

Philips Model Name: SNB6500  
Arcadyan Model Name: WG4005E-LF-B7

**Wireless Base Station**  
Quick Installation Guide

## Contents

# ABOUT THE Base Station

Congratulations on your purchase of the IEEE 802.11g Wireless Router. The SNB6500 is a powerful yet simple communication device for connecting your local area network (LAN) to the Internet.

## LED Indicators

The IEEE 802.11g Base Station includes status LED indicators, as described in the following figure and table.

### LED Status Description

Power On The Base Station is receiving power.

Modem On The WAN link is connected.

Internet On PPP connection is on.

Wireless On The Wireless LAN is enabled.

Flashing The Base Station is transmitting or receiving traffic via a wireless connection.

LAN1-4 Blue On The indicated Ethernet port has established a valid

## Features and Benefits

- Internet connection to DSL or cable modem via a 10/100 Mbps WAN port
- Local network connection via 10/100 Mbps Ethernet ports or 54 Mbps wireless interface
- IEEE 802.11g Compliant – interoperable with multiple vendors
- Advanced security through 64/128-bit WEP encryption, 802.1x, SSID broadcast disabled, and MAC address filtering features to protect your sensitive data and authenticate only authorized users to your network
- Provides seamless roaming within 802.11g WLAN environment
- DHCP for dynamic IP configuration, and DNS for domain name mapping
- Firewall with Stateful Packet Inspection, client privileges, hacker prevention, DoS, and NAT
- NAT also enables multi-user access with a single-user account, and virtual server functionality such as web, mail, FTP, and Telnet
- Virtual Private Network support using PPTP, L2TP, or IPSec pass-through, ISP permitting
- Parental controls allow the user to restrict web browsing
- Automatic email alerts when the network is being attacked
- Easy setup through a web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

# INSTALLING THE Base Station

Before installing the Base Station, verify that you have all the items listed under "Package Contents." If any of the items are missing or damaged, contact your local distributor. Also be sure that you have all the necessary cabling before installing the Base Station. After installing the Base Station, refer to the web-based configuration program in "Configuring the IEEE 802.11g Base Station" on page 20 for information on configuring the Base Station.

## Package Contents

After unpacking the Base Station, check the contents of the box to be sure you have received the following components:

- IEEE 802.11g Base Station
- Power adapter
- One CAT-5 Ethernet cable
- Installation CD containing the User Guide and installation wizard
- Quick Installation Guide

Immediately inform your dealer in the event of any incorrect, missing or damaged parts. If possible, please retain the carton and original packing materials in case there is a need to return the product.

*Installing the IEEE 802.11g Base Station*

## Hardware Description

The Base Station can be connected to the Internet or to a remote site using its WAN port. It can be connected directly to your PC or to a local area network using any of the Fast Ethernet LAN ports.

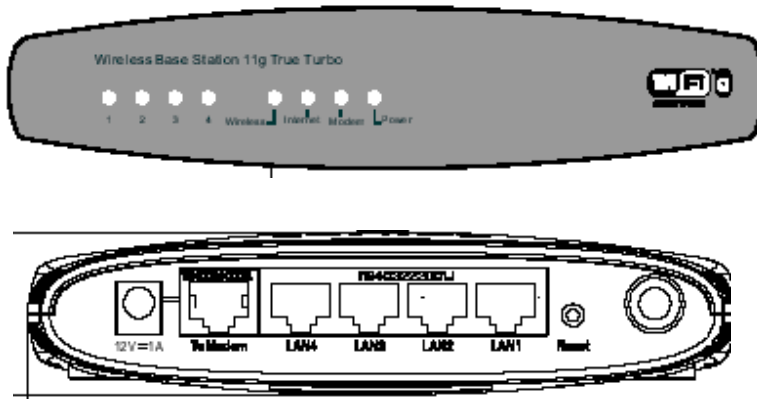
Although access speed to the Internet is determined by your service type and the modem type connected to the Wireless Router, data passing between the devices connected to your local area network can run up to 100 Mbps over the Fast Ethernet ports.

The Base Station includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting. It also provides four RJ-45 LAN ports and one RJ-45 WAN port on the rear panel.

- Four Ethernet ports for connection to a 10BASE-T/100BASE-TX Ethernet Local Area Network (LAN). These ports can auto-negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X (i.e., allowing these ports to be connected to any network device with straight-through cable). These ports can be connected directly to a PC or to a server equipped with an Ethernet network interface card, or to a networking device such as an Ethernet hub or switch.
- One RJ-45 port for connection to a DSL or cable modem (WAN). This port also auto-negotiates operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X.

The following figure shows the components of the Wireless

Figure 1. Front and Rear Panels



## System Requirements

- Internet access from your local telephone company or Internet Service Provider (ISP) using a DSL modem or cable modem.
- A PC using a fixed IP address or dynamic IP address assigned via DHCP, as well as a gateway server address and DNS server address from your service provider.
- A computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter.
- TCP/IP network protocol installed on each PC that needs to access the Internet.
- A Java-enabled web browser, such as Microsoft Internet Explorer 5.5 or above, Firefox 1.0 or Mozilla 1.7 installed on one PC at your site for configuring the Base Station.

## Connect the System

The Base Station can be positioned at any convenient location in your office or home. No special wiring or cooling requirements are needed. You should, however comply with the following guidelines:

- Keep the Base Station away from any heating devices.
- Do not place the Base Station in a dusty or wet environment.

You should also remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the Base Station.

## Basic Installation Procedure

**1. Connect the LAN:** Connect the Base Station to your PC, or to a hub or switch. Run Ethernet cable from one of the LAN ports on the rear of the Base Station to your computer's network adapter or to another network device. You may also connect the Base Station to your PC (using a wireless client adapter) via radio signals.

**2. Connect the WAN:** Use an Ethernet cable for connecting the Base Station to a cable/xDSL modem or Ethernet router.

**3. Power on:** Connect the power adapter to the Wireless Router.

#### **Attach to Your Network Using Ethernet Cabling**

Use twisted-pair cable to connect any of the four LAN ports on the Base Station to an Ethernet adapter on your PC.

Otherwise, you can cascade any of the LAN ports on the Base Station to an Ethernet hub or switch, and then connect your PC or other network equipment to the hub or switch. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

**Warning:** Do not plug a phone jack connector into any RJ-45 port. This may damage the Base Station. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

#### **Attach to Your Network Using Radio Signals**

Install a wireless network adapter in each computer that will be connected to the Internet or your local network via radio signals.

Try to place the Base Station in a position that is located in the center of your wireless network. Normally, the higher you place the antenna, the better the performance. Ensure that the Base Station's location provides optimal reception throughout your home or office.

A wireless infrastructure can be used for access to a central database, or for connection between mobile workers, as shown in the following figure:

#### **Attach the IEEE 802.11g Base Station to the Internet**

If Internet services are provided through an xDSL or cable modem, use unshielded or shielded twisted-pair Ethernet cable CAT 5 with RJ-45 plugs to connect the broadband modem directly to the WAN port on the Base Station.

# CONFIGURING CLIENT TCP/IP

To access the Internet through the Base Station, you must configure the network settings of the computers on your LAN to use the same IP subnet as the Base Station. The default network settings for the Base Station are:

**Gateway IP Address: 192.168.1.2**

**Subnet Mask: 255.255.255.0**

**Note:** These settings may be changed to suit your network requirements, but you must first configure at least one computer as described in this chapter to access the Base Station's web configuration interface.

The IP address of the connected client PC should be 192.168.1.x (where x means 2–254). You can set the IP address for client PCs either by automatically obtaining an IP address from the Base Station's DHCP service or by manual configuration.

## Configuring Your Computer in Windows 2000

1. Access your network settings by clicking **Start**, then choose **Settings** and then select **Control Panel**.
2. In the **Control Panel**, locate and double-click the **Network and Dial-up Connections** icon.
3. Locate and double-click the **Local Area Connection** icon for the Ethernet adapter that is connected to the Wireless Router. When the Status dialog box window opens, click the **Properties** button.
4. In the **Local Area Connection Properties** box, verify the box next to **Internet Protocol (TCP/IP)** is checked. Then highlight the **Internet Protocol (TCP/IP)**, and click the **Properties** button.
5. Select **Obtain an IP address automatically** to configure your computer for DHCP. Click the **OK** button to save this change and close the Properties window.
6. Click the **OK** button again to save these new changes.
7. Reboot your PC.
8. To obtain new network settings see See "Obtain IP Settings from Your IEEE 802.11g Base Station" on the next page.

## Obtain IP Settings from Your IEEE 802.11g Base Station

Now that you have configured your computer to connect to the Base Station, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from the Base Station, you will also verify that you have configured

your computer correctly.

1. On the Windows desktop, click **Start/Programs/Command Prompt**.
2. In the Command Prompt window, type **ipconfig /release** and press the **Enter** key.
3. Type **ipconfig /renew** and press the **Enter** key. Verify that your IP Address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that the Base Station is functioning.
4. Type **exit** and press **Enter** to close the Command Prompt window.

### **Configuring Your Computer in Windows XP**

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000 outlined above.

1. Access your Network settings by clicking **Start**, choose **Control Panel**, select **Network and Internet Connections** and then click on the **Network Connections** icon.
2. Locate and double-click the **Local Area Connection** icon for the Ethernet adapter that is connected to the Base Station. Next, click the **Properties** button.
3. In the **Local Area Connection Properties** box, verify the box next to **Internet Protocol (TCP/IP)** is checked. Then highlight the **Internet Protocol (TCP/IP)**, and click the **Properties** button.
4. Select **Obtain an IP address automatically** to configure your computer for DHCP. Click the **OK** button to save this change and close the **Properties** window.
5. Click the **OK** button again to save these new changes.
6. Reboot your PC.

### **Configuring a Macintosh Computer**

You may find that the instructions here do not exactly match your screen. This is because these steps and screen shots were created using Mac OS 10.2. Mac OS 7.x and above are all very similar, but may not be identical to Mac OS 10.2.

1. Pull down the Apple Menu. Click **System Preferences** and select **Network**.
2. Make sure that **Built-in Ethernet** is selected in the **Show** field.
3. On the **TCP/IP** tab, select **Using DHCP** in the **Configure** field.
4. Close the **TCP/IP** dialog

box.

## **Manual IP Configuration (for all Windows OS)**

- 1.** Check **Specify an IP address** on the IP Address tab. Enter an IP address based on the default network **192.168.2.x (where x is between 2 and 254)**, and use **255.255.255.0** for the subnet mask.
- 2.** In the **Gateway** tab, add the IP address of the Wireless Router (default: **192.168.2.1**) in the **New gateway** field and click **Add**.
- 3.** On the **DNS Configuration** tab, add the IP address for the Base Station and click **Add**. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add specific DNS servers into the **DNS Server Search Order** field and click **Add**.
- 4.** After finishing TCP/IP setup, click **OK**, and then reboot the computer. After that, set up other PCs on the LAN according to the procedures described above.

## **Verifying Your TCP/IP Connection**

After installing the TCP/IP communication protocols and configuring an IP address in the same network as the Wireless Router, use the ping command to check if your computer has successfully connected to the Base Station. The following example shows how the ping procedure can be executed in an MS-DOS window. First, execute the ping command:

```
ping 192.168.2.1
```

If a message similar to the following appears:

```
Pinging 192.168.2.1 with 32 bytes of data:
```

```
Reply from 192.168.2.1: bytes=32 time=2ms TTL=64
```

a communication link between your computer and the Wireless Router has been successfully established.

If you get the following message,

```
Pinging 192.168.2.1 with 32 bytes of data:
```

```
Request timed out.
```

there may be something wrong in your installation procedure.

Check the following items in sequence:

- 1.** Is the Ethernet cable correctly connected between the Base Station and the computer?

The LAN LED on the Base Station and the Link LED of the network card on your computer must be on.



2. Is TCP/IP properly configured on your computer?

If the IP address of the Base Station is 192.168.2.1, the IP address of your PC must be from 192.168.2.2-254 and the default gateway must be 192.168.2.1.

If you can successfully ping the Base Station you are now ready to connect to the Internet!

# CONFIGURING THE BASE STATION

The IEEE 802.11g Base Station can be configured by Internet Explorer 5.5 or above. Using the web management interface, you can configure the Base Station and view statistics to monitor network activity.

Before you attempt to log into the web-based administration, please verify the following.

1. Your browser is configured properly (see below).
2. Disable any firewall or security software that may be running.
3. Confirm that you have a good link LED where your computer is plugged into the Base Station. If you don't have a link light, then try another cable until you get a good link.

## Browser Configuration

Confirm your browser is configured for a direct connection to the Internet using the Ethernet cable that is installed in the computer.

### Disable Proxy Connection

You will also need to verify that the HTTP Proxy feature of your web browser is disabled. This is so that your web browser will be able to view the Base Station configuration pages. The following steps are for Internet Explorer.

#### Internet Explorer 5.5 or above (For Windows)

1. Open Internet Explorer. Click **Tools**, and then select **Internet Options**.
2. In the Internet Options window, click the **Connections** tab.
3. Click the **LAN Settings** button.
4. Clear all the check boxes and click **OK** to save these LAN settings changes.
5. Click **OK** again to close the Internet Options window.

#### Internet Explorer (For Macintosh)

1. Open Internet Explorer. Click **Explorer/Preferences**.
2. In the Internet Explorer Preferences window, under **Network**, select **Proxies**.
3. Uncheck all check boxes and click **OK**.

## Navigating the Web Browser Interface

To access the Base Station's management interface, enter the Base Station IP address in your web browser **http://192.168.1.2**

Then click **LOGIN**.

(Default password: **admin**)

**Note:** Login passwords are case sensitive.

The home page displays the **Setup Wizard** and **Advanced Setup** options.

Use the Setup Wizard if you want to quickly set up the Wireless Router for use with a cable modem or DSL modem.

### **Making Configuration Changes**

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the **APPLY** or **NEXT** button at the bottom of the page to enable the new setting.

**Note:** To ensure proper screen refresh after a command entry, ensure that Internet Explorer 5.5 is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for **Check for newer versions of stored pages** should be **Every visit to the page**.

## **Setup Wizard**

### **Time Zone**

Click on the **Setup Wizard** picture. The first item in the Setup Wizard is **Time Zone** setup.

For accurate timing of client filtering and log events, you need to set the time zone. Select your time zone from the drop-down list.

### **Broadband Type**

Select the type of broadband connection you have.

#### **Cable Modem**

Your Internet Service Provider may have given you a host name. If so, enter it into the field. If your ISP used the MAC address of an Ethernet card as an identifier when first setting up your broadband account, only connect the PC with the registered MAC address to the Base Station and click the **Clone MAC Address** button. This will replace the current Base Station MAC address with the already registered Ethernet card MAC address.

Click **Finish** to complete the setup.

#### **Fixed-IP xDSL**

Some xDSL Internet Service Providers may assign a fixed (static) IP address. If you have been provided with this information, choose this option and enter the assigned IP address, subnet mask, gateway IP address, and DNS IP address. Click **FINISH** to complete the setup.

#### **PPPoE**

Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

Leave the Maximum Transmission Unit (MTU) at the default value (1454) unless you have a particular reason to change it. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 3 minutes)

#### Connect Mode

- Always On Line: If you enable this, idle time is not taken into account. The connection will always be alive.
- Manual Connect: When the connection is broken by the idle time, you must press **Connect** button on the Status page to reconnect.
- Connect On Demand: When the connection is broken by the idle time, any trigger can make the connection alive.

**Note:** If you are on a leased line or pay-per min. connection, please set your maximum idle time to 3 minutes. This will cause your Internet connection to drop after 3 minutes of idle time so you won't be charged for extra online time from your ISP.

Click **FINISH** to complete the setup.

#### Point-to-Point Tunneling Protocol (PPTP)

Point-to-Point Tunneling Protocol is a common connection method used for xDSL connections in Europe. It can be used to join different physical networks using the Internet as an intermediary.

If you have been provided with the information as shown on the screen, enter the PPTP Account name and password, Host Name, Service IP Address, the assigned IP Address, and Subnet Mask.

Leave the Maximum Transmission Unit (MTU) at the default value (1460) unless you have a particular reason to change it. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 3 minutes)

#### Connect Mode

- Always On Line: If you enable this, idle time is not taken into account. The connection will always be alive.
- Manual Connect: When the connection is broken by the idle time, you must press **Connect** button on the Status page to reconnect.
- Connect On Demand: When the connection is broken by the idle time, any trigger can make the connection alive.

**Note:** If you are on a leased line or pay-per min. connection, please set your maximum idle time to 3 minutes. This will cause your Internet connection to drop after 3 minutes of idle time so you won't be charged for extra online time from your ISP.

Click **FINISH** to complete the setup.

#### BigPond

If you use the BigPond Internet Service which is available in Australia, enter the the User Name, Password and Authentication Service Name for BigPond authentication. Click **FINISH** to complete the setup.

Advanced setup supports more advanced functions like hacker attack detection, IP and MAC address filtering, intrusion detection, virtual server setup, virtual DMZ hosts, and other advanced functions. Please refer to Advanced Management Guide included in the documentation CD for details.

Model Number: SNB6500

## **FCC Regulations:**

● 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.

● This device 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

● This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.