with the device from existing private network, and tries to join this existing private network.

**Step 3.** If the process failed, please repeat Step 1 to Step 2 again.

### **3. Leave the private network:**

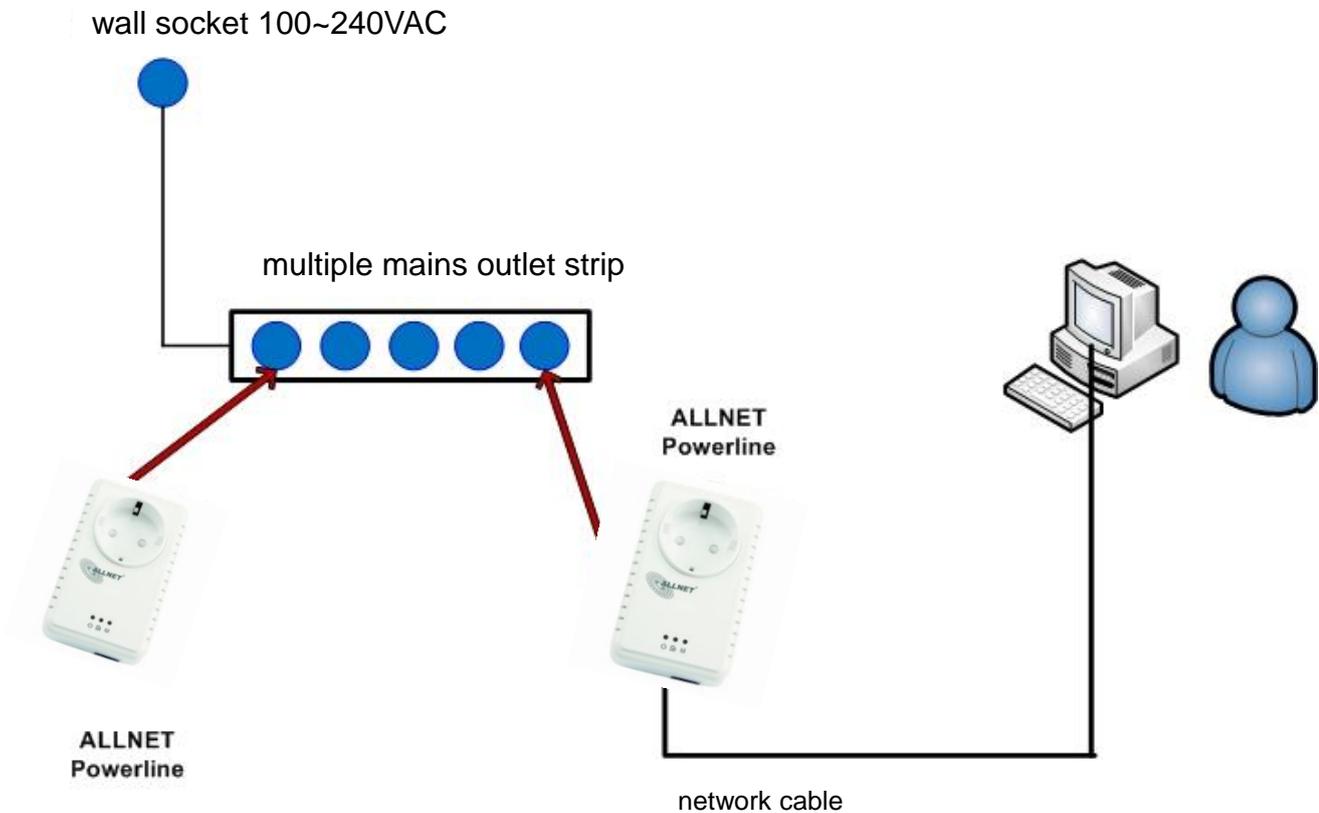
**Step 1.** If you want the device to leave the existing private network, press and hold the device's "NID/RST" button for 5-10 seconds to randomize the network encryption setting. This device will then not be connected to the private network any more.

### **4. Reset the device to the factory default setting:**

Push the device's "NID/RST" button for 10-15 sec seconds. You will see the device's LEDs are all turning off and the device will restart. The device's setting resets to the "factory defaults".

## Powerline function test

1. Plug the adapter into a multiple socket near your PC.



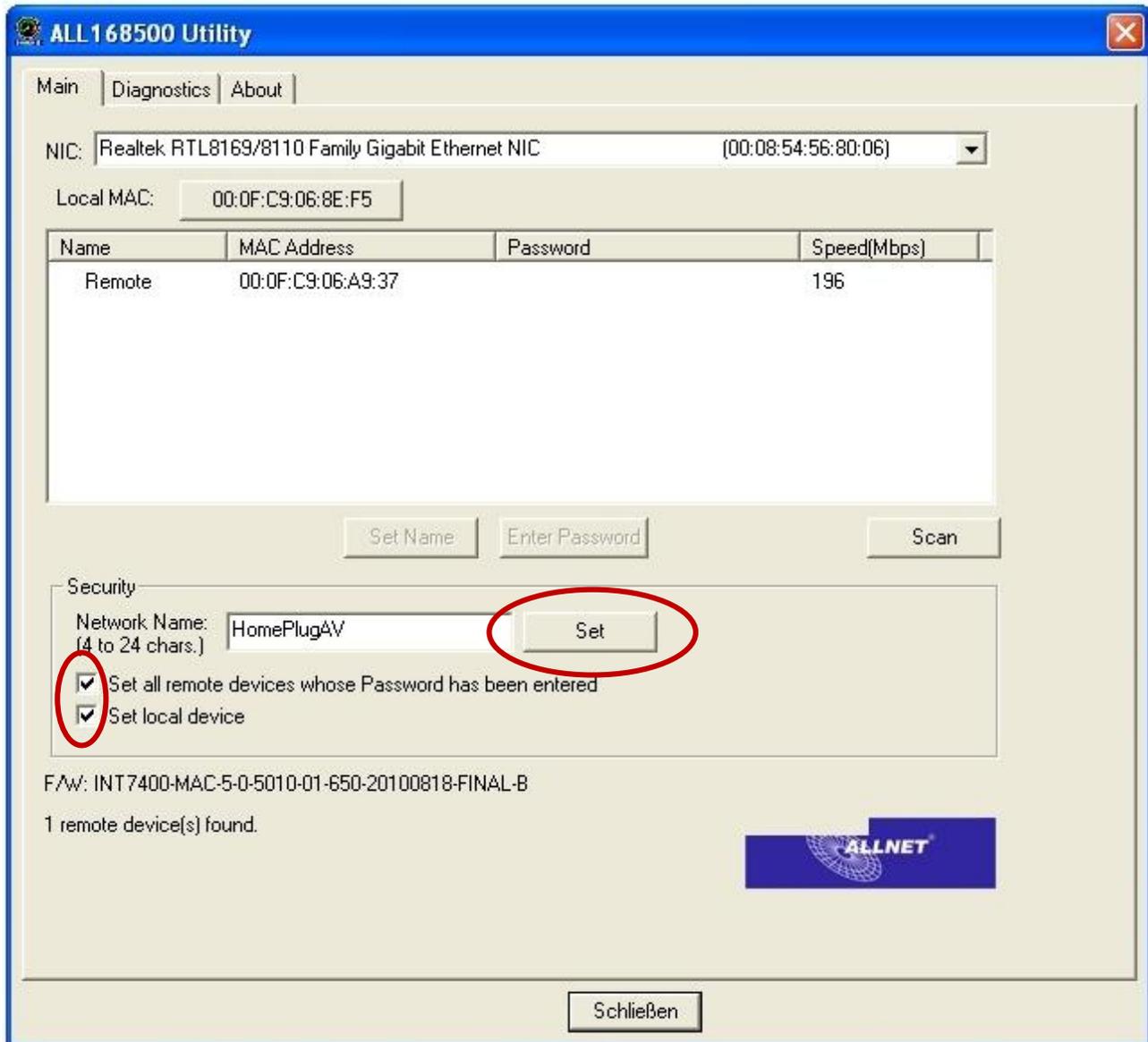
Note: If the Powerline-adapter with no network connection starts to blink, it is in standby. To execute the test correctly, you have to unplug the adapter and immediately plug it in again. If no LAN-cable is connected to this device, standby-mode will be activated after 60sec.

2. Install the Powerline Utility from the provided CD.

After the installation connect your PC directly to one of the 2 Powerline-Bridges.

3. Start the Software and click on "Set" under "Main" --> "Security."

Check both boxes.



The private networkname can also be changed here, it has to be identical on every device in your PLC-Network. Repeat the procedure with all remaining Powerline-Bridges.

**For this procedure you don't need an internet connection!**

If all devices are plugged in next to each other you can afterwards also check the data throughput. If you think that something is wrong with the powerline-bridges, please contact the ALLNET-support.

## *Konformitätserklärung* *Declaration of Conformity*

Hersteller / Manufacturer: ALLNET GmbH

Produkt / Product: ALL168255

Typ / Type: 500Mbit Powerline



This device has been tested and found to comply with the stated standard(s), which is(are) required by the Council Directive of 2004/108/EC. The test results are indicated in the test report and are applicable only to the tested sample identified in the report.

Getestete Normen:  
Tested Standards:

**EN 55022:2010**

**CISPR/1/257/CD:2008**

EN 61000-3-2:2006+A2:2009

EN 61000-3-3:2008

**EN 50412-2-1: 2005**

IEC 61000-4-2:2008

IEC 61000-4-3:2010

IEC 61000-4-4:2004+A1:2010

IEC 61000-4-5:2005

IEC 61000-4-6:2008

IEC 61000-4-8:2009

IEC 61000-4-11:2004

**EN 60950-1:2006+A11:2009+A1:2010+A12;2011**

This equipment is intended to be operated in all countries.



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