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# 1 Introduction

The EW28650 In Wall Access Point revolutionizes the way wireless and wired IP-based services are delivered to hospitality, enterprise, and residential properties. The EW28650 integrates wired and wireless connectivity into a small unit that can be quickly and discretely installed in a single gang wall box. The EW28650 provides an Ethernet port, telephone jack, and a 2.4GHz 802.11b/g/n wireless access point. The EW28650 requires a single power over ethernet cable drop to unlock its functionality and, through the reduction in cabling, switch ports, and power-sourcing equipment, the EW28650 represents the best value for the delivery of next generation entertainment services.

## 1-1 Package Contents

Please inspect your package. The following items should be included:

### © **EW28650**

- One In Wall Access Point
- One Telephone Cable (3.9 in / 10 cm)
- One UTP Ethernet/Fast Ethernet cable (Cat.5 Twisted-pair) (3.9 in / 10 cm)
- One Wall Faceplate (Top and Bottom )
- One Mounting Bracket
- One Quick Installation Guide
- One CD

If any of the above items are damaged or missing, please contact your dealer immediately.

## **1-2 Features**

- Wireless data rates up to 150Mbps
- Comprehensive security
  - 64/128-bit WEP encryption
  - WPA encryption
  - WPA2 encryption
- Intelligent Management

## **1-3 Precautions**

- Never remove or open the cover. You may suffer serious injury if you touch these parts.
- Never install the system in wet locations.

## **1-4 Aspects**



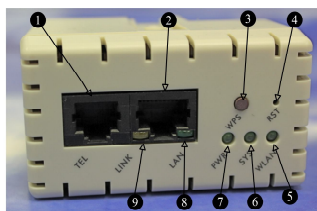
*Figure 1 In Wall Access Point Aspect*

### 1-4-1 Front Panel

The Front panel of the In Wall Access Point shown below.



*Figure 2 In Wall Access Point Front Panel*



1. RJ-11 Telephone Connector
2. RJ-45 Ethernet Connector
3. WPS Button
4. Reset Button
5. WLAN
6. SYSTEM
7. POWER
8. LAN Port
9. LINK Port

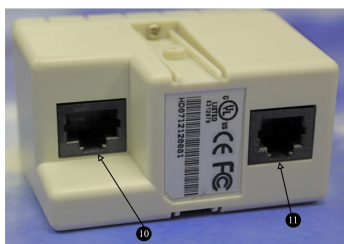
*Figure 3 In-Wall Point Front Panel*

## LEDs Indication

| LED        | State                | Description                                                           |
|------------|----------------------|-----------------------------------------------------------------------|
| PWR        | Off                  | The In Wall Access Point not receiving electrical power.              |
|            | Green                | The In Wall Access Point receiving electrical power.                  |
| SYS        | Off                  | The In Wall Access Point status is defective.                         |
|            | Green                | The In Wall Access Point status is complete.                          |
|            | Green<br>(Blinking)  | During firmware upgrades, this system LED will blink.                 |
| LINK / WAN | Off                  | Port has not established any network connection.                      |
|            | Yellow               | A port has established a valid 10/100Mbps network connection.         |
|            | Yellow<br>(Blinking) | 10/100Mbps traffic is traversing the port.                            |
| LAN        | Off                  | Port has not established any network connection.                      |
|            | Green                | A port has established a valid 10/100Mbps network connection.         |
|            | Green<br>(Blinking)  | 10/100Mbps traffic is traversing the port.                            |
| WLAN       | Off                  | The Wireless is not ready.                                            |
|            | Green                | The In Wall Access Point has established a valid wireless connection. |
|            | Green<br>(Blinking)  | The Wireless connection is active.                                    |

### 1-4-2 Rear Panel

The rear panel of the In Wall Access Point



- 10. RJ-45 Ethernet Connector(802.3af PoE)
- 11. RJ-11 Telephone Connector

*Figure 4 In Wall Access Point Rear Panel*

## **1-5 Technical Specifications**

### **1-5-1 Hardware Specifications**

#### **Network Specification**

IEEE802.3 10 Base TX Ethernet  
IEEE802.3u 100 Base TX Fast Ethernet  
IEEE802.3af Power over Ethernet  
IEEE802.11b Wireless LAN  
IEEE802.11g Wireless LAN  
IEEE802.11n Wireless LAN  
ANSI/IEEE 802.3 NWay auto-negotiation  
Static IP Client  
DHCP Client  
Wi-Fi Compatible

#### **Connectors**

One LAN Port (10BaseT/100BaseTX Auto cross-over)  
One LINK Port (10BaseT/100BaseTX Auto cross-over)  
Two Tel Ports (Telephone Line transparent used)

#### **Encryption**

WEP (Wired Equivalent Privacy) 64/128-bit RC4  
WPA (Wi-Fi Protected Access)  
WPA2 (Wi-Fi Protected Access)  
WPS (Wi-Fi Protected Setup)

#### **LED Indicators**

One POWER LED  
One Link 10/100M Link/Activity LED  
One LAN 10M/100M Link/Activity LED  
One Wireless Link/Activity LED  
One System LED

#### **Environment Conditions**

Operating Temperature: 0 to 50°C  
Storage Temperature: -10 to 60°C  
Operating Humidity: 10~80% non-condensing  
Storage Humidity: 10% to 90% non-condensing



**Certifications**

FCC part 15 Class B, CE, NCC

**Dimension**

Size: 1.3" (W) x 2.8" (L) x 2.2" (H)/ Inches

Weight: About 3.0 Oz/85 g (Net)

**1-5-2 Software Specifications****Networking**

- IEEE802.3 10BaseT Ethernet
- IEEE802.3u 100BaseTX Fast Ethernet
- IEEE802.3af Power over Ethernet
- IEEE802.11b Wireless LAN
- IEEE802.11g Wireless LAN
- IEEE802.11n Wireless LAN
- Static IP WAN Client
- DHCP WAN Client

**Security and Firewall**

- WEP
- WPA
- WPA2
- WPS

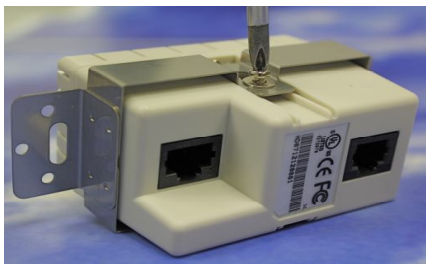
**Management**

- Web-based Management Tool
- Firmware Upgrade via HTTP/TFTP
- Backup/Restore/Factory Default Setting
- Remote Authorized Management
- SNMP v1/v2 (MIB II, Private MIB)
- System Information Table

## 2 Installation

The following are instructions for the hardware assembly and installation of the In Wall Wireless Access Point. Refer to the illustrations and follow the simple steps below to quickly install your EW28650.

**Step 1 :** Slide the Bracket to align with the screw holes on the In Wall Access Point, and fasten the Bracket tightly with the screws.



**Step 2 :** Slide the EW28650 into the Bottom Faceplate and fasten tightly into the Bottom Faceplate until it is flush with the wall.



**Step 3 :** Line-up and push the Top faceplate onto Bottom faceplate until it snaps securely into place.



## 2-1 Installation Requirements

Before installing the In Wall Access Point, make sure your network meets the following requirements.

### System Requirements

The In Wall Access Point requires one of the following types of software:

- Windows 98 Second Edition/NT/2000/XP/Vista/Windows 7
- Red Hat Linux 7.3 or later version
- MAC OS X 10.2.4 or later version
- Any TCP/IP-enabled systems like Mac OS and UNIX (TCP/IP protocol installed)
- Web Browser Software (Microsoft Internet Explorer 6.0 or Mozilla Firefox 3.5)
- One computer with an installed 10Mbps, 100Mbps or 10/100Mbps Ethernet card
- UTP network Cable with a RJ-45 connection (Package contents)

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**Note:** Prepare twisted-pair cables with RJ-45 plugs. Use Cat.5 cable for all connections. Make sure that each cable does not exceed 328 feet (Approximately 100 meters).

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## 2-2 Getting Started

The EW28650 supports web-based configuration. Upon the completion of the hardware installation, it can be configured using a web browser such as Internet Explorer, Firefox, or Safari.

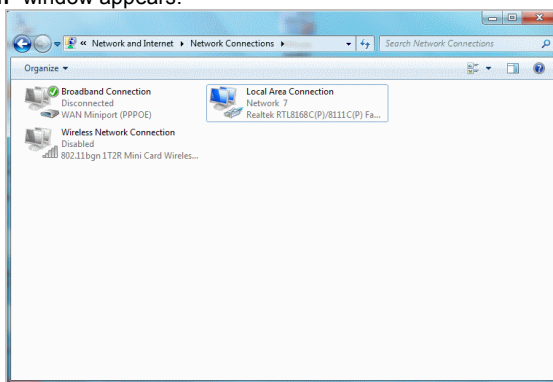
- **Default IP Address:** 192.168.10.1
- **Default Subnet Mask:** 255.255.255.0
- **Default Username and Password:** root/root

---

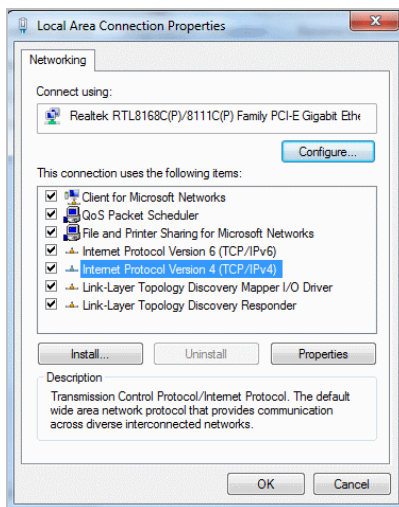
**Note :** Set the IP segment of the administrator's computer to be in the same range as EW28650 for accessing the system. **Do not duplicate** the IP address used here with the IP address of EW28650 or any other device within the network.

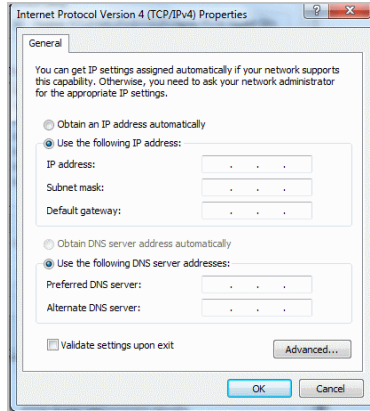
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**Step1 :** Click **Start→Setting→Control Panel**, and then “Control Panel” window appears, Click on “**Network connection**” window appears.



**Step2 :** In “**Local Area Connection properties**” window, select “**Internet Protocol (TCP/IPv4)**” and click on “**properties**” button.



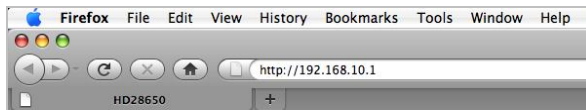


Example:

IP Address:192.168.10.5

Subnet Mask:255.255.255.0

**Step 3 : Launch your web browser**, and then enter the factory default IP address **192.168.10.1** in your browser's location box. Press **Enter**.



**Step 4 :** The EW28650 login screen will appear. In the Username and Password field, type the factory default user name **root** and password **root** and click **Submit**. The EW28650 setup screen will appear.

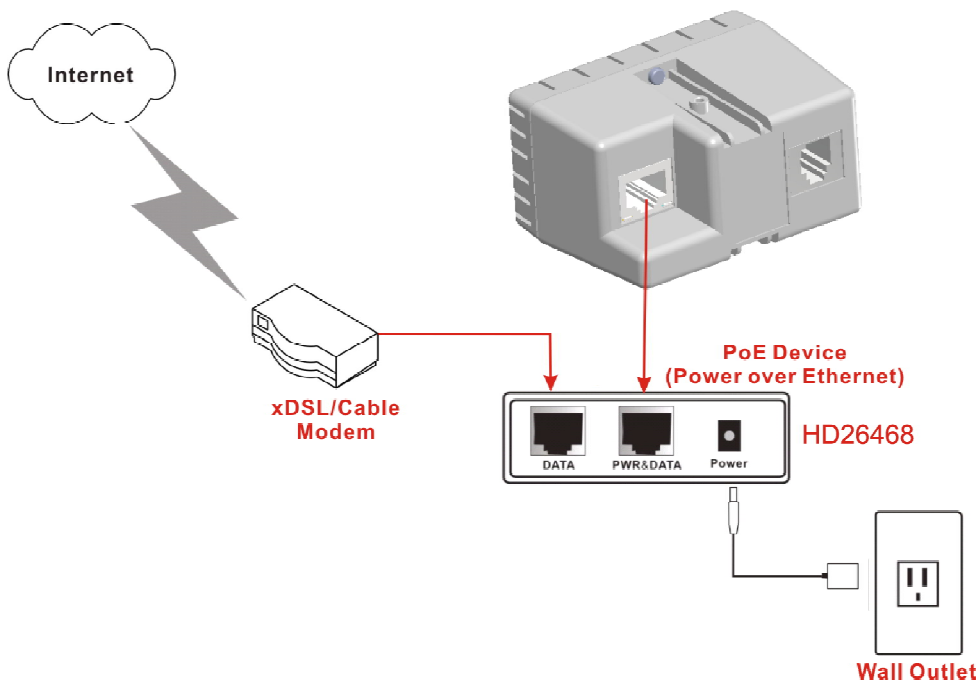



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**Note:** It is important to remember your password. If for any reason you lose or forget your password, press the reset button located inside of a recessed hole on the front of the device. Using a paperclip or similar instrument, depress and hold the reset button for 15 seconds. Performing a Reset will reboot the device and will re-initialize the settings back to factory default. All configurations, including username, password and IP address(es), will be reset, and requires re-entering that information.

---

## PoE (Power over Ethernet) Application



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**Note:** To use the EW28650's PoE feature, follow the instructions for your specific PoE device.

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### 3 Configuring the In Wall Access Point

**Step 1:** Start your browser, and then enter the factory default IP address **192.168.10.1** in your browser's location box. Press **Enter**.

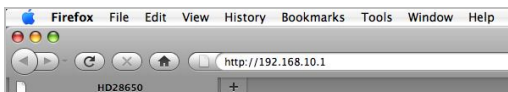


Figure 5 Web Browser Location Field (Factory Default)

**Step 2:** The In Wall Access Point configuration tools menu will appear. In the Username and Password field, type the factory default user name **root** and password **root** and click **Submit**.



Figure 6 Configuration Tools Menu

---

**Note:**

- ☞ This Web Configuration Utility is best viewed with IE 6.0 or Firefox 3.5 or higher versions.
  - ☞ Username and Password can consist of up to 20 alphanumeric characters (case sensitive).
  - ☞ If for some reason your password is lost or you cannot gain access to the In Wall Access Point Configuration Program, please press the reset button to load the device to manufacturer defaults.
  - ☞ If the In Wall Access Point doesn't send any packets within 5 minutes (default), the In Wall Access Point will logout automatically.
  - ☞ Proxy needs to set disable first when administrator accesses admin User Interface
-

The following settings enable you to configure advanced settings related to accessing the Internet ; Display in Wall Access Point basic status; process Firmware upgrade; change password; and backup or restore configuration. Including,

- **Internet Setting**
  - Link
- **Wireless**
  - Basic
  - Advanced
  - Multi-ESSID
- **Administration**
  - Management
  - Firmware
  - Configuration
  - SNMP
  - System Status
  - Ping Command
- **System Tool**
  - Restart
  - Logout



Figure 7 Configuration Tools Menu



### 3-1 Internet Setting

#### 3-1-1 TCP/IP Setting

The IP address can be manually set or automatically assigned by a DHCP server on the LAN. If you are manually setting the **IP address**, **Subnet mask**, and **Gateway IP address** settings, set them appropriately, so that they comply with your LAN environment.

LINK

|                                      |                                                                                                                                                                                               |               |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| TCP/IP Setting                       | <input type="radio"/> DHCP Client ( Mostly for Cable modem users or Local Area Network )<br><input checked="" type="radio"/> Static IP ( Mostly for advanced Local Area Network environment ) |               |
|                                      | IP Address:                                                                                                                                                                                   | 102.168.10.1  |
|                                      | Subnet Mask:                                                                                                                                                                                  | 255.255.255.0 |
|                                      | Gateway IP address:                                                                                                                                                                           |               |
|                                      | Primary DNS Server:                                                                                                                                                                           |               |
|                                      | Secondary DNS Server:                                                                                                                                                                         |               |
|                                      | MTU Setting:                                                                                                                                                                                  | 1500          |
| VLAN ID Setting                      | <input checked="" type="radio"/> Disable <input type="radio"/> Enable ( Enable or Disable Ethernet and Wireless VLAN ID Function )<br>Ethernet VLAN ID: <input type="text"/> (1~4095)         |               |
| <input type="button" value="Apply"/> |                                                                                                                                                                                               |               |

Figure 8 the TCP/IP Setting

#### DHCP Client

The device can work as a DHCP client. This allows the device to obtain the IP address and other TCP/IP settings from your gateway or IP router. If your device comes with this feature, please enable “DHCP Client.”

☐ DHCP Client ( Mostly for Cable modem users or Local Area Network )  
 MTU Setting

Figure 9 DHCP Client Setting Screen

| Item        | Default | Description                                                           |
|-------------|---------|-----------------------------------------------------------------------|
| MTU Setting | 1500    | MTU (Maximum Transfer Unit) specifies maximum transmission unit size. |

### Static IP


**Static IP** ( Mostly for advanced Local Area Network environment )

|                       |                                            |
|-----------------------|--------------------------------------------|
| IP Address:           | <input type="text" value="192.168.10.1"/>  |
| Subnet Mask:          | <input type="text" value="255.255.255.0"/> |
| Gateway IP address:   | <input type="text"/>                       |
| Primary DNS Server:   | <input type="text"/>                       |
| Secondary DNS Server: | <input type="text"/>                       |
| MTU Setting:          | <input type="text" value="1500"/>          |

Figure 10 Static IP Setting Screen

| Item                    | Default       | Description                                                                                                                                                                        |
|-------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IP Address              | 192.168.10.1  | Enter the IP address for the xDSL/Cable connection (provided by your ISP).                                                                                                         |
| Subnet Mask             | 255.255.255.0 | Enter the subnet mask for the IP address.                                                                                                                                          |
| Gateway IP<br>Gateway   | Empty         | Enter the Gateway IP address for the xDSL/Cable connection                                                                                                                         |
| Primary DNS<br>Server   | Empty         | A primary DNS server IP address for the xDSL/Cable connection                                                                                                                      |
| Secondary<br>DNS Server | Empty         | A secondary DNS server IP address for the xDSL/Cable connection. If the primary DNS Server IP were not available, meanwhile, Secondary DNS Server IP would start in the same time. |
| MTU Setting             | 1500          | MTU (Maximum Transfer Unit) specifies maximum transmission unit size.                                                                                                              |

## 3-2 Wireless

### 3-2-1 Wireless Basic Settings

**WIRELESS BASIC SETTING**

|                 |                 |                             |
|-----------------|-----------------|-----------------------------|
| General Setting | 802.11 Mode:    | 802.11n + 802.11g + 802.11b |
|                 | Channel Width:  | Auto 20/40 MHz              |
|                 | Transmit Power: | 10%                         |
|                 | Country:        | FCC                         |
|                 | Channel:        | 11                          |

Apply

Figure 11 Wireless Basic Setting Screen

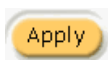
| Item             | Default         | Description                                                                                                                                                   |
|------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Settings |                 |                                                                                                                                                               |
| ESSID            | In Room WiFi    | The ESSID is the unique name that is shared among all points in a wireless network. It is case sensitive and must not exceed 32 characters.                   |
| Channel          | 6               | Select the channel ID for wireless connection.                                                                                                                |
| 802.11 Mode      | 802.11g+802.11b | Select the 802.11 mode of following: :<br>-802.11n+802.11g+802.11b<br>-802.11n+802.11g<br>-802.11g+802.11b<br>-802.11n only<br>-802.11g only<br>-802.11b only |
| Channel Width    | 20 MHz          | Select of channel width of Auto 20/40 MHz or 20MHz                                                                                                            |
| Transmit Power   | 25%             | To Adjust the output power of the system to get the appropriate coverage of your wireless network. Select the 10% to 100% that you need for your environment. |

### 3-2-2 Wireless Advanced Setting

| WIRELESS ADVANCED SETTING                                                                |                                                                                                                            |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Beacon Interval                                                                          | <input type="text" value="100"/> (msec, range:1~1000, default:100)                                                         |
| RTS Threshold                                                                            | <input type="text" value="2342"/> (range:256~2342, default:2342)                                                           |
| Fragmentation Threshold                                                                  | <input type="text" value="2346"/> (range:256~2346, default:2346, even number only)                                         |
| Preamble Type                                                                            | <input type="radio"/> Short Preamble <input type="radio"/> Long Preamble <input checked="" type="radio"/> Dynamic Preamble |
| <div> <input type="button" value="Default"/> <input type="button" value="Apply"/> </div> |                                                                                                                            |

Figure 12 Wireless Advanced Setting Screen

| Item                    | Default          | Description                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Beacon Interval         | 100              | This value valid range is 1 to 1000 indicates the frequency interval of the beacon.                                                                                                                                                                                                                                                                                                                               |
| RTS Threshold           | 2347             | This value valid range is 256-2342. This setting determines the packet size at which the In Wall Access Point issues a request to send (RTS) before sending the packet. A low RTS Threshold setting can be useful in areas where many client devices are associating with the In Wall Access Point, or in areas where the clients are far apart and can detect only the In Wall Access Point, and not each other. |
| Fragmentation Threshold | 2432             | This setting determines the size at which packets are fragmented. Enter a setting ranging from 256 to 2432 bytes. Use a low setting in areas where communication is poor or where there is a great deal of radio interference.                                                                                                                                                                                    |
| Preamble Type           | Dynamic preamble | The preamble type is a section of data at the head of a packet that contains information and client devices need when sending and receiving packets. The setting menu allows you to select a long, short or dynamic preamble type.                                                                                                                                                                                |



Click Apply button to save the new settings.

### 3-2-3 **MULTI-ESSID Setting**

#### **MULTI-ESSID Setting**

Multiple SSIDs (Service Set Identifier) logically divide the access point into several virtual access points, and allow users to access different networks through the single Access Point. The ability to create and configure Multiple SSIDs can be performed within the “**MULTI-ESSID**” tab within the **Wireless** menu setting. You can assign different policies and functions for each SSID, increasing the flexibility and efficiency of the network infrastructure. They can be named differently, with separate security options and settings. For example, Multiple SSIDs are commonly configured for creating public and private networks within the same access point.

#### **MULTI-ESSID SETTINGS**

| Item | ESSID          | Status   | VLAN ID | Security | Edit                                                                                                   |
|------|----------------|----------|---------|----------|--------------------------------------------------------------------------------------------------------|
| 1    | 802.11N INWALL | Active   | Disable | WPA2     | <a href="#">Edit</a>  |
| 2    | In Room WiFi2  | Inactive | Disable | Disable  | <a href="#">Edit</a>  |

#### **VLAN Setting**

**Virtual Local Area Network (VLAN).** This enables the separation of wireless applications based on security and performance requirements. If your network uses VLANs, you can assign an SSID to a VLAN ID (range from 1 - 4095), and the access point will group client devices (and network traffic) using that SSID into that specific VLAN ID. For example, you could enable encryption and authentication on one SSID to protect private applications, and no security on another SSID to maximize open connectivity for public usage.

**Wireless Security Settings** are configured within the edited fields of the **MULTI-ESSID** tab.

See Figure 13

WIRELESS SECURITY SETTING

WEP is no longer considered a secure method of security. We highly recommend WPA or WPA2 if you require a secure wireless connection.

General Setting

☒ Active
 ☐ Inactive
 

ESSID1

VLAN ID  (1~4096)

Security Setting

☐ Disable
 ☒ WPA
 ☒ WPA2
 ☐ WPA/WPA2

Group Key Rekeying: Per  Seconds

☒ Use WPA with Pre-shared Key
 

Pre-shared Key:  (8~63 characters)

☐ Use WPA with RADIUS Server
 

Server IP:

Authentication Port:

Shared Secret Key:

☐ WEP
 

Encryption: ☐ 64 bit ☐ 128 bit

Mode: ☒ HEX ☐ ASCII

WEP Key:
 

☐ 1. 
☐ 2. 
☐ 3. 
☐ 4.

Authentication Type ☐ Open System ☐ Shared Key ☒ Both

Apply

Figure 13 Wireless Security Setting Screen

| Item                | Default                           | Description                                                                                                                                               |
|---------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Security            | Disable                           | Select disable to allow wireless stations to communicate with the device without any data encryption. Select enable to enable WPA or WEP data encryption. |
| WPA2 Encryption     | Wi-Fi Protected Access Encryption |                                                                                                                                                           |
| Pre-shared Key      | Empty                             | Enter a pre-shared key from 8 to 63 case sensitive ASCII characters.                                                                                      |
| Group Key Re-Keying | 86400 Seconds                     | Enter a number in the field to set the force re-keying interval.                                                                                          |
| WPA Encryption      | Wi-Fi Protected Access Encryption |                                                                                                                                                           |
| Pre-shared Key      | Empty                             | Enter a pre-shared key from 8 to 63 case sensitive ASCII characters.                                                                                      |
| Group Key Re-Keying | 86400 Seconds                     | Enter a number in the field to set the force re-keying interval.                                                                                          |

| Item    | Default | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WEP Key | 1       | <p>This selects which of the Keys the In Wall Access Point uses when it transmits. You can change the selected encryption key periodically to increase the security of your network.</p> <p>Note: You have to configure all WEP keys (1~4), and select one of the four WEP key.</p> <p>Enter 5 characters (case sensitive) for ASCII 64-bit WEP Key.</p> <p>Enter 10 characters (case sensitive) for Hex 64-bit WEP Key.</p> <p>Enter 13 characters (case sensitive) for ASCII 128-bit WEP Key.</p> <p>Enter 26 characters (case sensitive) for Hex 128-bit WEP Key.</p> |



Click **Apply** button to save the new settings.

## RESTART

Do you want to restart the system ?



Figure 14 Restart Dialog Box

Click **Apply** button, the restart dialog box appears. Click on **Apply** to restart the system.

### 3-3 Advanced

#### 3-3-1 Management

Define the In Wall Access Point Management configuration

| MANAGEMENT                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------|-------------|---------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------|
| Administrator Setting                         | <p>Please be sure to change your password:</p> <p>Username: <input type="text" value="admin"/></p> <p>Password: <input type="password" value="•••••"/></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| Date/Time                                     | <p>Date: <input type="text" value="2004"/> / <input type="text" value="7"/> / <input type="text" value="2"/> (Year/Month/Day)</p> <p>Time: <input type="text" value="16"/> : <input type="text" value="05"/> : <input type="text" value="14"/> (Hour : Minute : Second)</p> <p> <input type="button" value="Get from my Computer"/> <input type="button" value="Get from NTP server"/> </p> <p><input type="checkbox"/> NTP Setting</p> <table border="1"> <tr> <td>Server IP/Domain Name</td> <td><input type="text"/></td> </tr> <tr> <td>Time Zone</td> <td><input type="text" value="GMT-12:00"/></td> </tr> <tr> <td>Update Time</td> <td><input type="text" value="0"/> hours</td> </tr> <tr> <td> <input type="checkbox"/> Daylight Saving Time </td> <td> <table border="1"> <tr> <td>Start Date:</td> <td><input type="text" value="4"/> Month / <input type="text" value="1"/> Day</td> </tr> <tr> <td>End Date:</td> <td><input type="text" value="10"/> Month / <input type="text" value="31"/> Day</td> </tr> </table> </td> </tr> </table> | Server IP/Domain Name | <input type="text"/>                                                      | Time Zone | <input type="text" value="GMT-12:00"/>                                      | Update Time | <input type="text" value="0"/> hours        | <input type="checkbox"/> Daylight Saving Time | <table border="1"> <tr> <td>Start Date:</td> <td><input type="text" value="4"/> Month / <input type="text" value="1"/> Day</td> </tr> <tr> <td>End Date:</td> <td><input type="text" value="10"/> Month / <input type="text" value="31"/> Day</td> </tr> </table> | Start Date: | <input type="text" value="4"/> Month / <input type="text" value="1"/> Day | End Date: | <input type="text" value="10"/> Month / <input type="text" value="31"/> Day |
| Server IP/Domain Name                         | <input type="text"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| Time Zone                                     | <input type="text" value="GMT-12:00"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| Update Time                                   | <input type="text" value="0"/> hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| <input type="checkbox"/> Daylight Saving Time | <table border="1"> <tr> <td>Start Date:</td> <td><input type="text" value="4"/> Month / <input type="text" value="1"/> Day</td> </tr> <tr> <td>End Date:</td> <td><input type="text" value="10"/> Month / <input type="text" value="31"/> Day</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Start Date:           | <input type="text" value="4"/> Month / <input type="text" value="1"/> Day | End Date: | <input type="text" value="10"/> Month / <input type="text" value="31"/> Day |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| Start Date:                                   | <input type="text" value="4"/> Month / <input type="text" value="1"/> Day                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| End Date:                                     | <input type="text" value="10"/> Month / <input type="text" value="31"/> Day                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| LED Setting                                   | <input type="radio"/> Enable <input type="radio"/> Disable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| Secure administrator IP addresses             | <p><input checked="" type="radio"/> Any</p> <p><input type="radio"/> Specify</p> <table border="1"> <tr> <td>1</td> <td><input type="text"/> ~ <input type="text"/></td> </tr> <tr> <td>2</td> <td><input type="text"/> ~ <input type="text"/></td> </tr> <tr> <td>3</td> <td><input type="text"/> ~ <input type="text"/></td> </tr> <tr> <td>4</td> <td><input type="text"/> ~ <input type="text"/></td> </tr> <tr> <td>5</td> <td><input type="text"/> ~ <input type="text"/></td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                     | <input type="text"/> ~ <input type="text"/>                               | 2         | <input type="text"/> ~ <input type="text"/>                                 | 3           | <input type="text"/> ~ <input type="text"/> | 4                                             | <input type="text"/> ~ <input type="text"/>                                                                                                                                                                                                                       | 5           | <input type="text"/> ~ <input type="text"/>                               |           |                                                                             |
| 1                                             | <input type="text"/> ~ <input type="text"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| 2                                             | <input type="text"/> ~ <input type="text"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| 3                                             | <input type="text"/> ~ <input type="text"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| 4                                             | <input type="text"/> ~ <input type="text"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| 5                                             | <input type="text"/> ~ <input type="text"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| Allow remote user to ping the device          | <input checked="" type="radio"/> Enable <input type="radio"/> Disable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |
| <input type="button" value="Apply"/>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |                                                                           |           |                                                                             |             |                                             |                                               |                                                                                                                                                                                                                                                                   |             |                                                                           |           |                                                                             |

Figure 15 Management Setting Screen



| Item                                                |           | Default     | Description                                                                                                                                                                                                                                                    |
|-----------------------------------------------------|-----------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Administrator Setting                               | Username  | root        | The username can consist of up to 20 alphanumeric characters and is sensitive.                                                                                                                                                                                 |
|                                                     | Password  | root        | The password can consist of up to 20 alphanumeric characters and is sensitive.                                                                                                                                                                                 |
| <b>Date/Time</b>                                    |           |             |                                                                                                                                                                                                                                                                |
| Date (Year/Month/Day)                               |           | System Date | The system date of the In Wall Access Point. The valid setting of year is from 2010 to 2035.                                                                                                                                                                   |
| Time (Hour:Minute:Second)                           |           | System Time | The system time of the In Wall Access Point.                                                                                                                                                                                                                   |
| <input type="button" value="Get from my Computer"/> |           | -           | Click "Get from my Computer" button to correct the system date and time.                                                                                                                                                                                       |
| <input type="button" value="Get from NTP server"/>  |           | -           | Click "Get from NTP server" button to correct the system date and time.                                                                                                                                                                                        |
| NTP Setting                                         |           | Disable     | Enables or disables NTP (Network Time Protocol) Time Server. Network Time Protocol can be utilized to synchronize the time on devices across a network. A NTP Time Server is utilized to obtain the correct time from a time source and adjust the local time. |
| Server IP/Domain Name                               |           | Empty       | Enter the IP address/domain name of NTP server. The maximum allowed characters length is 100.                                                                                                                                                                  |
| Time Zone                                           |           | GMT-12:00   | Select the appropriate time zone for your location.                                                                                                                                                                                                            |
| Update Time                                         |           | 0 hours     | Enter the number of hours for update time.                                                                                                                                                                                                                     |
| Daylight Saving Time                                | Disable   |             | Enables or disables Daylight Saving Time (DST).                                                                                                                                                                                                                |
|                                                     | Month/Day |             | Set the Daylight Saving Time (DST) on the In Wall Access Point. Adjust the begin time and end time.                                                                                                                                                            |
| LED Setting                                         |           | Disable     | Enable or Disable Device LED lighting.                                                                                                                                                                                                                         |
| Secure administrator IP Addresses                   |           | Any         | Options: Any and Specify. Administrator can specify 5 IP addresses or a range to allow remote control access from network.                                                                                                                                     |
| Allow remote user to ping the device                |           | Enable      | This function allows remote user to ping the In Wall Access Point through the Internet. Ping is normally used to test the physical connection between two devices, to ensure that everything is working correctly.                                             |

### 3-3-2 Firmware

The Firmware Upgrade menu loads updated firmware to be permanent in flash ROM. The download file should be a binary file from factory; otherwise the agent will not accept it. After downloading the new firmware, the agent will automatically restart it.

#### ● Manual Firmware Upgrade

**FIRMWARE**

Manual Firmware Upgrade

Scheduled Firmware Upgrade

To upgrade the firmware, click **Browse** to locate the firmware file or use remote TFTP server and click **Apply**.

Local PC File Path

瀏覽...

Apply

Remote TFTP Server IP Address

Apply

File Name

Figure 16 Manual Firmware Upgrade Setting Screen

| Item                                                                  | Default | Description                                                       |
|-----------------------------------------------------------------------|---------|-------------------------------------------------------------------|
| <b>This allow administrator to upgrade the firmware via HTTP.</b>     |         |                                                                   |
| Local PC File Path                                                    | Empty   | Enter the file name and location in the Local PC File Path field. |
| <b>This allows administrator use TFTP server to upgrade firmware.</b> |         |                                                                   |
| Remote TFTP Server IP Address                                         | Empty   | Enter the IP address of TFTP Server.                              |
| File Name                                                             | Empty   | Enter the file name in the File Name field.                       |

#### Note:

1. Before downloading the new firmware, users must save the configuration file to restore the configuration parameters of the device.
2. Do not turn the power off during the upgrade process. This will damage the unit.

## ● Scheduled Firmware Upgrade

Scheduled Firmware Upgrade is a program that enables an automatic upgrade to the latest firmware version through the TFTP server.

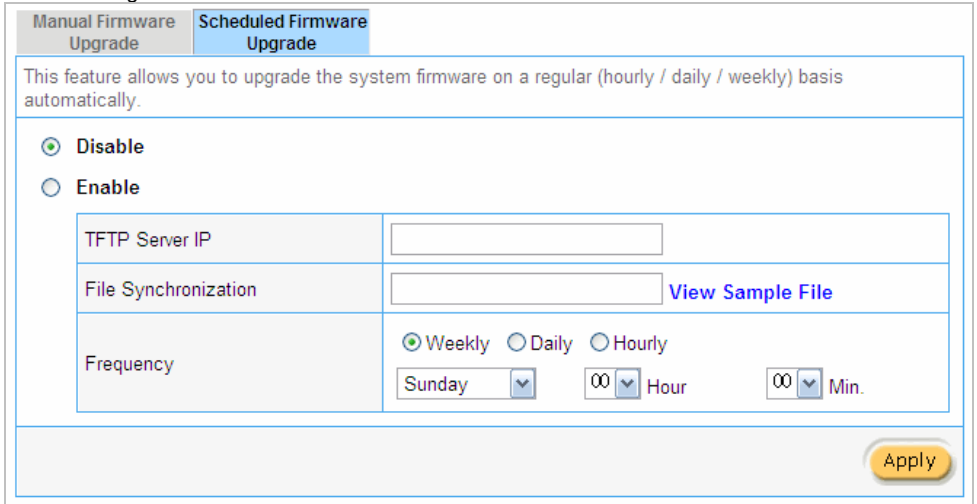


Figure 17 Scheduled Firmware Upgrade Setting Screen

| Item                             | Default                                                      | Description                                                         |
|----------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------|
| Disable/Enable                   | Disables or enables the scheduled firmware upgrade function. |                                                                     |
| TFTP Server IP                   | Empty                                                        | Enter the IP address of TFTP Server.                                |
| File Synchronization             | Empty                                                        | Enter the file name and location in the File Synchronization field. |
| <a href="#">View Sample File</a> | Click the button to display synchronization file example.    |                                                                     |
| Frequency                        | Weekly                                                       | Set the firmware upgrade time. The default value is "Weekly".       |

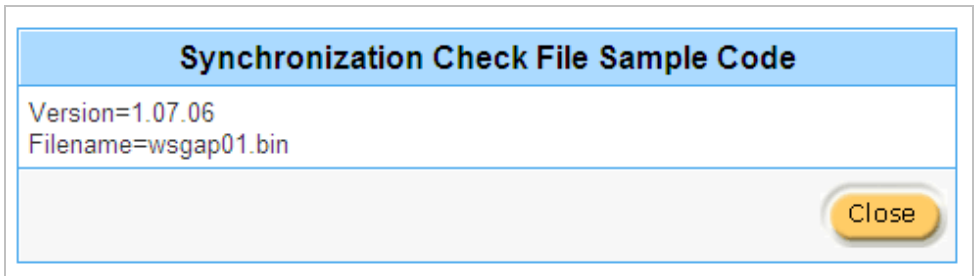


Figure 18 Synchronization File Sample Code

**Note:** Do not turn the power off during the upgrade process. This will damage the unit.

### 3-3-3 Configuration

This feature can backup the system configuration from this device to your PC or restore your stored system configuration to this device.

## CONFIGURATION

This feature can backup the system configuration from this device to your PC or restore your stored system configuration to this device.

**Backup**

Click Backup to backup the system configuration from this device to your computer or to the remote TFTP server.

Remote TFTP Server IP Address:

File Name:

Apply

**Restore**

To restore your stored system configuration to this device.

Local PC File Path:  瀏覽...

Remote TFTP Server IP Address:

File Name:

Apply

**Reset the system back to factory defaults**

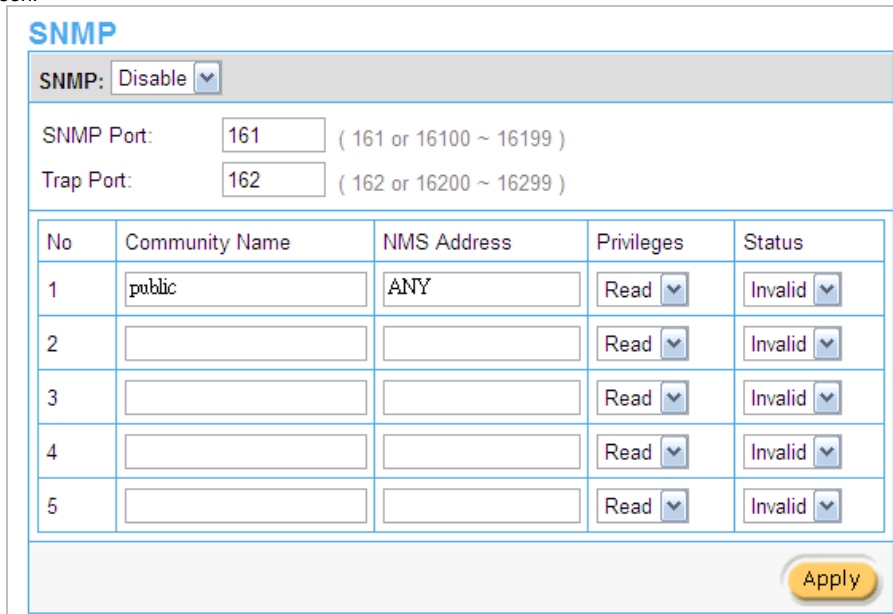
Apply

Figure 19 Configuration Setting Screen

| Item                                      | Default | Description                                                                               |
|-------------------------------------------|---------|-------------------------------------------------------------------------------------------|
| Backup                                    |         | Click it to save the system configuration to your computer. (export.cfg)                  |
| Remote TFTP Server IP Address             | Empty   | Enter the IP address of TFTP Server.                                                      |
| File Name                                 | Empty   | Enter the file name in the File Name field.                                               |
| Restore                                   |         | Click it to restore your system configuration.                                            |
| Local PC File Path                        | Empty   | Enter the file pathname of the system configuration file in the Local PC File Path field. |
| Remote TFTP Server IP Address             | Empty   | Enter the IP address of TFTP Server.                                                      |
| File Name                                 | Empty   | Enter the file name in the File Name field.                                               |
| Reset the system back to factory defaults |         | Erase all setting and back to factory setting.                                            |

### 3-3-4 SNMP

The SNMP Agent Configuration screen enables you to access to your device via Simple Network Management Protocol. If you are not familiar with SNMP, please consult your Network Administrator or consult SNMP reference material. You must first enable SNMP on the SNMP Agent Configuration screen.



The screenshot shows the 'SNMP' configuration screen. At the top, there is a header 'SNMP' in blue. Below it, a grey bar contains 'SNMP: Disable' with a dropdown arrow. The main area has two input fields: 'SNMP Port: 161' and 'Trap Port: 162', both with ranges in parentheses: '( 161 or 16100 ~ 16199 )' and '( 162 or 16200 ~ 16299 )'. Below these is a table with 5 rows and 5 columns: 'No', 'Community Name', 'NMS Address', 'Privileges', and 'Status'. The first row is pre-filled with '1', 'public', 'ANY', 'Read', and 'Invalid'. The other four rows are empty. At the bottom right, there is an 'Apply' button.

| No | Community Name | NMS Address | Privileges | Status  |
|----|----------------|-------------|------------|---------|
| 1  | public         | ANY         | Read       | Invalid |
| 2  |                |             | Read       | Invalid |
| 3  |                |             | Read       | Invalid |
| 4  |                |             | Read       | Invalid |
| 5  |                |             | Read       | Invalid |

Figure 20 SNMP Setting Screen

| Item           | Default        | Description                                                                                                                                                                                                                                                    |
|----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNMP           | Disable        | Disables or enables the SNMP management.                                                                                                                                                                                                                       |
| SNMP Port      | 161            | If the SNMP enables, also allowed to specific the SNMP port number via NAT. The allowed SNMP port numbers are 161 (default), 16100-16199 and Trap port numbers are 162 (default), 16200-16299. This Port setting is useful for remote control via NAT network. |
| Trap Port      | 162            |                                                                                                                                                                                                                                                                |
| Configuration  |                |                                                                                                                                                                                                                                                                |
| Community Name | public/private | Every unit with SNMP enable must be configured to recognize one or more community names up to 20 characters. The default setting for the community of entry is “public”                                                                                        |
| NMS Address    | ANY            | The address of the NMS. The default settings for the NMS Networking are “ANY”.                                                                                                                                                                                 |
| Privileges     | Read           | Choose “Read”, “Write”, “Trap Recipients” and “All” for different privileges. The defaults are all “read”.                                                                                                                                                     |
| Status         | Valid/Invalid  | Chosen “Valid” or “Invalid”. The default setting of entry is all invalid.                                                                                                                                                                                      |

### 3-3-5 System

### 3-3-6 Ping Command

The Ping function can determine if the In Wall Access Point's network is connected or not.

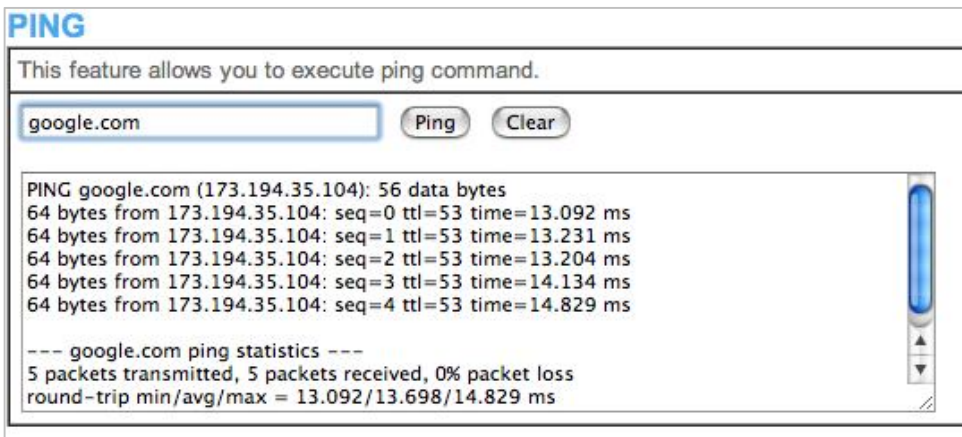


Figure 21 Ping Command Screen

| Item      | Description                           |
|-----------|---------------------------------------|
| IP or URL | Enter the IP address or the URL link. |

## 3-4 Advanced

### 3-4-1 Restart

If your In Wall Access Point is not operating correctly, you can choose this option to display the restart screen. Clicking the apply button will restart the In Wall Access Point, with all of your settings remaining intact.

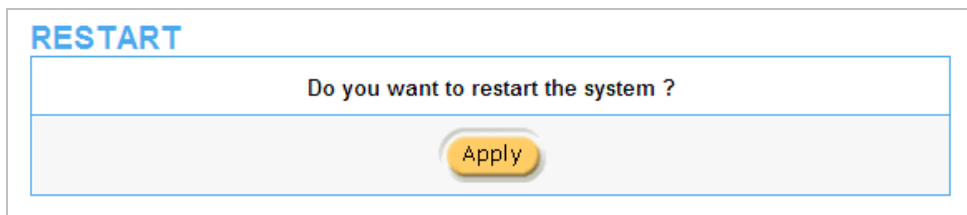


Figure 22 Restart Screen

### 3-4-2 Logout

If you would like to leave the configuration page, please click Apply to exit.

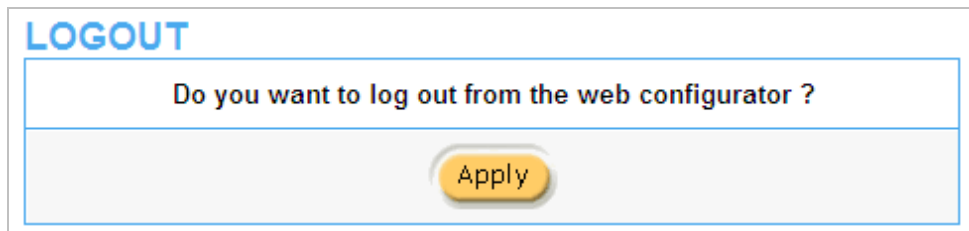


Figure 23 Logout Screen

## Appendix A Signal Connection Arrangements

### RJ-45 Ethernet Port

The In Wall Access Point RJ-45 Ethernet port can connect to any networking devices that use a standard LAN interface, such as a Hub/Switch or Router. Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable to connect the networking device to the RJ-45 Ethernet port.

Depending on the type of connection, 10Mbps or 100Mbps, use the following Ethernet cable, as prescribed.

**10Mbps:** Use EIA/TIA-568-100-Category 3, 4 or 5 cables.

**100Mbps:** Use EIA/TIA-568-100-Category 5 cable.

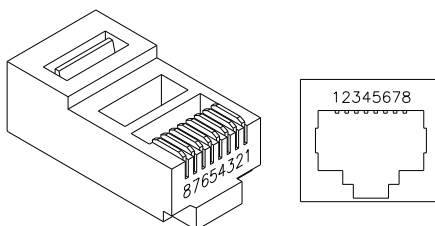


Figure 24 RJ-45 Connector and Cable Pins

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**Note:** To prevent loss of signal, make sure that the length of any twisted-pair connection does not exceed 100 meters (approximately 328 feet).

---

## Appendix B Regulations/EMI Compliance

### Federal Communication Commission Interference Statement

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

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

### IMPORTANT NOTE:

#### FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.



**LIMITED WARRANTY****EW28650 In Wall Wireless Access Point****What the warranty covers:**

We warrant this product to be free from defects in material and workmanship during the warranty period. If a product proves to be defective in material or workmanship during the warranty period, we will at its sole option repair or replace the product with a like product with a like product. Replacement product or parts may include remanufactured or refurbished parts or components.

**How long the warranty is effective:**

The EW28650 is warranted for one (1) year for all parts and labor from the date of receipt.

**Who the warranty protects:**

This warranty is valid only for the original purchaser.

**What the warranty does not cover:**

1. Any product, on which the serial number has been defaced, modified or removed.
2. Damage, deterioration or malfunction resulting from:
  - a. Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - b. Repair or attempted repair by anyone not authorized by us.
  - c. Any damage of the product due to shipment.
  - d. Removal or installation of the product.
  - e. Causes external to the product, such as electric power fluctuations or failure.
  - f. Use of supplies or parts not meeting our specifications.
  - g. Normal wear and tear.
  - h. Any other cause that does not relate to a product defect.
3. Removal, installation, and set-up service charges.

**How to get service:**

1. For information about receiving service under warranty, contact **Technical Support**.
2. To obtain warranted service, you will be required to provide (a) the original dated sales slip, (b) your name, (c) your address (d) a description of the problem and (e) the serial number of the product.
3. Take or ship the product prepaid in the original container to your dealer, or point of purchase.
4. For additional information, contact your dealer or:

**HD Communications Technical Support Team @ (888) 588-3800 / (631) 588-3877**

**techs@hdcom.com**

**Limitation of implied warranties:**

THERE ARE NOWARRANTIED, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**Exclusion of damages:**

Our LIABILITY IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. We SHALL NOT BE LIABLE FOR:

1. DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE WITH BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.
2. ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.
3. ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.