

# **User Manual**

# 150Mbps Wireless N Access Point FWA-600ND

User Manual / V2.0

# **Copyright Statement**

**PHICOMM** is the registered trademark of Shanghai Feixun Communication Co., Ltd. Other trademark or trade name mentioned herein are the trademark or registered trademark of the company. Copyright of the whole product as integration, including its accessories and software, belongs to Shanghai Feixun Communication Co., Ltd. Without the permission of Shanghai Feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd. Without the permission of Shanghai feixun Communication Co., Ltd., individual or party is not allowed to copy, plagiarize, imitate or translate it into other languages.

All the photos and product specifications mentioned in this manual are for references only, as the upgrading of software and hardware, there will be changes. And if there are changes, PHICOMM is not responsible for informing in advance. If you want to know more information about our products, please visit our website at www.phicomm.com.



# CONTENTS

| Chapter 1: Introduction1                |
|---|
| Product Overview1                       |
| LED and Button Descriptions1            |
| Main Features3                          |
| Chapter 2: Operation Mode Introduction4 |
| Chapter 3: Hardware Installation6       |
| Physical Connection6                    |
| Configure Your Computerб                |
| Login14                                 |
| Chapter 4: Software Configuration       |
| Running Status16                        |
| Running Status                          |
| Wireless Basic Settings17               |
| Wireless Security Settings22            |
| LAN                                     |
| Wireless Settings24                     |
| Wireless Basic Settings24               |
| Wireless Security Settings24            |
| Wireless MAC Address Filter             |



| Advanced Wireless Settings          | 25 |
|-------------------------------------|----|
| Wireless Clients List               | 26 |
| WPS Settings                        | 26 |
| DHCP Server                         | 27 |
| DHCP                                | 27 |
| Address Reservation                 | 28 |
| DHCP Client List                    |    |
| System Tools                        |    |
| Factory Defaults                    | 29 |
| Backup and Restore                  | 29 |
| Password                            |    |
| System Log                          |    |
| Traffic Statistics                  | 31 |
| Firmware Upgrade                    | 31 |
| Reboot                              |    |
| Logout                              |    |
| Chapter5: PoE (Power over Ethernet) | 33 |
| Hardware Overview of PoE            |    |
| Installation with PoE Injector      |    |
| Chapter6: Specification             | 34 |
| Appendix A: Troubleshooting         | 35 |



| Appendix B: Certification |    |
|---------------------------|----|
| FCC Statement             |    |
| CE Mark Warning           |    |
| Appendix C: Glossary      | 38 |



# **Chapter 1: Introduction**

# **Product Overview**

Thank you for choosing FWA-600ND 150Mbps Wireless N Access Point. It is dedicated to Small Office/Home Office (SOHO) wireless network solutions. It allows for greater range and mobility within your wireless network while allowing you to connect the wireless devices to a wired environment. Increased mobility and the absence of cable will be beneficial for your network. With IEEE 802.11n wireless technology, your device can transmit wireless data at the rate of up to 150Mbps. With multiple protection measures including SSID broadcast control and advanced firewall protections, the product delivers complete data privacy. Wireless security type of WPA/WPA2-Enterprise as well as WPA/WPA2-Personal ensures transmission safety. Supporting a simple web-based setup wizard for installation and management, even novice users can easily configure it with the help of this manual.

# LED and Button Descriptions

Front Panel



The front panel of the wireless Access Point includes 4 LED indicators, as explained in table

#### below:

| LED            | Status   | Indication   |  |  |
|----------------|----------|--|--|--|
| On Power is on |          | Power is on  |  |  |
| POWER          | Off      | Power is off   |  |  |
|                | On       | There is a successful connection on the LAN port                           |  |  |
| LAN            | Off      | There is no connection on the LAN port                                     |  |  |
|                | Blinking | Data is being transferred over the LAN port                                |  |  |
|                | On       | The wireless function is enabled   |  |  |
| WLAN           | Off      | The wireless function is disabled  |  |  |
|                | Blinking | Sending or receiving data over wireless network                            |  |  |
|                | On       | A wireless device is successfully connected to the network by WPS function |  |  |
| WPS            | Off      | WPS function is deactivated  |  |  |
|                | Blinking | A wireless device is connecting to the network by WPS function             |  |  |

**Rear Panel** 



The rear panel of the wireless Access Point includes 1 power ON/OFF switch, 1 power connector, 1 LAN port, 1 Reset button, 1 WPS button and 1 antenna, as explained in table below:

| Interface/Button | Function   |  |
|------------------|--|--|
| ON/OFF           | Used to power on or power off the wireless Access Point                            |  |
| PWR              | Connect with a power adapter   |  |
| LAN              | Connect to your network devices  |  |
| Reset            | Used to restore the product to factory default settings                            |  |
| WPS              | Used to create a secured wireless network automatically by pressing the WPS button |  |

# **Main Features**

- Complies with IEEE 802.11n to provide a wireless data rate of up to 150Mbps
- Supports 1 RJ45 LAN port which also allows Power over Ethernet (PoE)
- Provides multiple encryption security Types including: 64/128-bit WEP, WPA/WPA2-personal
- Easily setup a WPA2 encrypted secure connection at a push of the WPS button
- Wireless MAC address filtering allows you to control the access rights of the wireless clients according to the MAC addresses
- Supports built-in DHCP server
- Supports operation modes including: AP, Client, Bridge, Bridge with AP, and Repeater
- Supports Multiple SSID
- Firmware upgrade allows you to update the firmware to the latest version through the configuration page
- External detachable antenna allows better alignment and stronger antenna upgrade



# **Chapter 2: Operation Mode Introduction**

The Wireless Access Point supports five operation modes: **AP (Access Point)**, **Client**, **Bridge**, **Bridge with AP** and **Repeater**. By default, the operation mode is AP.

In AP mode, it extends your existing hardwired network to your wireless clients.



In Client mode, it acts as a wireless network adapter.



In Bridge/Bridge with AP mode, it can wirelessly connect two or more remote LANs which also support Bridge mode together.





In Repeater mode, it can extend the coverage of your root wireless router, boost the wireless signal strength.





# **Chapter 3: Hardware Installation**

# **Physical Connection**

Before installing the device, please make sure that the broadband service provided by your ISP is available. Connect your computer to the Wireless Access Point with an Ethernet cable when trying to configure it.



# **Configure Your Computer**

By default, the DHCP server of FWA-600ND is enabled. It can assign an IP address to your computer automatically. So we suggest you set your computer to obtain IP address automatically after the physical connection.

For Windows XP/2000

1) Click Start > Control Panel.





2) Select and double click Network Connections.



3) Right click Local Area Connection and then select Properties.





4) Select Internet Protocol (TCP/IP) and click Properties.

| 🗕 Local Area Connection Properties 🛛 🔹 🔀  |
|---|
| General Advanced  |
| Connect using:  |
| Realtek PCIe FE Family Controller   |
| This connection uses the following items:   |
| AEGIS Protocol (IEEE 802.1x) v3.7.5.0      TRTL8185 Mass Production Protocol Program      Triternet Protocol (TCP/IP)   |
|   |
| Install Uninstall Properties  |
| Transmission Control Protocol/Internet Protocol. The default<br>wide area network protocol that provides communication<br>across diverse interconnected networks. |
| <ul> <li>Show icon in notification area when connected</li> <li>Notify me when this connection has limited or no connectivity</li> </ul>                          |
| OK Cancel   |

5) Select Obtain an IP address automatically and Obtain DNS server address automatically. Then click OK.

| nternet                        | Protocol (TCP/IP) Prop   | perties ? 💽   |
|--------------------------------|--|---|
| General                        | Alternate Configuration  |   |
| You car<br>this cap<br>the app | n get IP settings assigned au<br>ability. Otherwise, you need t<br>ropriate IP settings. | tomatically if your network supports<br>to ask your network administrator for |
| 📀 O E                          | otain an IP address automatic  | ally  |
| OU:                            | e the following IP address: -  |   |
| IP ad                          | ldress:  |   |
| Subr                           | iet mask:  | · · · · · · · · · · · ·   |
| Defa                           | ult gateway:   |   |
| 💿 Ot                           | otain DNS server address aut   | tomatically   |
| -OU:                           | e the following DNS server a   | addresses:  |
| Prefe                          | rred DNS server:   |   |
| Alter                          | nate DNS server:   |   |
|                                |  | Advanced  |
|                                |  | OK Cancel   |



6) Run the Ping command in the command prompt to verify the network connection. Please click the **Start** menu on your desktop, select **Run** tab, type **cmd** in the field.



7) Then type **ping 192.168.0.254** on the next screen, press Enter.

If you can receive reply from that IP address that means you has succeeded.

| 🛤 C:\WINDOWS\system32\cmd.exe  | - 🗆 | × |
|--|-----|---|
| Microsoft Windows XP [Version 5.1.2600]<br>(C) Copyright 1985-2001 Microsoft Corp.   |     | 1 |
| C:\Documents and Settings\Admin>ping 192.168.0.254   |     |   |
| Pinging 192.168.0.254 with 32 bytes of data:   |     |   |
| Reply from 192.168.0.254: bytes=32 time<1ms TIL=64<br>Reply from 192.168.0.254: bytes=32 time<1ms TIL=64<br>Reply from 192.168.0.254: bytes=32 time<1ms TIL=64<br>Reply from 192.168.0.254: bytes=32 time<1ms TIL=64 |     |   |
| Ping statistics for 192.168.0.254:<br>Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),<br>Approximate round trip times in milli-seconds:<br>Minimum = 0ms, Maximum = 0ms, Average = 0ms                          |     |   |
| C:\Documents and Settings\Admin>_  |     |   |
|  |     | - |



For Windows Vista/7

#### 1) Click Start>Control Panel.



#### 2) Click Network and Internet.





#### 3) Click Network and Sharing Center.

| G v 💱 🕨 Control Panel 🕨   | Network and Internet 🔸 📼 👍  | Search Control Panel | Q |
|---|---|----------------------|---|
| Control Panel Home<br>System and Security<br>• Network and Internet<br>Hardware and Sound<br>Programs<br>User Accounts and Family<br>Safety<br>Appearance and<br>Personalization<br>Clock, Language, and Region<br>Ease of Access | Network and Sharing Center         View network status and tex         Add a wireless device to the         HomeGroup         Choose homegroup and sharing files and printers.         Internet Options         Change your homepage         Manage browser add-ons |                      |   |

4) Go to Change Adapter Settings (win7)/Manage Network Connections (Vista).

|   |   |   |   | _ <b>_</b> × |
|---|---|---|---|--------------|
| 🔾 🕞 🗢 👯 🕨 Control Panel 🕨   | Network and Internet   Network and Sharing Center   |   | 👻 🍫 Search Control Panel  | ٩            |
| Control Panel Home<br>Change adapter settings<br>Change advance sharing<br>settings | Network and Internet  Network and Sharing Center View your basic network information and s PRODUCT-PC (This computer) View your active networks Network Network Network Network Change your networking settings Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connect to a wireless, wired, dial Connect or reconnect to a wireless, wired, dial Choose homegroup and sharing options Access files and printers located on other network Troubleshoot problems Diagnose and repair network problems, or get | et up connections<br>Internet<br>Con<br>Access type: Internet<br>Connections: Local Area Co<br>or VPN connection; or set up a rou<br>-up, or VPN network connection.<br>work computers, or change sharing<br>troubleshooting information. | •     47     Search Control Panel   See full map ennect or disconnect  ennection  ter or access point.  settings. |              |
| Internet Options<br>Windows Firewall  |   |   |   |              |
|   |   |   |   |              |



5) Right click Local Area Connection, choose Properties.

|  |   |                             |                        |                                |                           | - 0 | ×   |
|--|---|-----------------------------|------------------------|--------------------------------|---------------------------|-----|-----|
| Contro                                       | I Panel 🕨 Network an  | d Internet 🔸 Network Connec | tions 🕨                | <b>▼</b> 49                    | Search Network Connection | s   | Q   |
| Organize 🔻 Disable                           | this network device   | Diagnose this connection    | Rename this connection | View status of this connection | » <u>s</u> = •            |     | (?) |
| Local Area Cor<br>Network<br>Realtek PCIe Fl | nnection<br>Status<br>Diagnose<br>Bridge Connect<br>Create Shortcut<br>Delete<br>Rename<br>Properties | ions                        |                        |                                |                           |     |     |

6) Select Internet Protocol Version 4 (TCP/IPv4) and click Properties.

| Local Area Connection Properties  |
|---|
| Networking  |
| Connect using:  |
| Realtek PCIe FE Family Controller   |
| Configure   |
| This connection uses the following items:   |
| Client for Microsoft Networks QoS Packet Scheduler File and Printer Sharing for Microsoft Networks Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) |
| Install         Properties           Description         Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.  |
| OK Cancel   |



7) Select Obtain an IP address automatically and Obtain DNS server address automatically. Then click OK.

| eneral Alterna  | te Configuration   |           |      |      |       |
|---|--------------------|-----------|------|------|-------|
| You can get IP settings assigned automatically if your network supports<br>this capability. Otherwise, you need to ask your network administrator<br>for the appropriate IP settings. |                    |           |      |      |       |
| Obtain an IP address automatically  |                    |           |      |      |       |
| −⊚ Use the fo   | lowing IP address  |           |      |      |       |
| IP address:   |                    |           |      |      |       |
| Subnet mask:  |                    |           |      |      |       |
| Default gatev   | vay:               |           |      |      |       |
| Obtain DN:  | S server address a | automatic | ally |      |       |
| – Use the fo  | lowing DNS serve   | r address | es:  |      |       |
| Preferred DN  | S server:          |           |      |      |       |
| Alternate DN  | 5 server:          |           |      |      |       |
| Validate s  | ettings upon exit  |           |      | Adva | anced |

8) Run the Ping command in the command prompt to verify the network connection. Please click the **Start** menu on your desktop, select **Run** tab, type **cmd** in the field,

| Programs (1)  |  |  |
|---|--|--|
| 1 Run Jhr.  |  |  |
| Control Plonens a program folder document or web site   |  |  |
| Run programs made for previous versions of Windows  |  |  |
| Kur programs made for previous versions of windows<br>View recommended actions to keen Windows running smoothly |  |  |
| Show which operating system your computer is running  |  |  |
| Niew running processes with Task Manager  |  |  |
| Documents (2)   |  |  |
|   |  |  |
| To RUNFILEX   |  |  |
| _   |  |  |
|   |  |  |
|   |  |  |
|   |  |  |
|   |  |  |
|   |  |  |
| ₽ See more results  |  |  |
| run y Shutdown b  |  |  |
|   |  |  |
|   |  |  |
|   |  |  |





9) Then type **ping 192.168.0.254** on the next screen, press **Enter**. If you can receive reply from that IP address, that means you have succeeded.



# Login

Now we can login to the Web-based Setup Wizard to do advanced configuration.

**Step 1**: Open your web browser, type the default IP address **192.168.0.254** in the address bar, press enter.





Step 2: Enter the default Username admin and Password admin.

| PHICOM                 | Model:FWA-600ND                                      |
|------------------------|--|
| Username:<br>Password: | admin<br>•••••<br>Remember my password<br>gin Cancel |



# **Chapter 4: Software Configuration**

After the successful login, you can configure and manage the device. There are six main menus on the left side of the web management page: **Running Status**, **LAN**, **Wireless Settings**, **DHCP Server**, **System Tools** and **Logout**. Submenus will be available after clicking one of these main menus. On the right of the web management page you can see the detailed explanations and instructions for the corresponding page.



# **Running Status**

Running Status includes three submenus: **Running Status**, **Wireless Basic Settings** and **Wireless Security Settings**. Click any of them, you will be able to configure the corresponding function.



### **Running Status**

PHICOMM

www.phicomm.com

| Running Status                        | Running Status               |                   |  |
|---------------------------------------|------------------------------|-------------------|--|
| Running Status                        | Router Information           |                   |  |
| Wireless Basic Settings               | Hardware Version             | 1.0               |  |
| Wireless Security Settings            | Software Version             | 1.0               |  |
| ► LAN                                 | Running Time                 | 4 mins, 15 secs   |  |
| <ul> <li>Wireless Settings</li> </ul> | LAN                          |                   |  |
| DHCP Server                           | MAC Address                  | 00:53:50:53:50:00 |  |
| System Tools                          | IP Address                   | 192.168.0.254     |  |
| ▶ Logout                              | Subnet Mask                  | 255.255.255.0     |  |
|                                       | Wireless                     |                   |  |
|                                       | Wireless Operation Mode      | AP                |  |
|                                       | Wireless Network Name (SSID) | Phicomm-535000    |  |
|                                       | Channel                      | 11                |  |
|                                       | MAC Address                  | 00:53:50:53:50:00 |  |

Running Status page shows the current status of the wireless access point.

### Wireless Basic Settings

| Running Status                        | Wireless Basic Settings |                                      |  |
|---------------------------------------|-------------------------|--------------------------------------|--|
| Running Status                        | Operation Mode          |                                      |  |
| Wireless Basic Settings               | Operation Mode:         | AP 🗸                                 |  |
| Wireless Security Settings            | Wireless Network        |                                      |  |
| ► LAN                                 | Wireless Status         |                                      |  |
| <ul> <li>Wireless Settings</li> </ul> | SSID1                   | Phicomm-535000 Display multiple SSID |  |
| DHCP Server                           |                         | Hidden Isolated                      |  |
| <ul> <li>System Tools</li> </ul>      | Wireless Mode           | 11b/g/n mixed mode 💌                 |  |
| ▶ Logout                              | Channel                 | AutoSelect 🗸                         |  |
|                                       | SSID Broadcast          |                                      |  |
|                                       | MBSSID AP Isolation     | ○ Enabled 		 ⊙ Disabled              |  |
|                                       | BSSID                   | 00:53:50:53:50:00                    |  |
|                                       | Channel Bandwidth       | ○ 20MHz                              |  |
|                                       | MCS                     | Auto                                 |  |
|                                       | Extension Channel       | Auto Select V                        |  |
|                                       |                         |                                      |  |
|                                       | Save                    |                                      |  |

#### a) AP Mode

By default, the operation mode is AP.

**Operation Mode:** It displays the current operation mode. Choose the operation mode in the drop-down list, the corresponding configuration page will pop up.

**Note**: Since the DHCP server of your original router is enabled and it assigns IP addresses to you computers automatically so you have to disable the DHCP service on the wireless Access Point after the settings.

Wireless Status: Choose Enable to enable the wireless function, choose Disable to disable the



wireless function.

SSID1: The wireless network name of AP, you can change it to whatever you want.

**Display multiple SSID**: It supports up to 4 SSIDs. If you enable other SSIDs and tick the Isolated radio button then computers that connected to different SSIDs become logically separated.

Hidden: Select it to disable SSID broadcast. We do not suggest you tick it.

Isolated: Get different SSIDs become logically separated.

**Wireless Mode:** If all of the wireless devices connected with this wireless router are in the same transmission mode (e.g. 802.11b), you can choose "Only" mode (e.g. 11b only). If you have some devices which use a different transmission mode, choose the appropriate "Mixed" mode.

**Channel:** The router can choose the best channel automatically in most cases. Please try to change the wireless channel if you notice interference problems with another nearby access point, or the wireless performance is not as good as you expected.

SSID Broadcast: If you choose Enabled, the wireless router will broadcast its name (SSID).

MBSSID AP Isolation: Leave it as disable.

BSSID: The physical address of the AP.

**Channel Bandwidth:** The bandwidth of the wireless channel, you can select **20MHz** or **20/40MHz**.

MCS: You can leave it as Auto.

Extension Channel: There is assistant channel if frequency bandwidth 20/40 is chosen.

b) Client Mode

| Running Status                        | Wireless Basic Settings |        |  |
|---------------------------------------|-------------------------|--------|--|
| Running Status                        | Operation Mode          |        |  |
| Wireless Basic Settings               | Operation Mode:         | Client |  |
| Wireless Security Settings            | Client Parameters       |        |  |
| ► LAN                                 | SSID                    | Search |  |
| <ul> <li>Wireless Settings</li> </ul> | MAC Address (Optional)  |        |  |
| DHCP Server                           | Channel                 |        |  |
| <ul> <li>System Tools</li> </ul>      | Security Mode           | OPEN V |  |
| ▶ Logout                              | Encryption Type         | None 💌 |  |
|                                       | Save                    |        |  |

**SSID/MAC Address:** Please click **Search** then a **Station Survey** page will pop up. Choose your wireless network of your main AP/Router and click **Connect** button. After that you can see that the SSID and MAC Address of your main AP/Router appeared in the box automatically.

#### 🗿 http://192.168.0.254 - PHICOMM - Microsoft Internet Explorer

| Statio | n Survej | /                 |      |         |            |         |
|--------|----------|-------------------|------|---------|------------|---------|
| S      | SSID     | BSSID             | RSSI | Channel | Encryption |         |
| 1      |          | c4:ca:d9:1c:a9:90 | 20%  | 11      | NONE       | Connect |

**Security Mode:** You can choose **open**, **shared**, **WPA-Personal**, **WPA2-Personal**. Please make sure it matches with the settings in your main AP/Router.

**Encryption Type:** You can choose WEP, TKIP, and AES. Please make sure it matches with the settings in your main AP/Router.

#### c) Bridge Mode

PHICOMM

www.phicomm.com

| Running Status                        | Wireless Basic Settings          |                   |  |
|---------------------------------------|----------------------------------|-------------------|--|
| Running Status                        | Operation Mode                   |                   |  |
| Wireless Basic Settings               | Operation Mode:                  | Bridge            |  |
| Wireless Security Settings            | Wireless Network                 |                   |  |
| ► LAN                                 | Channel                          | AutoSelect 🗸      |  |
| <ul> <li>Wireless Settings</li> </ul> | Bridge AP1                       |                   |  |
| DHCP Server                           | Wireless Access Node MAC Address | Encryption Search |  |
| <ul> <li>System Tools</li> </ul>      | Bridge AP2                       |                   |  |
| ► Logout                              | Wireless Access Node MAC Address | Encryption Search |  |
|                                       | Bridge AP3                       |                   |  |
|                                       | Wireless Access Node MAC Address | Encryption Search |  |
|                                       | Bridge AP4                       |                   |  |
|                                       | Wireless Access Node MAC Address | Encryption Search |  |
|                                       | Save Cancel                      |                   |  |

Wireless Access Node MAC Address: Click search then the Site Survey page pops up.

Choose the wireless network which you'd like to bridge, then click **Connect**. The Wireless Access Node Mac Address will be filled in automatically.

**Encryption:** Tick encryption, then a new page including encryption type and encryption key pops up. Choose the correct encryption type and enter the key according to the original wireless network.

| <ul> <li>Running Status</li> </ul>    | Wireless Basic Settings          |                       |  |
|---------------------------------------|----------------------------------|-----------------------|--|
| Running Status                        | Operation Mode                   |                       |  |
| Wireless Basic Settings               | Operation Mode:                  | Bridge 💌              |  |
| Wireless Security Settings            | Wireless Network                 |                       |  |
| ► LAN                                 | Channel                          | AutoSelect 💌          |  |
| <ul> <li>Wireless Settings</li> </ul> | Bridge AP1                       |                       |  |
| DHCP Server                           | Wireless Access Node MAC Address | Search                |  |
| <ul> <li>System Tools</li> </ul>      | Security Mode                    | NONE                  |  |
| ► Logout                              | Password                         | NONE<br>WEP 64bits    |  |
|                                       | Bridge AP2                       | WEP 128bits<br>TKIP   |  |
|                                       | Wireless Access Node MAC Address | AES Encryption Search |  |
|                                       | Bridge AP3                       |                       |  |
|                                       | Wireless Access Node MAC Address | Encryption Search     |  |
|                                       | Bridge AP4                       |                       |  |
|                                       | Wireless Access Node MAC Address | Encryption Search     |  |
|                                       | Save                             |                       |  |

#### d) Bridge with AP Mode

| Running Status                        | Wireless Basic Settings          |                      |  |
|---------------------------------------|----------------------------------|----------------------|--|
| Running Status                        | Operation Mode                   |                      |  |
| Wireless Basic Settings               | Operation Mode:                  | Bridge with AP 💌     |  |
| Wireless Security Settings            | Wireless Network                 |                      |  |
| ► LAN                                 | SSID1                            | Phicomm-535000       |  |
| <ul> <li>Wireless Settings</li> </ul> | Wireless Mode                    | 11b/g/n mixed mode 💌 |  |
| DHCP Server                           | Channel                          | AutoSelect 👻         |  |
| <ul> <li>System Tools</li> </ul>      | Channel Bandwidth                | ○ 20MHz              |  |
| ▶ Logout                              | Bridge AP1                       |                      |  |
|                                       | Wireless Access Node MAC Address | Encryption Search    |  |
|                                       | Bridge AP2                       |                      |  |
|                                       | Wireless Access Node MAC Address | Encryption Search    |  |
|                                       | Bridge AP3                       |                      |  |
|                                       | Wireless Access Node MAC Address | Encryption Search    |  |
|                                       | Bridge AP4                       |                      |  |
|                                       | Wireless Access Node MAC Address | Encryption Search    |  |
|                                       | Save                             |                      |  |

SSID1: Show the wireless network name, you can change it to whatever you want.

**Wireless Mode:** If all of the wireless devices connected with this wireless router are in the same transmission mode (e.g. 802.11b), you can choose "Only" mode (e.g. 11b only). If you have some devices which use a different transmission mode, choose the appropriate "Mixed" mode.

**Channel:** The router can choose the best channel automatically in most cases. Please try to change the wireless channel if you notice interference problems with another nearby access point, or the wireless performance is not as good as you expected.



**Channel Bandwidth:** The bandwidth of the wireless channel, you can select **20MHz** or **20/40MHz**.

**Wireless Access Node Mac Address:** The following operations are the same as setting it as Bridge. Click **Search** then the **Site Survey** page pops up. Choose the wireless network which you'd like to bridge, then click **Connect**.

e) Repeater Mode

| Running Status                        | Wireless Basic Settings |                      |  |
|---------------------------------------|-------------------------|----------------------|--|
| Running Status                        | Operation Mode          |                      |  |
| Wireless Basic Settings               | Operation Mode:         | Repeater 💌           |  |
| Wireless Security Settings            | Wireless Network        |                      |  |
| ► LAN                                 | SSID1                   | Phicomm-535000       |  |
| <ul> <li>Wireless Settings</li> </ul> | Wireless Mode           | 11b/g/n mixed mode 🔽 |  |
| <ul> <li>DHCP Server</li> </ul>       | Channel                 | AutoSelect V         |  |
| <ul> <li>System Tools</li> </ul>      | Channel Bandwidth       | ○ 20MHz              |  |
| ▶ Logout                              | Repeater Parameters     |                      |  |
|                                       | SSID                    | Search               |  |
|                                       | MAC Address (Optional)  |                      |  |
|                                       | Channel                 |                      |  |
|                                       | Security Mode           | OPEN 💌               |  |
|                                       | Encryption Type         | None 💌               |  |
|                                       |                         |                      |  |
|                                       | Save                    |                      |  |

**SSID1:** If you configured it as a repeater successfully, the SSID1 would be the same with your main AP/Router.

**Wireless Mode:** If all of the wireless devices connected with this wireless router are in the same transmission mode (e.g. 802.11b), you can choose "Only" mode (e.g. 11b only). If you have some devices which use a different transmission mode, choose the appropriate "Mixed" mode.

**Channel:** If you configured it as a repeater successfully, the channel would be the same with your main AP/Router.

**Channel Bandwidth:** The bandwidth of the wireless channel, you can select **20MHz** or **20/40MHz**.

**SSID:** Click **Search**, the **Site Survey** page will pop up, please connect to the wireless network name of your main AP/Router.

MAC Address: The Mac Address will be automatically put in after the above operations.

**Channel:** The channel will pop up automatically. It is the same as the wireless channel of your main AP/Router.

**Security Mode/Encryption Type:** Choose the security mode and encryption type according to the wireless network you'd like to connect, and enter the password.



**Note**: If you have no idea about the wireless network, security mode or encryption type please login to the configuration page of your main AP/Router to check the information.

### Wireless Security Settings

| <ul> <li>Running Status</li> </ul>    | Wireless Security Settings |                         |
|---------------------------------------|----------------------------|-------------------------|
| Running Status                        | Select SSID                |                         |
| Wireless Basic Settings               | Wireless Network Name      | (SSID) Phicomm-535000 💌 |
| Wireless Security Settings            |                            |                         |
| ► LAN                                 | Phicomm-535000             |                         |
| <ul> <li>Wireless Settings</li> </ul> | Security Mode              | Disable V               |
| DHCP Server                           |                            | Open                    |
| <ul> <li>System Tools</li> </ul>      | Save Cancel                | Shared<br>WEPAUTO       |
| ▶ Logout                              |                            | WPA-Personal            |
|                                       |                            | WPA/WPA2-Personal       |

Wireless Network Name (SSID): Show the current wireless network name.

#### Security Mode:

You can choose **Disable**, **Open**, **Shared**, **WEPAUTO**, **WPA-Personal**, **WPA2-Personal**, **WPA-Personal**/**WPA2-Personal**.

#### Mode 1: Security Mode > Disable

If you do not want to use wireless security, highlight on this option. That means other people can connect to your wireless network without entering any password, so it may slow down your internet speed, it's recommended strongly to choose one of the following modes to enable security.

#### Mode 2: Security Mode > Open/Shared/ WEPAUTO

| Running Status                        | Wireless Security Settings                    |                      |  |  |  |
|---------------------------------------|---|----------------------|--|--|--|
| Running Status                        | Select SSID                                   |                      |  |  |  |
| Wireless Basic Settings               | Wireless Network Name (SSID) Phicomm-535000 V |                      |  |  |  |
| Wireless Security Settings            |   |                      |  |  |  |
| ► LAN                                 | Phicomm-535000                                |                      |  |  |  |
| <ul> <li>Wireless Settings</li> </ul> | Security Mode WEPAUTO 💌                       |                      |  |  |  |
| DHCP Server                           | WEP   |                      |  |  |  |
| <ul> <li>System Tools</li> </ul>      | Default Key                                   | Key 1 👻              |  |  |  |
| ▸ Logout                              |   | WEP Key 1: Hex 💌     |  |  |  |
|                                       | WED Kovo                                      | WEP Key 2: ASCII Hex |  |  |  |
|                                       | VVEP Keys                                     | WEP Key 3: Hex 💌     |  |  |  |
|                                       |   | WEP Key 4: Hex 💌     |  |  |  |
|                                       | Save Cancel                                   |                      |  |  |  |

Open System: Select 802.11 Open System authentications.

Shared Key: Select 802.11 Shared Key authentications.

WEPAUTO: Select Shared Key or Open System authentication type automatically based on the

wireless station's capability and request.

You can select **ASCII** or **Hex** format. ASCII Format stands for any combination of keyboard characters in the specified length. Hex format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.

You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 5 ASCII characters. Or enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 13 ASCII characters. Or enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 16 ASCII characters.

#### Mode 3: Security Mode > WPA-Personal, WPA2-Personal, WPA- Personal/ WPA2-Personal

| Running Status                        | Wireless Security Settings |                                   |  |  |  |
|---------------------------------------|----------------------------|-----------------------------------|--|--|--|
| Running Status                        | Select SSID                | Select SSID                       |  |  |  |
| Wireless Basic Settings               | Wireless Network Name      | (SSID) Phicomm-535000 V           |  |  |  |
| Wireless Security Settings            |                            |                                   |  |  |  |
| ► LAN                                 | Phicomm-535000             | Phicomm-535000                    |  |  |  |
| <ul> <li>Wireless Settings</li> </ul> | Security Mode              | Security Mode WPA/WPA2-Personal 💌 |  |  |  |
| DHCP Server                           | WPA/WPA2-Personal          | WPA/WPA2-Personal                 |  |  |  |
| <ul> <li>System Tools</li> </ul>      | WPA Encryption             | OTKIP OAES OTKIP+AES              |  |  |  |
| ▶ Logout                              | Password                   |                                   |  |  |  |
|                                       | Key Renewal Interval       | 3600 seconds                      |  |  |  |
|                                       |                            |                                   |  |  |  |
|                                       | Save Cancel                |                                   |  |  |  |

WPA-Personal: Pre-shared key of WPA.

WPA2-Personal: Pre-shared key of WPA2.

**WPA- Personal/ WPA2-Personal:** Select WPA-Personal or WPA2-Personal automatically based on the wireless station's capability and request.

Encryption: You can select TKIP, AES or TKIP+AES.

Password: The password should be between 8 and 63 characters.

Note: You can set different wireless security for each SSID if you have enabled multiple SSIDs.

# LAN

| <ul> <li>Running Status</li> </ul>    | LAN         |                     |
|---------------------------------------|-------------|---------------------|
| Running Status                        | MAC Address | 00:53:50:53:50:00   |
| Wireless Basic Settings               | IP Address  | 192 . 168 . 0 . 254 |
| Wireless Security Settings            | Subnet Mask | 255.255.255.0 🗸     |
| ► LAN                                 |             |                     |
| <ul> <li>Wireless Settings</li> </ul> | Save        |                     |

MAC Address: The physical address of the router.

IP Address: The LAN IP Address of the router.

Subnet Mask: The Subnet Mask associated with the LAN IP Address.



**Note:** If you changed the LAN IP Address of the router, please log in this web management page by the new IP address.

# Wireless Settings

Wireless Settings includes six submenus: Wireless Basic Settings, Wireless Security Settings, Wireless MAC Address Filter, Advanced Wireless Settings, Wireless Clients List and WPS Settings. Click any of them, you will be able to configure the corresponding function.

| <ul> <li>Wireless Settings</li> </ul> |
|---------------------------------------|
| Wireless Basic Settings               |
| Wireless Security Settings            |
| Wireless MAC Address Filter           |
| Advanced Wireless Settings            |
| Wireless Clients List                 |
| WPS Settings                          |

### Wireless Basic Settings

Please refer to introduction in Running Status (page 17).

### Wireless Security Settings

Please refer to introduction in Running Status (page 22).

### Wireless MAC Address Filter

| <ul> <li>Running Status</li> </ul>    | Wireless MAC Address Filter |  |               |  |
|---------------------------------------|-----------------------------|--|---------------|--|
| Running Status                        | Access Policy               |  |               |  |
| Wireless Basic Settings               | Policy                      | Allow 🗸                                  |               |  |
| Wireless Security Settings            | Add MAC                     | 0 - 0 - 0 - 0 - 0 - 0 Search MAC Address |               |  |
| ► LAN                                 | The maximum rule numb       | ,<br>per is 10.                          |               |  |
| <ul> <li>Wireless Settings</li> </ul> |                             |  |               |  |
| Wireless Basic Settings               | Save Cancel                 |  |               |  |
| Wireless Security Settings            |                             |  |               |  |
| Wireless MAC Address Filter           | MAC Address List            |  |               |  |
| Advanced Wireless Settings            | NO.                         | MAC Address                              | Access Policy |  |
| Wireless Clients List                 |                             |  |               |  |
| wireless Clients List                 | Delete                      |  |               |  |
| WPS Settings                          |                             |  |               |  |

You can allow/deny the computers connecting to the router wirelessly by entering the MAC address with this feature.

If you only want MAC address (00:0A:EB:00:07:5F) to access the Wireless Network while others cannot:



1: Choose **Allow** for the security policy.

2: Fill MAC address 00:0A:EB:00:07:5F in and click Save.

If you want MAC address (00:0A:EB:00:07:5F) cannot access the Wireless Network while others can:

1: Choose **Reject** for the security policy.

2: Filling MAC address 00:0A:EB:00:07:5F in and click Save.

### Advanced Wireless Settings

| <ul> <li>Running Status</li> </ul>    | Advanced Wireless Settings     |                                       |  |  |  |
|---------------------------------------|--------------------------------|---------------------------------------|--|--|--|
| Running Status                        | Advanced Wireless parameters   |                                       |  |  |  |
| Wireless Basic Settings               | BG Protection Mode             | Auto 💌                                |  |  |  |
| Wireless Security Settings            | Beacon Interval                | 100 ms (Range 20 - 999, Default 100)  |  |  |  |
| ► LAN                                 | DTIM (Delivery Traffic         | 1 mc (Papas 1, 255, Default 1)        |  |  |  |
| <ul> <li>Wireless Settings</li> </ul> | Indication Message)            | ms (Range 1 - 200, Delaun 1)          |  |  |  |
| Wireless Basic Settings               | Fragment Threshold             | 2346 (Range 256 - 2346, Default 2346) |  |  |  |
| Wireless Security Settings            | RTS Threshold                  | 2347 (Range 1 - 2347, Default 2347)   |  |  |  |
| Wireless MAC Address Filter           | TX Power                       | 100 (Range 1 - 100, Default 100)      |  |  |  |
| Advanced Wireless Settings            | Short Preamble                 | ○ Enabled                             |  |  |  |
| Wireless Clients List                 | Pkt_Aggregate                  | ● Enabled ○ Disabled                  |  |  |  |
| WPS Settings                          | DFS RDRegion                   | ETSI(1-13) 👻                          |  |  |  |
| <ul> <li>DHCP Server</li> </ul>       | WMM Bandwidth Manageme         | ent                                   |  |  |  |
| <ul> <li>System Tools</li> </ul>      | WMM Capable                    |                                       |  |  |  |
| ▶ Logout                              | APSD Capability                | C Enabled  O Disabled                 |  |  |  |
|                                       | WMM Parameters                 | WMM Configuration                     |  |  |  |
|                                       | Multicast-to-Unicast Converter |                                       |  |  |  |
|                                       | Multicast-to-Unicast           | ast  Instead Installed                |  |  |  |
|                                       | Save Cancel                    |                                       |  |  |  |

This section is to configure the advanced wireless setting of the Router, if you are not familiar with the setting items in this page, it's strongly recommended to keep the provided default values, otherwise it may result in lower wireless network performance.

BG Protection Mode: Leave it as Auto.

**Beacon Interval**: The interval for sending packets of the Beacon frame. Its value range is 20-1000 in unit of ms. The default is 100.

**DTIM**: It indicates the interval of the delivery traffic indication message (DTIM). The value range is between 1 and 255 milliseconds. The default value is 1.

**Fragment Threshold**: Set the fragmentation threshold. Packets larger than the size set in this field will be fragmented. Too many data packets will lower the Wireless Network performance. The Fragment Threshold value should not be set too low. The default value is 2346.

**RTS Threshold**: Set the RTS (Request to send threshold.) threshold. When the packet size is larger than the preset RTS size, the wireless router will send a RTS to the destination station to start a negotiation. The default value is 2347.



TX Power: Wireless transmission power. You can choose from 1 to 100.

Short Preamble: Leave it as enable.

Pkt\_Aggregate: Leave it as disable.

DFS RD Region: Choose the region for the wireless network.

**Enable WMM**: If you select it, the router will process the packets with the priority first. You are recommended to select this option.

APSD Capable: It is used for auto power-saved service. It is Disabled by default.

Multicast-to-Unicast: Leave it as enable.

#### Wireless Clients List

| <ul> <li>Running Status</li> </ul> | Wireless Clients List |     |     |        |     |    |     |      |
|------------------------------------|-----------------------|-----|-----|--------|-----|----|-----|------|
| Running Status                     | Wireless Devices      |     |     |        |     |    |     |      |
| Wireless Basic Settings            | MAC Address           | Aid | PSM | MimoPS | MCS | BW | SGI | STBC |

You can check the wireless clients of the access point in this page.

### **WPS Settings**

| <ul> <li>Running Status</li> </ul>    | Wi-Fi Protected Setup (WPS)   |                |  |  |  |  |
|---------------------------------------|---|----------------|--|--|--|--|
| Running Status                        | WPS Settings Configuration  |                |  |  |  |  |
| Wireless Basic Settings               | WPS settings: Enabled V   |                |  |  |  |  |
| Wireless Security Settings            |   |                |  |  |  |  |
| ► LAN                                 | Save  |                |  |  |  |  |
| <ul> <li>Wireless Settings</li> </ul> |   |                |  |  |  |  |
| Wireless Basic Settings               | WPS settings list   |                |  |  |  |  |
| Wireless Security Settings            | WPS Current Status:   | Idle           |  |  |  |  |
| Wireless MAC Address Filter           | The Configured WPS:   | No             |  |  |  |  |
| Advanced Wireless Settings            | WPS SSID:   | Phicomm-535000 |  |  |  |  |
|                                       | WPS authentication mode: Open   |                |  |  |  |  |
| wireless clients List                 | WPS encryption type:  | None           |  |  |  |  |
| WPS Settings                          | The Default Key Index of WPS: 1   |                |  |  |  |  |
| DHCP Server                           | WPS Key(ASCII)  |                |  |  |  |  |
| <ul> <li>System Tools</li> </ul>      | PIN (Personal identification number): 91470560 Generate Pin Restore Pin |                |  |  |  |  |
| ▶ Logout                              |   |                |  |  |  |  |
|                                       | OOB   |                |  |  |  |  |
|                                       | MDC mode acting   |                |  |  |  |  |
|                                       | WPS mode settings   | 0.000          |  |  |  |  |
|                                       | WPS mode:   |                |  |  |  |  |
|                                       | Personal identification number (PIN)                                    |                |  |  |  |  |
|                                       |   |                |  |  |  |  |
|                                       | Save  |                |  |  |  |  |

The WPS function can help you add a new device to the network quickly. If the client device supports Wi-Fi Protected Setup and is equipped with a WPS button, you can add it to the network by pressing the WPS button on the device and then press the button on the router



within two minutes. The status LED on the router will light green for five minutes if the device has been successfully added to the network; If your client asks for the Router's PIN number, enter the router's PIN number into your client device; If your client device has a WIFI Protected Setup PIN number, enter that number in the PIN box.

WPS (Wi-Fi Protected Setting): Easy and quick to establish the connection between wireless network client and the router through encrypted contents. The users only enter the PIN code to configure without selecting encryption method and entering secret keys by manual. WPS Mode: Supports two ways to configure WPS settings: PBC (Push-Button Configuration) and

PIN code.

**PBC:** Select the **PBC** button or press the WPS button on the panel of the Router. (Press WPS button and WPS LED will blink, which means the WPS function is enabled. During the blinking time, press the WPS button on another network device, WPS LED light will become solid when the connection succeeds.)

**PIN:** If this option is enabled, you need to enter a wireless clients PIN code in the blank and keep the same code in the client.

# **DHCP Server**

There are three submenus under the DHCP menu: DHCP, Address Reservation and DHCP Clients List. Click any of them, and you will be able to configure the corresponding function.

| ▼ DHCP Server       |  |
|---------------------|--|
| DHCP                |  |
| Address Reservation |  |
| DHCP Clients List   |  |

### DHCP

| Running Status                        | DHCP                 |   |
|---------------------------------------|----------------------|---|
| Running Status                        | DHCP Server          | ● Enabled ○ Disabled                    |
| Wireless Basic Settings               | Start IP Address     | 192 · 168 · 0 · 1                       |
| Wireless Security Settings            | End IP Address       | 192 - 168 - 0 - 254                     |
| ► LAN                                 | Lease Time           | 86400 sec (The default value is 864 00) |
| <ul> <li>Wireless Settings</li> </ul> | Default Gateway      | 192 - 168 - 0 - 254                     |
| ▼ DHCP Server                         | Primary DNS Server   | 192 . 168 . 0 . 254 (Optional)          |
| DHCP                                  | Secondary DNS Server | 192 . 168 . 0 . 254 (Optional)          |
| Address Reservation                   |                      |   |
| DHCP Clients List                     | Sava Canaal          |   |
| <ul> <li>System Tools</li> </ul>      | Save Cancer          |   |

If you enable DHCP server of the router, the DHCP server automatically configures the TCP/IP protocol for each computer in the LAN.



**DHCP Server:** If you disable the server, please make sure you have another DHCP server in your network.

Start IP Address: The first address in the IP Address pool.

End IP Address: The last address in the IP Address pool.

Lease Time: It is the time interval that server will change to use another DHCP address.

Default Gateway: (Optional) Suggest to input the IP Address of the LAN port of the Router.

**Primary DNS Server:** (Optional) Input the DNS IP address provided by your ISP. Or consult your ISP.

**Secondary DNS Server:** (Optional) You can input the IP Address of another DNS server if your ISP provides two DNS servers.

**Note**: To use the DHCP server function of the router, please configure all computers in the LAN as Obtain an IP Address automatically mode. This function will take effect after the router rebooted.

#### **Address Reservation**

| <ul> <li>Running Status</li> </ul>    | Address Reservation |               |                    |        |
|---------------------------------------|---------------------|---------------|--------------------|--------|
| Running Status                        | Set rules           | ;             |                    |        |
| Wireless Basic Settings               |                     | IP Address    |                    |        |
| Wireless Security Settings            |                     | MAC Address   | Search MAC Address |        |
| ► LAN                                 |                     |               |                    |        |
| <ul> <li>Wireless Settings</li> </ul> | Save                | Cancel        |                    |        |
| ▼ DHCP Server                         |                     |               |                    |        |
| DHCP                                  | NO.                 | IP Address    | MAC Address        | Delete |
| Address Reservation                   | 1                   | 192.168.0.246 | 00:0B:2F:5A:8C:3C  |        |
| DHCP Clients List                     |                     |               |                    |        |
| ► System Tools                        | Delete              |               |                    |        |

When you specify a reserved IP address for a PC in the LAN, that PC will always receive the same IP address each time when it accesses the DHCP server. Reserved IP addresses could be assigned to servers that require permanent IP settings.

IP Address: The IP address that the Router reserved.

MAC Address: The MAC Address of the PC that you want to reserve for an IP address.

Note: This function takes effect only when the DHCP service is enabled.

### **DHCP Client List**

| <ul> <li>Running Status</li> </ul> | DHCP Clients List                              |             |            |            |  |  |  |
|------------------------------------|--|-------------|------------|------------|--|--|--|
| Running Status                     | Host Name                                      | MAC Address | IP Address | Lease Time |  |  |  |
| Wireless Basic Settings            | zhoujie 8C:89:A5:1C:C9:1E 192.168.0.1 22:38:35 |             |            |            |  |  |  |
| Wireless Security Settings         |  |             |            |            |  |  |  |
| ► LAN                              | Refresh  |             |            |            |  |  |  |

Here you can see the information of DHCP Clients.



Refresh: Click Refresh button to refresh the DHCP clients list.

# System Tools

There are seven submenus under the System Tools: Factory Defaults, Backup and Restore,

**Password**, **System Log**, **Traffic Statistics**, **Firmware Upgrade** and **Reboot**. Click any of them, and you will be able to configure the corresponding function.



# Factory Defaults

| Running Status             | Factory Defaults     |                      |
|----------------------------|----------------------|----------------------|
| Running Status             | Factory Defaults     |                      |
| Wireless Basic Settings    | Restore All Settings | Restore All Settings |
| Wireless Security Settings |                      |                      |

Click **Restore All Settings** button to reset all configuration settings to their default values.

**Note**: All changed settings will be lost when defaults are restored.

# Backup and Restore

| <ul> <li>Running Status</li> </ul>    | Backup and Restore  |  |  |
|---------------------------------------|---|--|--|
| Running Status                        | Backup Settings   |  |  |
| Wireless Basic Settings               | Backup Button Backup  |  |  |
| Wireless Security Settings            |   |  |  |
| ► LAN                                 | Warning! To upgrade the incorrect configuration file will lose your settings. |  |  |
| <ul> <li>Wireless Settings</li> </ul> | Restore Settings  |  |  |
| DHCP Server                           | Set File Locations Browse   |  |  |
| ▼ System Tools                        |   |  |  |
| Factory Defaults                      | Save Cancel   |  |  |
| Backup and Restore                    |   |  |  |

In the Export Settings column, click **Backup** button to save all configuration settings to your local computer as a file.

To restore the Router's configuration, follow these instructions:

1) Click **Browse** button to find the configuration file which you want to restore.



2) Click **Save** button to update the configuration with the file whose path is the one you have input or selected in the blank.

Note: Keep the power on during the process, in case of any damage.

# Password

| <ul> <li>Running Status</li> </ul>    | Password            |       |
|---------------------------------------|---------------------|-------|
| Running Status                        | Account Management  |       |
| Wireless Basic Settings               | Username            | admin |
| Wireless Security Settings            | New Passowrd        | ••••• |
| ► LAN                                 | Repeat New Password |       |
| <ul> <li>Wireless Settings</li> </ul> |                     |       |
| DHCP Server                           | Save                |       |
| <ul> <li>System Tools</li> </ul>      | Care Care           |       |

You can change the log in password for this web management page, not your ISP password or the wireless password.

# System Log

| <ul> <li>Running Status</li> </ul>        | System Log  |   |   |
|---|---|---|---|
| Running Status<br>Wireless Basic Settings | Enable remote System<br>Log   |   |   |
| Wireless Security Settings                | IP Address  |   |   |
| ► LAN                                     |   |   |   |
| <ul> <li>Wireless Settings</li> </ul>     | Save  |   |   |
| <ul> <li>DHCP Server</li> </ul>           | Log Informations  |   |   |
| <ul> <li>System Tools</li> </ul>          |   | evelopinfo eveloped stated. Result 12.1 |   |
| Factory Defaults                          | Jan 1 00:00:10 11AP syslog.info syslogd started: BusyBox v1.12.1<br>Jan 1 00:00:12 11AP user.info kernel: br0: topology change detected, propagating                  |   |   |
| Backup and Restore                        | Jan 1 00:00:12 11AP user.info kernel: br0: port 2(ra0) entering forwarding state  |   |   |
| Password                                  | Jan 1 00:00:19 11AP user.info kernel: br0: topology change detected, propagating<br>Jan 1 00:00:19 11AP user.info kernel: br0: port 1(eth2) entering forwarding state |   |   |
| System Log                                |   |   |   |
| Traffic Statistics                        |   |   |   |
| Firmware Upgrade                          |   |   |   |
| Reboot                                    |   |   |   |
| ▶ Logout                                  |   |   |   |
|   |   |   |   |
|   |   |   | ~ |
|   | <   | <u>&gt;</u>                             |   |
|   | Clean   |   |   |

The system log is a detailed record of the websites that users on your network have accessed or attempted to access. You can enable remote System Log function to view the log in remote place.

Enable remote System Log: Check the radio button to enable remote System Log.

Save: Click Save button to save your Log.



Clean: Click Clean button to clear all shown information.

## **Traffic Statistics**

| <ul> <li>Running Status</li> </ul>    | Traffic Statistics  |          |  |
|---------------------------------------|---|----------|--|
| Running Status                        | Memory  |          |  |
| Wireless Basic Settings               | Total Memory Capacity:                                    | 13992 kB |  |
| Wireless Security Settings            | The remaining amount of memory:                           | 3168 kB  |  |
| ► LAN                                 | LAN   |          |  |
| <ul> <li>Wireless Settings</li> </ul> | The packet numbers that the local area network receives:  | 2222     |  |
| ► DHCP Server                         | The data amount that the Local area network receives:     | 158481   |  |
| <ul> <li>System Tools</li> </ul>      | The packet numbers that the local area network transmits: | 1094     |  |
| Factory Defaults                      | The data amount that the local area network transmits:    | 619426   |  |
| Backup and Restore                    | All of the interface                                      |          |  |
| Password                              | Name  | eth2     |  |
| System Log<br>Traffic Statistics      | Rx Packet   | 2225     |  |
|                                       | Rx Byte   | 190694   |  |
|                                       | Tx Packet   | 1085     |  |
| Paboat                                | Tx Byte   | 616840   |  |
| Logout                                | Name  | lo       |  |
|                                       | Rx Packet   | 14       |  |
|                                       | Rx Byte   | 2257     |  |
|                                       | Tx Packet   | 14       |  |
|                                       | Tx Byte   | 2257     |  |
|                                       | Name  | br0      |  |
|                                       | Rx Packet   | 2222     |  |
|                                       | Rx Byte   | 158481   |  |
|                                       | Tx Packet   | 1094     |  |

This page displays the current system memory usage, WLAN, LAN and WAN networks to send and receive data packets to the number.

### Firmware Upgrade

| Running Status                        | Firmware Upgrade  |  |
|---------------------------------------|---|--|
| Running Status                        | Warning:Upgrading firmware may take a few minutes,please don't turn off the router or press the reset button. |  |
| Wireless Basic Settings               | Firmware Upgrade  |  |
| Wireless Security Settings            | - 16  | Notice: After upgrade, AP might lost its configurations, It is better to save your<br>configuration to file before upgrading |
| ► LAN                                 | Diseas coloritation unusuals file   | Brauna Lineat  |
| <ul> <li>Wireless Settings</li> </ul> | Please select the upgrade file  | Druwse Upgrade   |

You can upgrade the router to the lasted version in this page, please download a most recent firmware upgrade file from our website. After downloading the file, you need to extract the zip file before upgrading the router. Browse for the upgrade file, then click **Upgrade** button.

**Caution!** Once you click **Upgrade** button, do not interrupt the process, loss of power during the upgrade could damage the Router.



#### Note:

- Router might be changed to factory default settings after upgrade, please backup in advance.
- During the updating, please do not turn off the power.
- Please make sure the software version is matching with the existing hardware.

#### Reboot

| Running Status          | Reboot        |        |
|-------------------------|---------------|--------|
| Running Status          | Reboot        |        |
| Wireless Basic Settings | Reboot Router | Reboot |

Click **Reboot** button to reboot the Router.

## Logout

Click to logout from the router's web management page.



# Chapter5: PoE (Power over Ethernet)

Equipped with Power Injector, the Access Point can be placed at any position regardless of the location of the Power Adapter (within a certain distance range).

# Hardware Overview of PoE



**DC**: Connect to the provided power adapter.

PoE: Connect to the LAN port of AP.

LAN: Connect to the Ethernet device with CAT5 Ethernet cable to transmit data.

# Installation with PoE Injector

- 1. Turn off all your network devices, including the Switch, power injector and the AP.
- 2. Connect your Modem Router to the LAN port on the power injector with an Ethernet cable.
- 3. Plug the provided power adapter into the DC jack on the power injector, and the other end to a standard electrical wall socket.
- 4. Connect your AP to the PoE (LAN) port on the power injector with an Ethernet cable.



Note: Provided with the power of DC 5V/1A, the cable between PoE port of passive PoE Injector and the LAN port on Access Point is not more than 30m long, and all cables connected to the passive PoE Injector should be no more than 100m long.



# **Chapter6: Specification**

| Wireless                |  |  |
|-------------------------|--|--|
| Standards               | IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, CSMA/CA with ACK   |  |
| Data Rate               | 11n: 150Mbps, 11g: 54Mbps, 11b: 11Mbps   |  |
| Frequency Range         | 2.4-2.4835GHz  |  |
| Wireless Transmit Power | < 20dBm  |  |
| Modulation Type         | OFDM/CCK/16-QAM/64-QAM   |  |
| Receive Sensitivity     | 150M: -68dBm@10% PER, 108M: -68dBm@10% PER, 54M: -68dBm@10% PER,<br>11M: -85dBm@8% PER, 6M: -88dBm@10% PER |  |
| Wireless Security       | 64/128-bit WEP, WPA/WPA2-Enterprise, WPA/WPA2-Personal (TKIP/AES)  |  |
| System Requirements     | Microsoft® Windows® 98SE, NT, 2000, XP, Vista and Windows 7, MAC® OS, NetWare®, UNIX® or Linux             |  |
| Hardware                |  |  |
| Interface               | 1 x 10/100Mbps LAN port with passive PoE supported   |  |
| Buttons                 | ON/OFF Button, WPS Button, Reset Button  |  |
| Antenna                 | 1 x3dBi Detachable Omni-directional Antenna  |  |
| Power Supply            | DC 12V 0.5A  |  |
| Dimensions(W x D x H)   | 165mm x 106mm x 26.5mm   |  |
| Others                  |  |  |
| Operating Temperature   | 0°C~40°C (32°F~104°F)  |  |
| Storage Temperature     | -40°C~70°C (-40°F~158°F)   |  |
| Relative Humidity       | 10%~90%, non-condensing  |  |
| Storage Humidity        | 5%~95%, non-condensing   |  |
| Certifications          | CE, RoHS   |  |
| Package Contents        | 1 x Wireless N Access Point  |  |
|                         | 1 x Power Adapter  |  |
|                         | 1 x Resource CD  |  |
|                         | 1 x Quick Installation Guide   |  |
|                         | 1 x Ethernet Cable   |  |
|                         | 1 x Passive PoE Injector   |  |

\*All references to speed and range are for comparison purposes only. Product specifications, size, and shape are subject to change without

notice, and actual product appearance may differ from that depicted herein.

34

# Appendix A: Troubleshooting

#### 1. How do I restore the Wireless Access Point to factory default settings?

When the Wireless Access Point is powered on, press and hold the reset button on the rear panel for 8~10 seconds, after all the lights start flashing, release it.

#### 2. What can I do if I forget my password?

- Restore the wireless Access Point to factory default settings. If you do not know how to do it, please refer to the answer for question 1.
- Use the default username and password: admin, admin.
- Reconfigure the wireless Access Point since you have ever reset it.
- 3. I cannot login the web management page.
- Check the computer's IP address, make sure the IP address is correct, for details please refer to the section of Configure the Computers IP Address in this manual.
- Make sure you put 192.168.0.254 into the address bar, not the search bar.
- Check your web browser, make sure the Proxy server is unchecked. Take Internet Explorer as an example, go to Tools>Internet Options>Connections>LAN Settings, uncheck Use a proxy server for your LAN.
- If it tells you the username or password is error, and you cannot remember the new one, please reset router by pressing reset button for at least 6 seconds, and then try to login with default username and password (admin/admin).



# **Appendix B: Certification**

# **FCC 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.

#### FCC Caution

- Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- 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.
- For product available in the USA market, only channel 1~11 can be operated. Selection of other channels is not possible.
- This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.
- This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.



• This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

# **CE Mark Warning**

# €€

Marking with the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC).

This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

#### **National Restrictions**

This device is intended for home and office use in all EU countries (and other countries following the EU Directive 1999/5/EC) without any limitation except for the countries mentioned below:

| Country               | Restriction   | Reason/remark  |
|-----------------------|---|--|
| Bulgaria              | None  | General authorization required for outdoor use and public  |
| France                | Outdoor use limited to 10 mW<br>e.i.r.p. within the band<br>2454-2483.5 MHz | Military Radiolocation use. Refarming of the 2.4 GHz band has<br>been ongoing in recent years to allow current relaxed<br>regulation. Full implementation planned 2012 |
| Italy                 | None  | If used outside of own premises, general authorization is required   |
| Luxembourg            | None  | General authorization required for network and service supply(not for spectrum)  |
| Norway                | Implemented   | This subsection does not apply for the geographical area within<br>a radius of 20 km from the centre of Ny-Ålesund   |
| Russian<br>Federation | None  | Only for indoor applications   |

Note: Please don't use the product outdoors in France.

# **Appendix C: Glossary**

**802.11b**: The 802.11b standard specifies a wireless networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.4GHz, and WEP encryption for security. 802.11b networks are also referred to as Wi-Fi networks.

**802.11g**: Specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology, using OFDM modulation and operating in the unlicensed radio spectrum at 2.4GHz, and backward compatibility with IEEE 802.11b devices, and WEP encryption for security.

Access Point (AP): A wireless LAN transceiver or base station that can connect a wired LAN to one or many wireless devices. Access points can also bridge to each other.

**DNS (Domain Name System):** An Internet Service that translates the names of websites into IP addresses.

Domain Name: A descriptive name for an address or group of addresses on the Internet.

**DoS (Denial of Service)**: A hacker attack designed to prevent your computer or network from operating or communicating.

**DSL (Digital Subscriber Line):** A technology that allows data to be sent or received over existing traditional phone lines.

**ISP (Internet Service Provider)**: A company that provides access to the Internet.

**MTU (Maximum Transmission Unit)**: The size in bytes of the largest packet that can be transmitted.

**SSID:** A Service Set Identification is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name.

**WEP (Wired Equivalent Privacy)**: A data privacy mechanism based on a 64-bit or 128-bit or 152-bit shared key algorithm, as described in the IEEE 802.11 standard.

**Wi-Fi**: A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see http://www.wi-fi.net), an industry standards group promoting interoperability among 802.11b devices.

WLAN (Wireless Local Area Network): A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.



WPA (Wi-Fi Protected Access): WPA is a security technology for wireless networks that improves on the authentication and encryption features of WEP (Wired Equivalent Privacy). In fact, WPA was developed by the networking industry in response to the shortcomings of WEP. One of the key technologies behind WPA is the Temporal Key Integrity Protocol (TKIP). TKIP addresses the encryption weaknesses of WEP. Another key component of WPA is built-in authentication that WEP does not offer. With this feature, WPA provides roughly comparable security to VPN tunneling with WEP, with the benefit of easier administration and use. This is similar to 802.1x support and requires a RADIUS server in order to implement. The Wi-Fi Alliance will call this, WPA-Enterprise. One variation of WPA is called WPA Pre Shared Key or WPA-PSK for short, this provides an authentication alternative to an expensive RADIUS server. WPA-PSK is a simplified but still powerful form of WPA most suitable for home Wi-Fi networking. To use WPA-PSK, a person sets a static key or "passphrase" as with WEP. But, using TKIP, WPA-PSK automatically changes the keys at a preset time interval, making it much more difficult for hackers to find and exploit them. The Wi-Fi Alliance will call this WPA-Personal.

# PHICOMM

#### Shanghai Feixun Communication Co., Ltd.

E-mail: support@phicomm.com Website: www.phicomm.com

Copyright © 2011 Shanghai Feixun Communication Co., Ltd. All rights reserved.