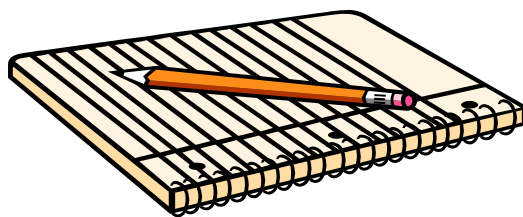


High-Power Wireless 150N Outdoor CPE / Access Point

Quick installation guide V1.0



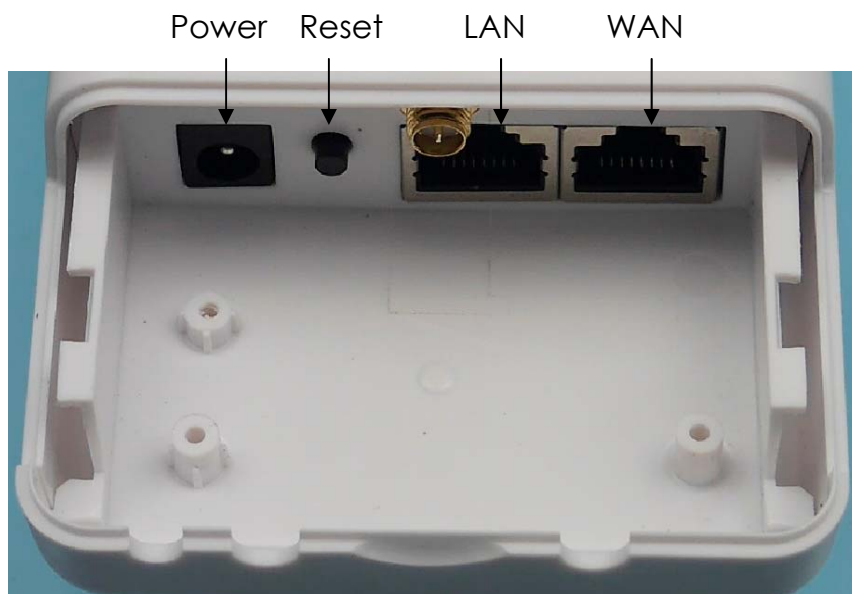
May 2015

This guide describes how to quickly install CPE and how to easily configure outdoor CPE step by step followed the guidance which offers a very visual way to help end user/ maintenance staff of network etc spent a little bit time to have a whole ideas how to make CPE work fine.

1 Quick Configuration guideline

The First Step : Connecting the device

- Interface:



Pic- 1 CPE Physical Interface

- Power: DC Jack, please equip with 12V/1A DC power adapter
- Reset: Two ways of restoring factory defaults as below
 - 1) Go to **System**→**Factory Defaults** web page, press" **Load Defaults**" button;
 - 2) Press reset button in 5-10s, then release it, device will restore configuration to factory defaults.



Caution

Pls keep regular power supply of the device in process of implementing "Restore Factory Defaults",otherwise may cause device damage.

- Connection means as figure-2:

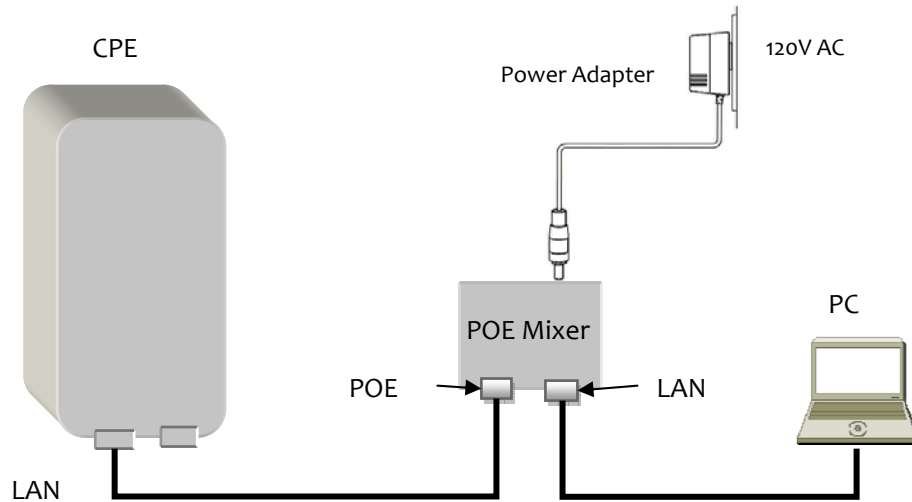


Figure-2 CPE connect to POE Mixer & Power adapter diagram



Incorrect connection means or plug in power supply which don't belong to the package may cause device damage!

The Second Step: Start-up and Login

- 1) As figure-2 shown, please make it ready for CPE connect with PC
 - 2) Consign local IP address with 192.168.2.X (X=2-254) on PC side(The IP address must keep same segment with CPE's gateway address),subnet mask:255.255.255.0
- As figure-3、4 shown:

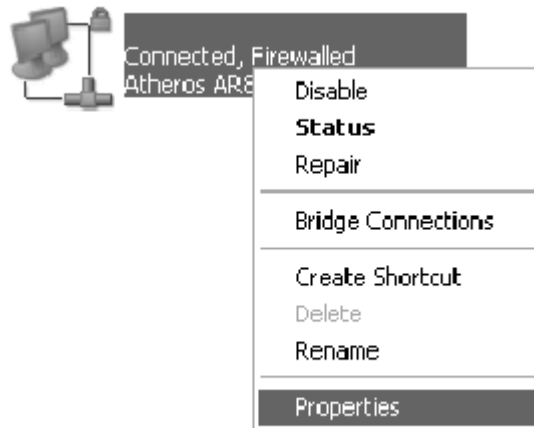


Figure-3 Configure IP address of PC

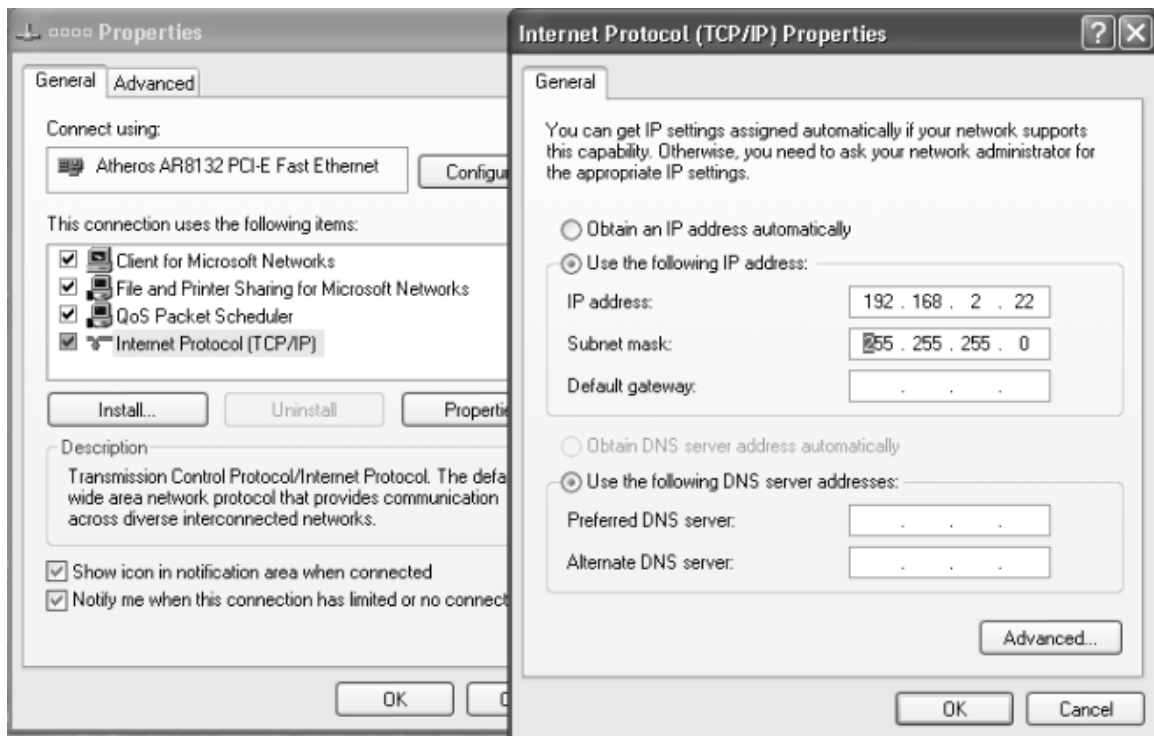


Figure 4 LAN IP address settings on PC side

3) Connecting to equipment via wireless

After basic settings of the equipment, if you want to access internet or just the equipment via wireless, please configure local "Wireless Network" properties, lock mouse on the icon of Wireless Network then click right button of mouse, you'll see figure- 5 shown, then click "View Available Wireless Network" to filter out which AP or

router you wish to connect with.

Defaults SSID:CPE-XXXX; Defaults Password: blank



Figure- 5 Wireless Network Icon

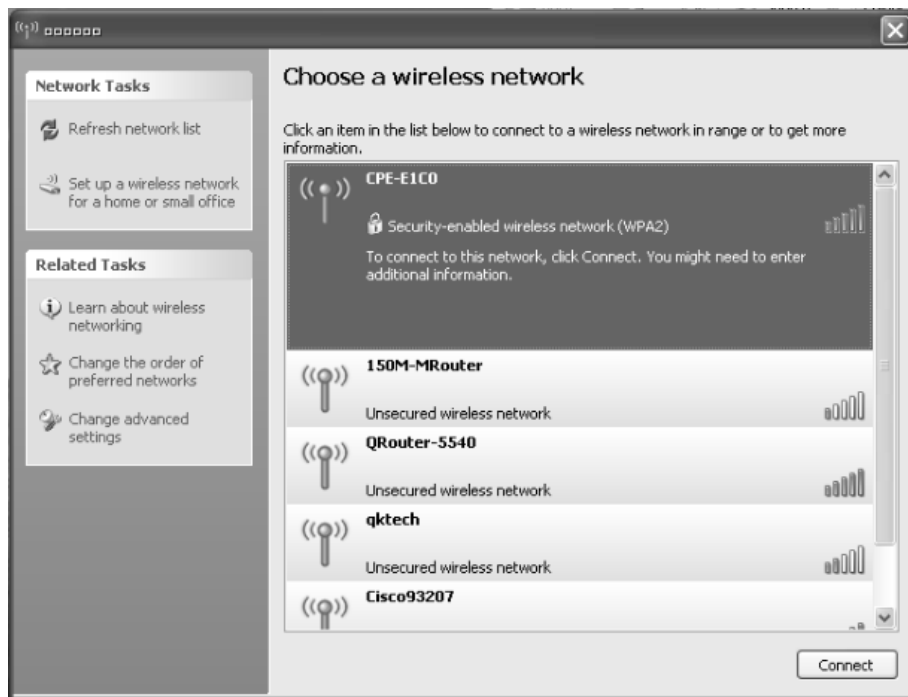


Figure- 6 Wireless Connection Settings



Caution

- A. If your Laptop or PC has internal wireless 802.11b/g/n LAN card, but couldn't find wireless network, please contact with service department of your computer vendor for help:
 - 1) Click right button upon "My Network Places", then select "Properties", if you could find "Local Network" but there is no "Wireless Network" icon.
 - 2) There is "Local Network" icon, but click right button upon the button and select "Properties", just find "Regular" and "Advanced" option, but there is no "Wireless Network Settings" even if you have ever successfully connected with other wireless hotspot.
 - B. Click on "Refresh Network List", all hotspot list scanned will be listed on the right. Select specified SSID you wish to connect with (If password is a must, please input it in pop-up page)
-

4) Enters "<http://192.168.2.1>" on IE, then you'll see login page as Figure-8 shown;

Defaults User Name: admin; Defaults Password: admin



Figure-7 Enter gateway address in IE explore



Figure-8 Login Page

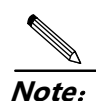
The Third Step: Setup Wizard

- ① While you login web page, please go to **Setup Wizard** → click "**Scan**" → Select "**SSID**" →

Enter encryption password→Select specified WAN type **PPPOE**、**DHCP**、**Static** →click **Next Step**

	Signal	SSID	BSSID	Channel	Security	Option
☒	(70%)	TP-LINK_2.4GHz	6c:e8:73:ff:b8:9d	11	WPA	tkip
☐	(34%)	Cisco93207	58:6d:8f:b2:09:af	11	NONE	
☐	(70%)	qktech-access	00:22:ed:da:bc:00	13	WPA	aes

Figure – 9 WISP Settings



Note:

- ✧ **DHCP:** If the device connect to DHCP Server of uplink or WISP, pls select this mode. The device will obtain IP address from uplink DHCP server or WISP automatically.
- ✧ **PPPoE:** If WISP offer PPPoE access type, pls select this mode. You should fill in both the User Name and Password that your ISP supplies
- ✧ **Static:** If WISP offer Static IP access, pls select this mode and enter IP address/Subnet Mask/Gateway and DNS server IP address

② LAN Settings:

You could change Gateway IP adress here or keep defaults, then click **Next**

The Second Step - LAN Settings

Figure - 10 LAN Settings

③DHCP Server Settings:

You can enable or disable DHCP server here, then click **Next**

The Third Step - DHCP Server Settings

To configure the router's DHCP Server which is used for allocating IP address to those devices upon the router

DHCP Server Status:	☐ Disable ☒ Enable
Start-IP Address:	192 . 168 . 2 . 50
End-IP Address:	192 . 168 . 2 . 100
Lease(Sec):	86400
Gateway:	. . .
DNS1:	. . .
DNS2:	. . .

Figure - 11 DHCP Server Settings

④Wireless Settings:

To configure wireless settings of the device,you could **enable** or **disable** wireless here,select security mode/set encrypt key etc,after that click **Apply** to save previous settings.

Wireless Basic Settings

Status:	☐ Disable ☒ Enable
Mode:	11n/G(40M)-
Channel:	Auto
SSID:	CPE-E1C0
Broadcast SSID:	☐ Disable ☒ Enable
Isolated:	☒ Disable ☐ Enable
Security Mode:	WPA2PSK

WPA Security Settings

WPA Encrypt Type:	☐ TKIP ☒ AES ☐ AUTO
WPA Key:	 ☐ text
WPA Rekey Time(sec):	

Figure - 12 Wireless Settings



The device will reboot after changing these settings, if you just keep defaults value pls click Next for further process

The Fourth Step: AP Client Settings

AP Client: In this mode, the device associate with nearby AP and checks the network device combination as a standard mobile unit(MU).The access point then forms a wireless bridge between the wired LAN and clients through the device. CPE broadcasting its SSID, client devices obtain IP address from uplink hotspot or WISP.



Note: Both Ethernet port are LAN port on AP Client、AP、 WISP mode.(Both LAN port support POE for AP1105 modle)

Application Topology:

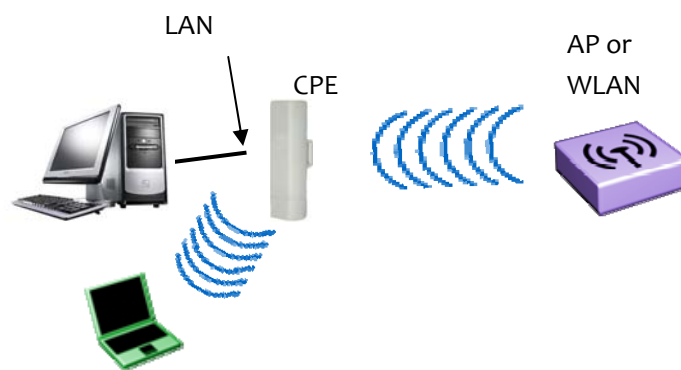


Figure - 13 Network Topology under AP Client mode

AP Client setup guide:

Connects to wireless AP or WLAN base station

Check "**Operation Mode**"→select "**AP Client**"→click" **Scan**"→select specified **SSID** you wish to connect with, then fill-in password →Click "**Apply**" to save settings

Setup Wizard >>

Operation Mode >>

+ Status >>

- Wireless >>

Basic
M-SSID
ACL
WDS
WMM
Advanced

+ Network >>

+ Security >>

+ System >>

+ Debug Tools >>

Refresh

Operation mode configuration, be used to configure right operation mode like Router or Repeater mode etc

☐ Router(Gateway)
☐ WISP
☐ Access Point(AP)
☒ **Ap Client**

AP client mode is used to relay other hotspot(AP) signal into the LAN port of the device, and keep them in a same broadcast domain, it's not a must whether other hotspot(AP) support WDS or not

SSID:

Scan

☐ Hide SSID

BSSID(MAC): : : : : : ☐ Lock MAC

Channel:

AUTO

Security Mode:

Disable

Local IP Address Settings

IP Address:

192

 .

168

 .

2

 .

1

Subnet Mask:

255

 .

255

 .

255

 .

0

Apply

Figure - 14 AP Client settings



Note:

- Channel without setting, since Channel of the CPE will automatically consistent with the front end WLAN base station in AP and AP Client mode.
- CPE will disable its DHCP server in AP Client mode, for management purpose you can assign different IP address for each CPE



Note:

If there is no targeted SSID in checking list, you'd better have some more "Scan" process. But if still nothing in checking list please double check if the frequency of WLAN's working channel beyond your CPE's scope. e.g CPE support 11 channel.

Moreover pls check if the communication protocol match between CPE and base station.

Some time pls restore factory settings before you configure the device

WDS Configuration

WDS

Refresh

WDS Mode: ☐ Disable ☐ Lazy ☒ Bridge ☐ Bridge+ ☐ Repeater

Type: ☒ PTP ☐ 1to2 ☐ 1to3 ☐ 1to4

WDS1 Settings

MAC Address1: : : : : : : :

Physical Mode: ☒ CCK ☐ OFDM ☐ HTMIX ☐ Green Field

Encrypt Type: ☒ Disable ☐ WEP ☐ TKIP ☐ AES

Figure -16 WDS Settings



WDS Bridge/Repeater setup just same with AP Client mode generally.but front end AP support WDS is a must when CPE is in WDS mode.

Note:

The fourth step: AP settings

Go to check "Operation Mode"→**Access Point (AP)** ",you'll see figure -17 page.

In this page you may set wireless access point related options by your needing,after that please click "**Apply**" to save settings and reboot device.

Setup Wizard >>

Operation Mode >>

+ Status >>

- Wireless >>

- Basic
- M-SSID
- ACL
- WDS
- WMM
- Advanced

+ Network >>

+ System >>

+ Debug Tools >>

Operation Mode option

Refresh

Operation mode configuration, be used to configure right operation mode like Router or Repeater mode etc

☐ Router(Gateway)
 ☐ WISP
 ☒ Access Point(AP)
 ☐ Ap Client

Bridges all wired and wireless ports to a same broadcast domain, the device is similar to a hub in this mode

Status:	☐ Disable ☒ Enable
Mode:	11n/G(40M)-
Channel:	Auto
SSID:	CPE-E1C0
Broadcast SSID:	☐ Disable ☒ Enable
Isolated:	☒ Disable ☐ Enable
Security Mode:	WPA2PSK

WPA Security Settings

WPA Encrypt Type:	☐ TKIP ☒ AES ☐ AUTO
WPA Key:	 ☐ text
WPA Rekey Time(sec):	

Local IP Address Settings

LAN Type:	☒ Static ☐ DHCP
IP Address:	192 . 168 . 2 . 1
Subnet Mask:	255 . 255 . 255 . 0
Gateway:	. . .
DNS1:	. . .
DNS2:	. . .

Apply

Figure - 17 AP Settings

- Select specified one you wish to enable its SSID, click "**Enable**". Once you enable BSSID, you could select one Channel and configure specified wireless parameter based the BSSID, also you could enable multiple SSID option.
- Once enable SSID CPE will broadcast its name. Select SSID blank you can change its name here.
- **Broadcast SSID**, Enable the option, SSID will be visible you can see the BSSID name by PC or laptop's wireless scan tools, once you disable it user couldn't find the SSID by scanning tools, the SSID has been hidden. But if you still wish to connect with the SSID, just enter the SSID name upon related interface item manually.
- **Security Mode**, In this option you can configure encrypt mode, key etc, security mode currently support Open、WEP、WPCPSK、WPA2PSK、WPCPSK/WPA2PSK etc.
- **Security Type**, Suggest security type to be TKIP mode which is more strengthen encryption type.

The Fifth step: Router(Gateway) Configuration

Click "**Operation Mode**" → "**Router(Gateway)**" go to basic configuration page, as figure -12 shown:

 **Note:** Router(Gateway) is what we usually say SOHO router function, Router connect to wired ISP to access internet (usually be ADSL, Cable etc). Here no detailed description, if necessary, please refer to typical SoHo wireless router configuration.

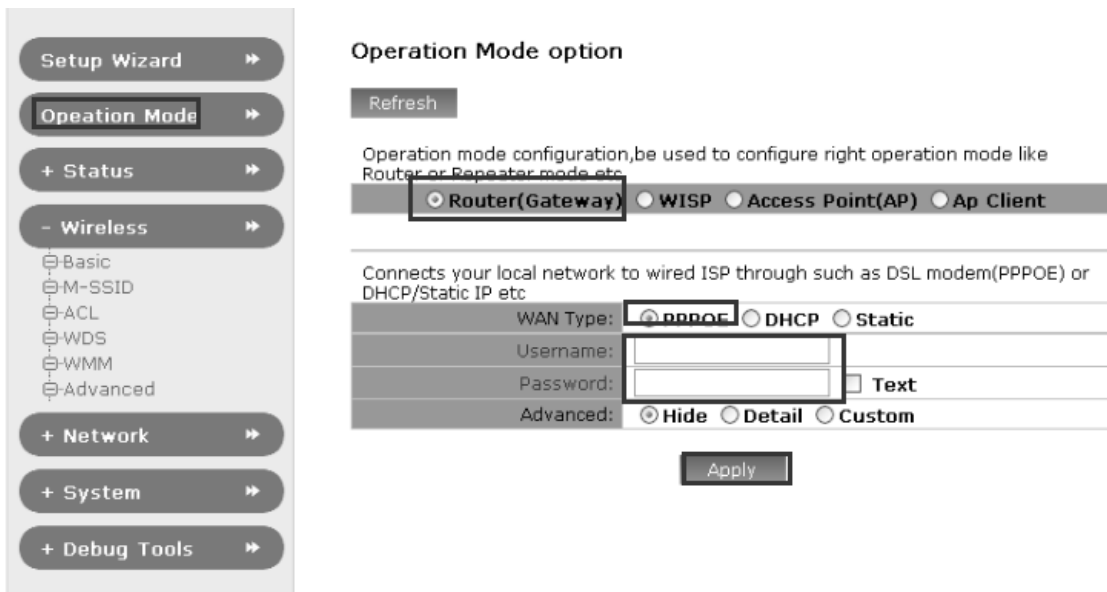


Figure - 12

- DHCP: When the Device connects to a DHCP server, or ISP support DHCP service, please choose this type. The Device will get the IP address automatically from the DHCP server or the WISP. Once the connection buildup successfully, you can access internet.
- PPPoE: If your wireless ISPs support PPPoE, you should choose this type. In this condition, you should fill in both the User Name and Password that your ISP provides.
- Static: In this type, you should manually fill in the **IP address, Subnet Mask, Default Gateway**, and **DNS IP address**, which are specified by your ISP. The Sixth Step:
- Connection status

After you finished related configuration and you wish to check if settings is succeed or not, please go to "**Status**" page for more details, as figure -19 shown

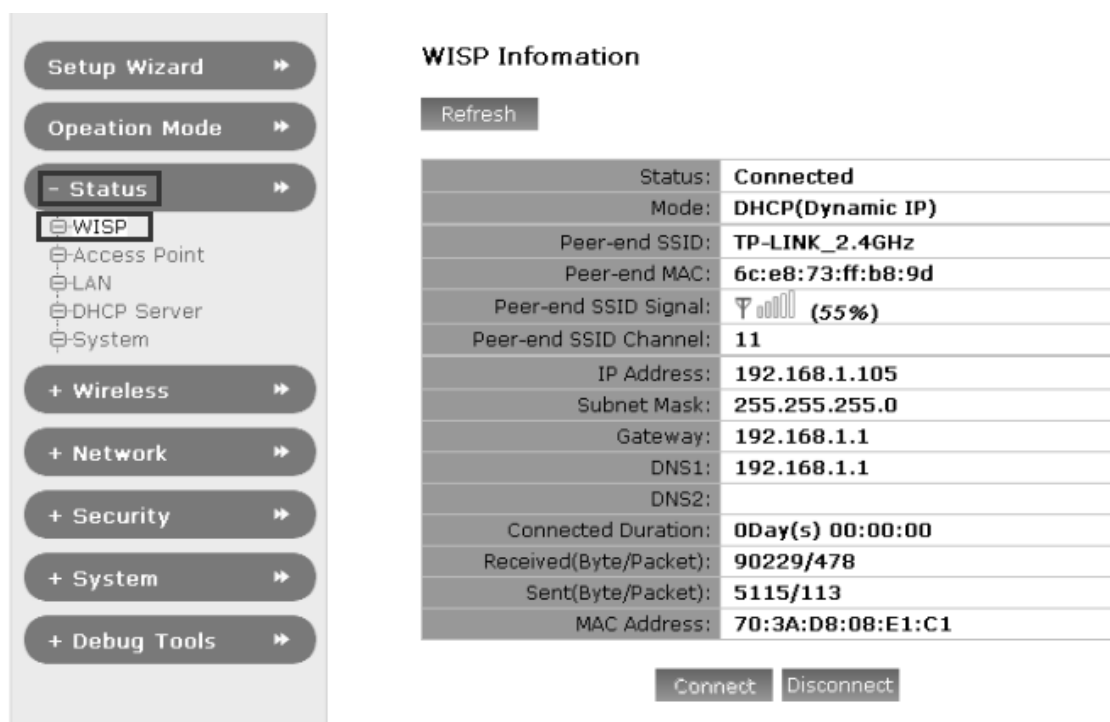


Figure - 19 CPE Connection Status

When CPE successfully connect with front-end WLAN base station or AP, the status will be **“Connected”**, also other options listed on the page .e.g “Peer-end SSID”,MAC address, RSSI etc



Note:

Signal strength should be greater than -75dBm,if it's weak than this CPE's Bridge/Repeater joint will be worse. Its performance of repeater joint will get worse in NLOS condition, but in order to have the best signal strength and throughput you can adjust the direction of CPE's directional ANT

2 PC Configuration:

To set automatic obtain IP address on PC or laptop side, then PC will get a IP address from CPE or ISP WLAN DHCP Server. As shown in Figure – 20.

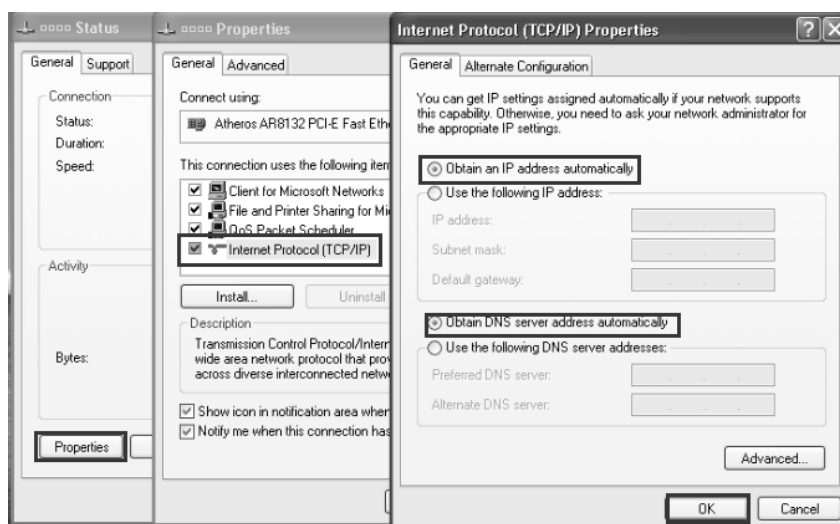


Figure - 20 IP address settings on PC

Once you finished this setting, you can implement “Ping” command to test if the connection is done.

3 System

Click “System” to go to system management page, as shown in Figure – 21.

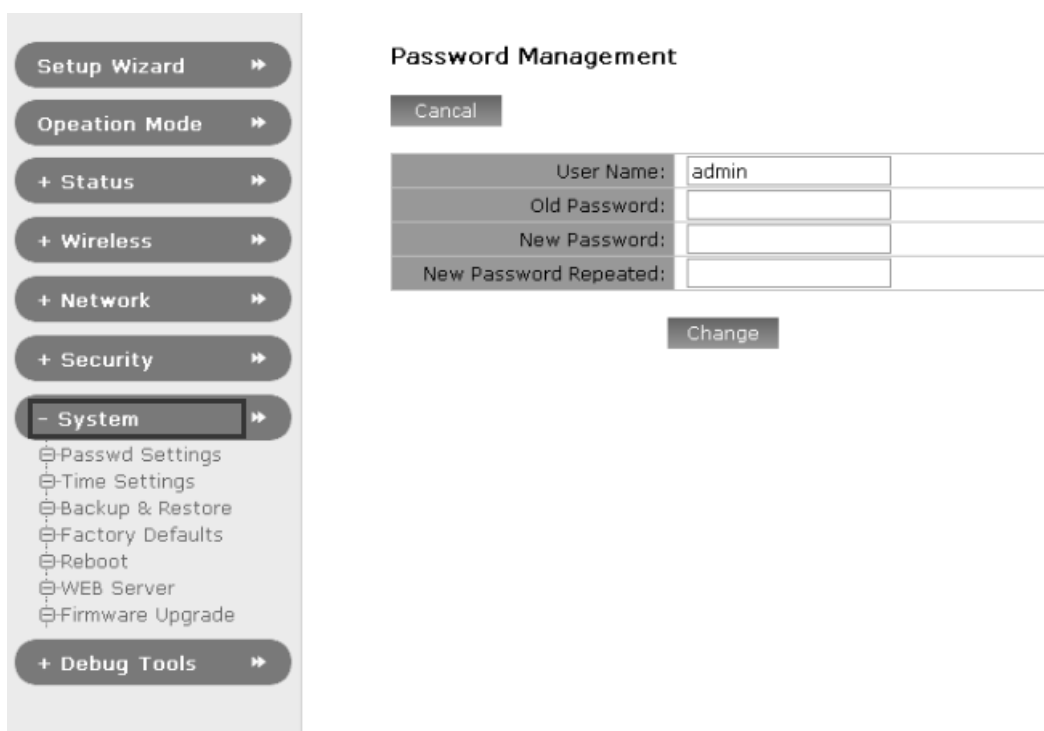


Figure - 21 System Management

- **Password Settings:** To set system administrator and password here.
- **Time Settings:** To set time zone and time information here.
- **Backup&Restore:** To export system configuration file to local document or import backup-file for restoring configuration to factory defaults.

- **Factory Defaults:** Restore system configuration to factory defaults.
- **Reboot:** re-power on system by software interface.
- **WEB Server:** To set web server related option here.
- **Firmware Upgrade:** To upgrade CPE's firmware for obtaining a more stable and functional performance of the CPE.



Note:

To restore CPE to factory defaults via physical reset button on housing by pressing reset button in 5-10s or click “Reset” button on web page.

You could check system logs on “Log Management” page, as shown in Figure -22

Log Management

Refresh

Local Log: ☐ Disable ☒ Enable

Remote Log: ☐ Disable ☒ Enable

Log Server IP: 192 . 168 . 2 . 88

Log Server Port: 514

Apply

Current Log

```

Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -F ippt
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A ippt
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -F input
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -F outpt
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -F forwa
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -F url )
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -F mac )
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A mac -
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -F local
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -t filter
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A local
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A local
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A local
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A local
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A local
Jan 1 00:00:00 (none) daemon.debug filter: system_string( iptables -A local

```

Clear

Figure - 22 System Logs

4 Troubleshooting:

Troubles	Treatment
SYS indicator doesn't shine	Please double check if the connection is done between POE box and LAN port. Right way is that put "POE" interface connect with CPE and "LAN" with PC or laptop.
Couldn't login Web page	1. Please check if both IP address is in same range. You can check it via selecting "Start"- "Run" bland and implementing "CMD" command, by ping "192.168.2.1" to test if the connection is done; 2. Restore factory defaults, then login again; 3. Double check there is no same IP address of "192.168.2.1" in same network range; 4. Please check if driver of your PC WLAN Nic has been installed correctly, and Ethernet cable is good.(10/100M UTP Ethernet cable is recommended strongly); 5. By entering "arp -d"command over "Start"- "Run" interface to clear arp bing; 6. To clear the Tem&Buffer filer of IE browser
CPE could not connect with front-end AP (Status: disconnected)	1. To scan wireless network again and reconnect hotspots; 2. Double check if wireless option of the CPE has been set correctly; 3. Double check if encrypt type & Key could match between AP and CPE; 4. If wireless signal of front-end AP is very poor, recommend it greater than -75dBm.
Couldn't detect signal of targeted CPE	Try to perform "Scan" command twice times, but if targeted SSID still be invisible, please check if channel of CPE could support front-end AP or hotspots'. Such as AP or hotspots working in Channel 11.
PC couldn't access internet, but indicator show connection has been connected successfully.	1. Please check IP address、 DNS etc is right on PC side 2. For DHCP, set WLAN NiC to obtain IP address automatically; 3. For Static IP address, please ask for correct IP & DNS address from your ISP.
To restore factory defaults	In powered on status of the CPE, press "RESET" button in 5-10s,then release the button, system will restore Factory Defaults.

Figure - 1 Troubles and treatment

*. 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.

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