BROWAN

USER GUIDE

Model : BW1257

Tri-Band Wi-Fi AC3000 Indoor Access Point

V1.1

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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.

IMPORTANT NOTE:
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 23cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/CANADA

Operation of this device is restricted to indoor use only.

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About This Guide

Purpose

This document provides information and procedures on hardware installation, setup, configuration, and management of the high performance Indoor Access Point BW1257.

Prerequisite Skills and Knowledge

To use this document effectively, you should have a working knowledge of Local Area Networking (LAN) concepts and wireless Internet access infrastructures. In addition, you should be familiar with the following:

- Hardware installers should have a working knowledge of basic electronics and mechanical assembly, and should understand related local building codes.
- Network administrators should have a solid understanding of software installation procedures for network operating systems under Microsoft Windows 95, 98, Millennium, 2000, NT, and Windows XP and general networking operations and troubleshooting knowledge.
- .

Conventions Used in this Document

The following typographic conventions and symbols are used throughout this document:

!!!	Very important information. Failure to observe this may result in damage.
!	Important information that should be observed.
i	Additional information that may be helpful but not required.
bold	Menu commands, buttons and input fields are displayed in bold
`code`	File names, directory names, form names, and system-generated output such as error messages are displayed in constant-width type
`<value>`	Placeholder for certain values, e.g. user inputs
[value]	Bracket for field format, limitations, and/or restrictions

Chapter 1 – Introduction

Thank you for choosing the Indoor Access Point BW1257.

The BW1257 supports Tri-Band technology, establishing simultaneous connections with 2.4GHz, 5GHz Band 1, and 5GHz Band 4 wireless network frequencies, and is fully compliant with the 802.11a/b/g/n and 802.11 ac Wi-Fi standard. It is a high performance WiFi Access Point, providing high-speed data rate (Tri-Band having a maximum speed of 3000Mbps in total), high reliability, security, and feature rich software functionalities, suitable for places such as small and medium business enterprises, popular hotspots, and public spaces.

With the use of three independent wireless modules, wireless applications may expand its flexibility, interference to devices are significantly reduced, and greater signal coverage can be achieved.

Features Highlight

- Supports IEEE802.11a/b/g/n and 11ac Wi-Fi standard
- Tri-Band 2.4GHz, 5GHz Band 1, and 5GHz Band 4 working simultaneously
- Supports up to 16 BSSID – “Virtual AP” for each WiFi radio
- Layer2 Isolation for Peer to Peer client access protection
- MAC Access Control List (ACL)
- VLAN tag per SSID
- Anti-Interference with Dynamic Channel Allocation (DCA)
- Hidden SSID to block unauthorized access
- User limitation for radio connection
- Support wireless encryption : WEP, WPA2-PSK, WPA/WPA2-PSK, WPA2-Enterprise, WPA/WPA2-Enterprise
- Compliant with 802.3at PoE(Power-over-Ethernet)
- NTP for clock Synchronization
- GRE Client for VPN
- Adjacent access point scanning
- Anti-DDOS attack
- Supports TR-069 protocol.(CPE WAN Management Protocol)
- AP Reboot/Reset to factory default
- Firmware upgrade via management GUI

Chapter 2 – Hardware Introduction

This chapter provides the hardware introduction and package contents of Access Point BW1257.

- Product Package
- Hardware Introduction (Outlook, LEDs, Connectors)

Package

The product package contains:

- Access Point (BW1257, 1 unit)
- Antennas (Dual-band Dipole Antennas with RP-SMA connector, 6 units)
- Ethernet patch cable (Cat5 UTP, 1 unit)
- External power supply (Output: 12VDC/3A, 1 unit)

Hardware and LED Indication

General Overview

Figure 1 – General Overview

Front panel

There are six indicator lights (**LEDs**) on the front panel that show the status of various networking and connection operations.

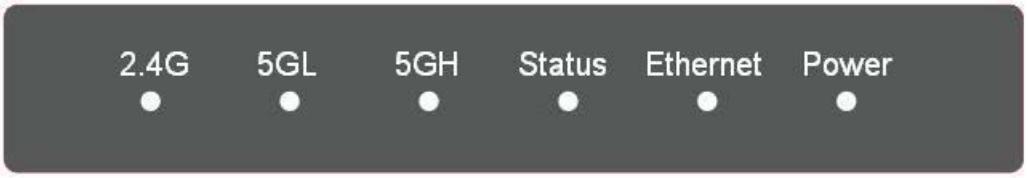

Figure 2 – LED Indicator Lights

LED Indicator Lights

LED	Indication
Power	Solid Green: Unit powered-on and operating Off : Unit powered-off
Ethernet	Solid Green : Network speed of 1000Mbps Solid Red-Amber : Network speed of 10/100Mbps Flashing : Transmitting data Off : Powered-off or Ethernet connection is unavailable
Status	Solid Green : Unit powered-on and operating Flashing : Upgrading AP firmware
5GH	Solid Green : Radio enabled and operating Flashing : Transmitting data Off : Powered-off or Radio disabled
5GL	Solid Green : Radio enabled and operating Flashing : Transmitting data Off : Powered-off or Radio disabled
2.4G	Solid Green : Radio enabled and operating Flashing : Transmitting data Off : Powered-off or Radio disabled

Table 1 – LED Indication

Bottom Cover

The Bottom Cover of the BW1257 consists of the following items:

1. **Back Label** with MAC address, S/N, model name, certification…etc.
2. Rubber Feet
3. Wall mount holes

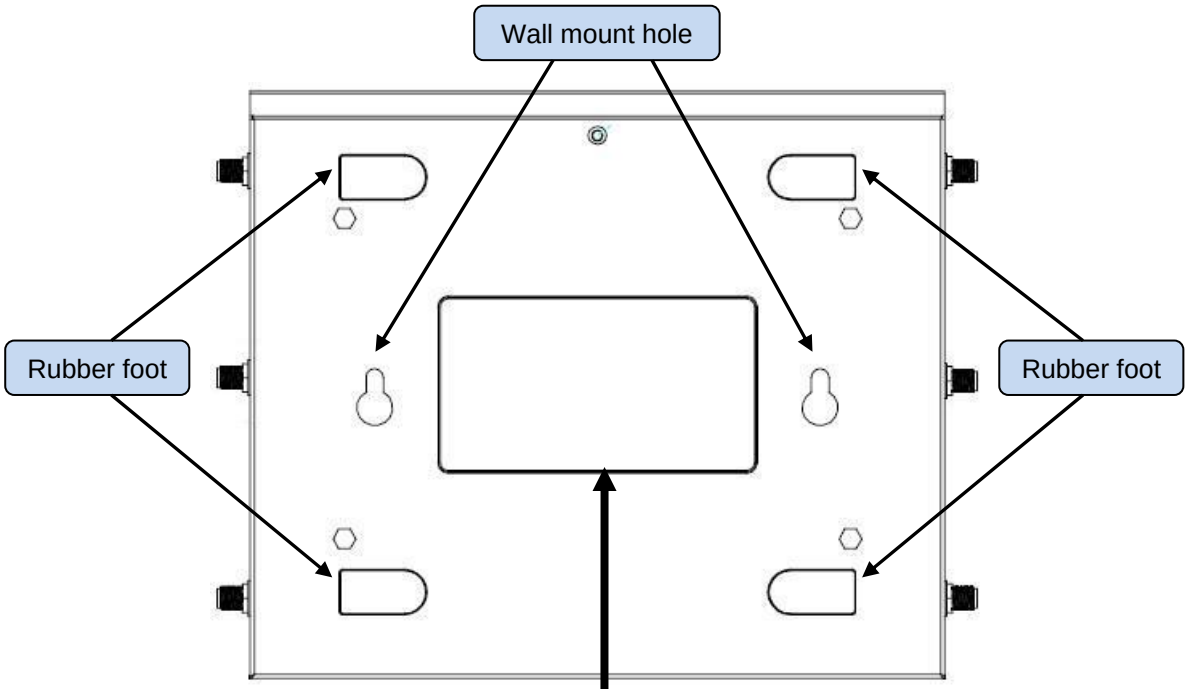

Figure 3 – Bottom Cover

Back Label

Rear panel

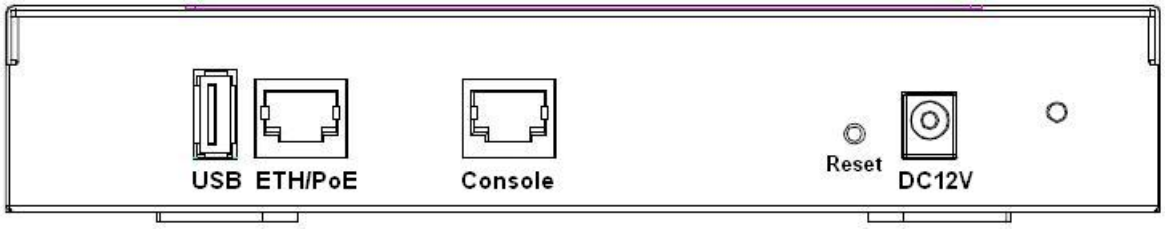

Figure 4 – Rear Panel I/O Port

A list of the ports and buttons are explained in the following table:

Item	Connector	Description
1	DC12V	For power supply 12V DC input
2	Reset	Button to Reboot or Reset device Press reset button to reboot device, or keep pressing for more than 7 seconds to restore factory default configuration.
3	Console	For console connection(RJ-45 interface)
4	ETH/PoE	RJ-45 Ethernet port and PoE power supply.
5	USB	USB 2.0 interface(reserved)

Table 2 – BW1257 Ports

Right side:

Three separate RP-SMA antenna ports for 5GHz High Band. (5GH)

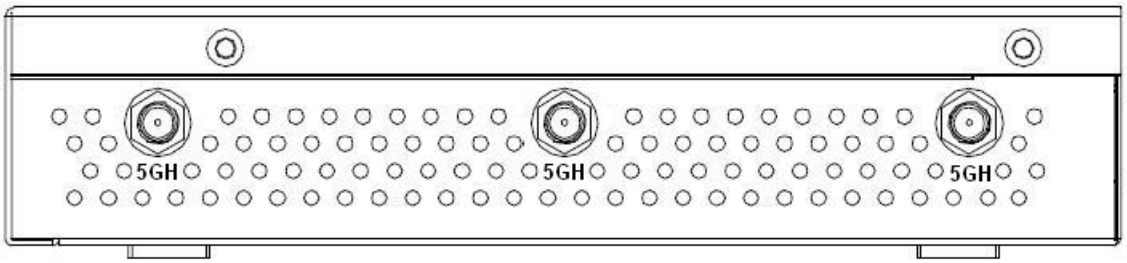

Figure 5 – SMA Antennas Ports (5GH)

i	The antennas included in the package are 2.4G/5G Dual Band Omni-Directional Antennas.

Left side:

Three separate RP-SMA antenna ports -------- Two for 2.4GHz and 5GHz Low Band (2G/5GL). Another one is for 5G High Band and Bluetooth (5GH/BT).

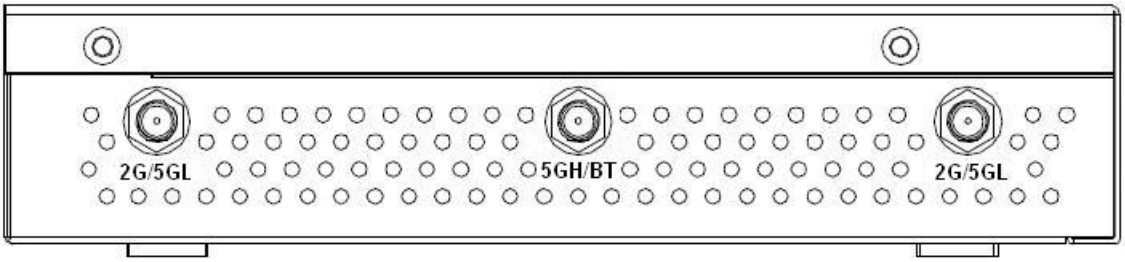

Figure 6 – SMA Antenna Ports(2G/5GL, 5GH/BT)

i	The antennas included in the package are 2.4G/5G Dual Band Omni-Directional Antennas.

Chapter 3 – Reference Manual

This chapter describes how BW1257 is configured via Web Interface.

How to Log In

1. Use the enclosed Ethernet patch cable to connect the ETH port of the Access Point to your laptop/PC.
2. Configure your laptop/PC network as follows:

   IP address: 192.168.2.10

   Netmask: 255.255.255.0

   Gateway: 192.168.2.2
3. Open browser (eg. IE, Chrome)
4. Enter Access Point IP address in the browser (http://192.168.2.2) to log into the system.
5. The default administrator user name and password are as follows:

   Administrator: admin

   Password: admin01

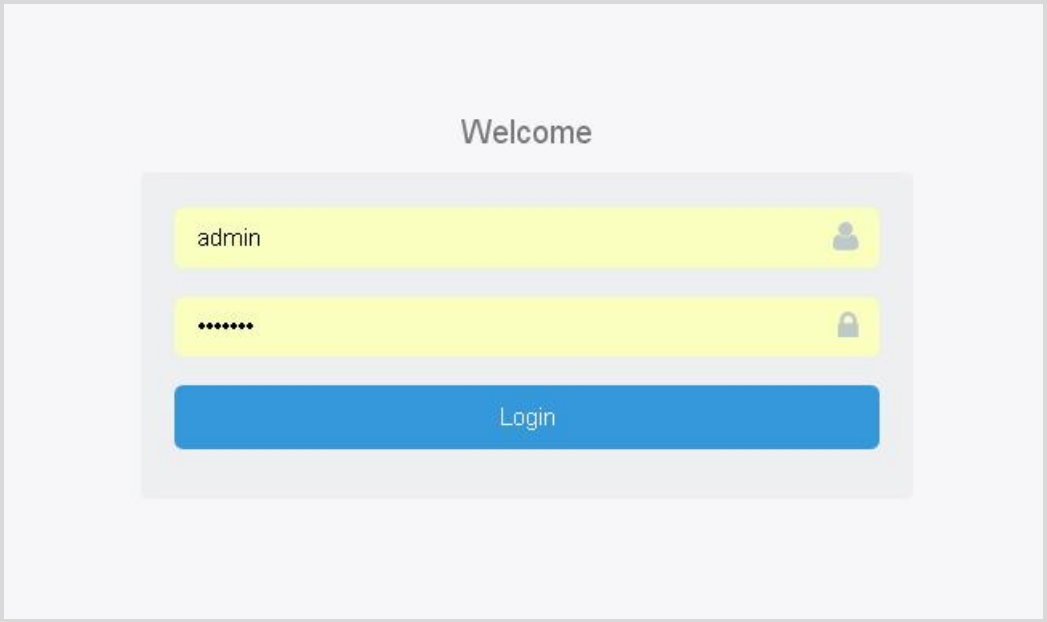

Figure 7 – Log Into AP Web Interface

ℹ	BW1257 can accept power from either DC12V or PoE (Power-over-Ethernet) according to 802.3at standard. The maximum power consumption is 25 watts.
ℹ	The default network is DHCP client. BW1257 has another fixed IP address of 192.168.2.2 for management purposes.

Quick Setup

A Quick Setup Wizard for IP configuration will pop-up after logging into the system. You can follow the step-by-step configuration guide as displayed or simply skip the process by clicking “Cancel”.

ℹ	The Quick Setup Wizard will display the current network status after logging into the system.

Figure 8 – Quick Setup

Custom DNS: The system allows you to configure Custom DNS Servers under DHCP client mode. You can manually input two Custom DNS Servers by placing a check next to the “**Custom DNS**” item, two blank fields will be displayed underneath for manual input. You may also choose to apply default DNS Servers automatically by selecting the “**Use recommended DNS**” option on the lower right-hand area of the window.

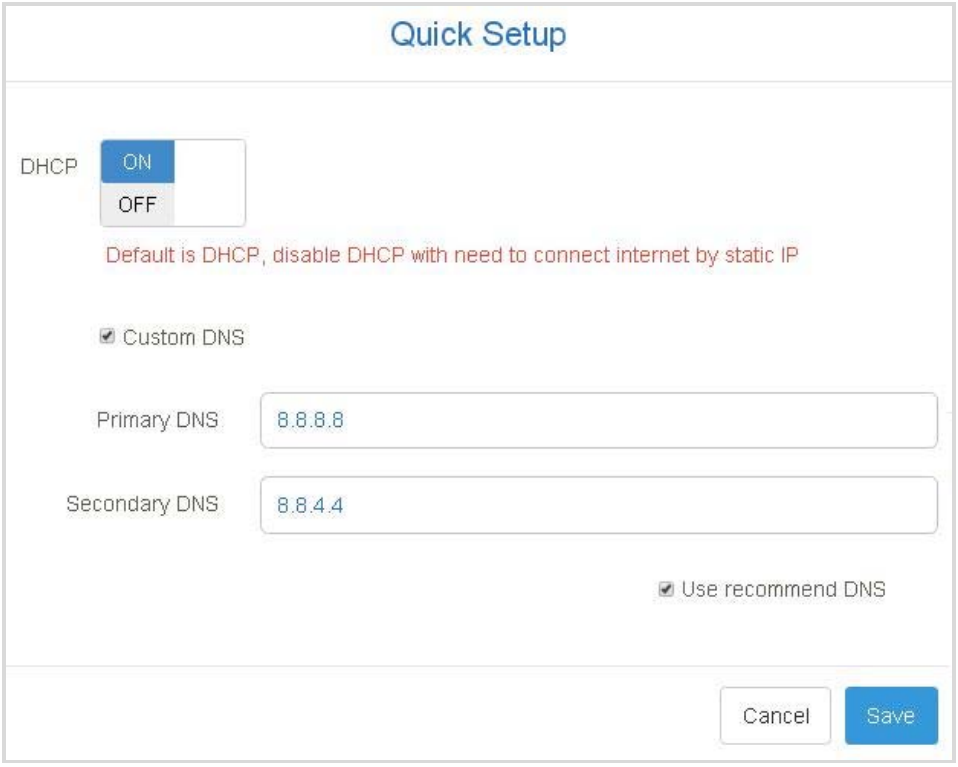

Figure 9 – Configure DNS Server

Static IP: You may set Static IP manually by clicking the "**DHCP**" button, associated parameter fields will be displayed underneath accordingly. Fill in the network parameter as follows.

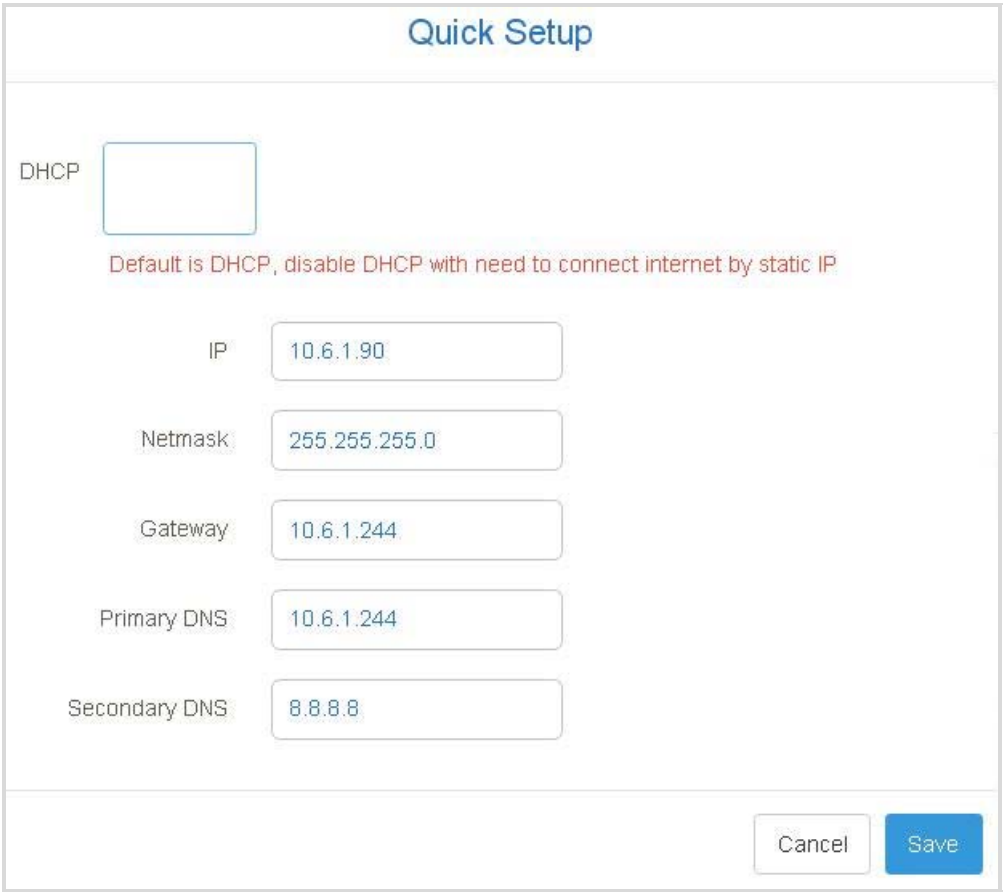

Figure 10 – configure static IP

IP: IP address of device

Netmask: IP address class. To divide an IP address into subnets and specify the network's available hosts

Gateway: IP address of the network node that connects two networks

Primary DNS: IP address of the Primary Domain Name Service

Secondary DNS: IP address of the Secondary Domain Name Service

Click “**Save**” to confirm the setup.

ℹ	Once confirmed, the Setup will take effect immediately without having to reboot the device.

Device Management

After logging into the Web interface, you may see main menu tabs displayed in the top banner as follows:

-System Status

-Device Setting

-Connected Devices

-Account

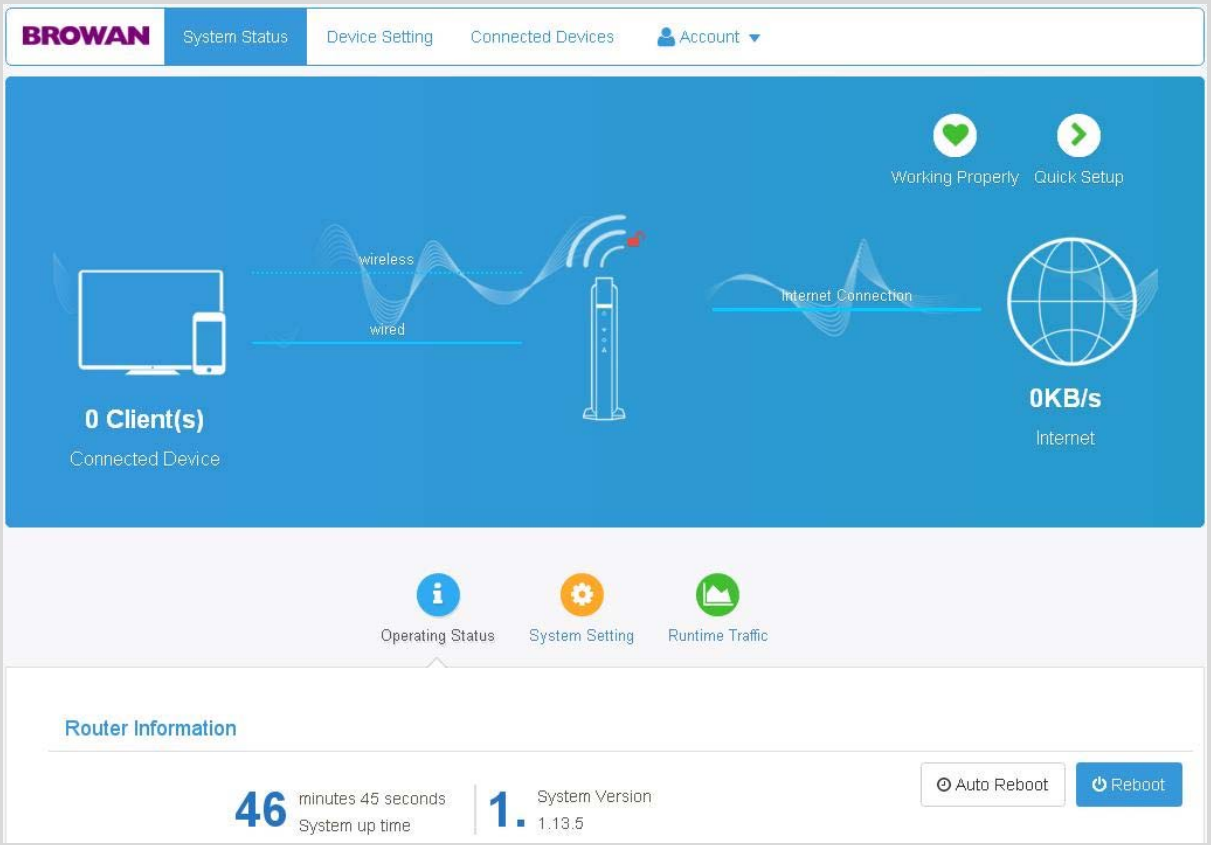

Figure 11 – Login Menu

The different menu categories will be explained in the following sections:

System Status

This category displays information regarding the operating status and contains functions to allow the firmware to be upgraded.

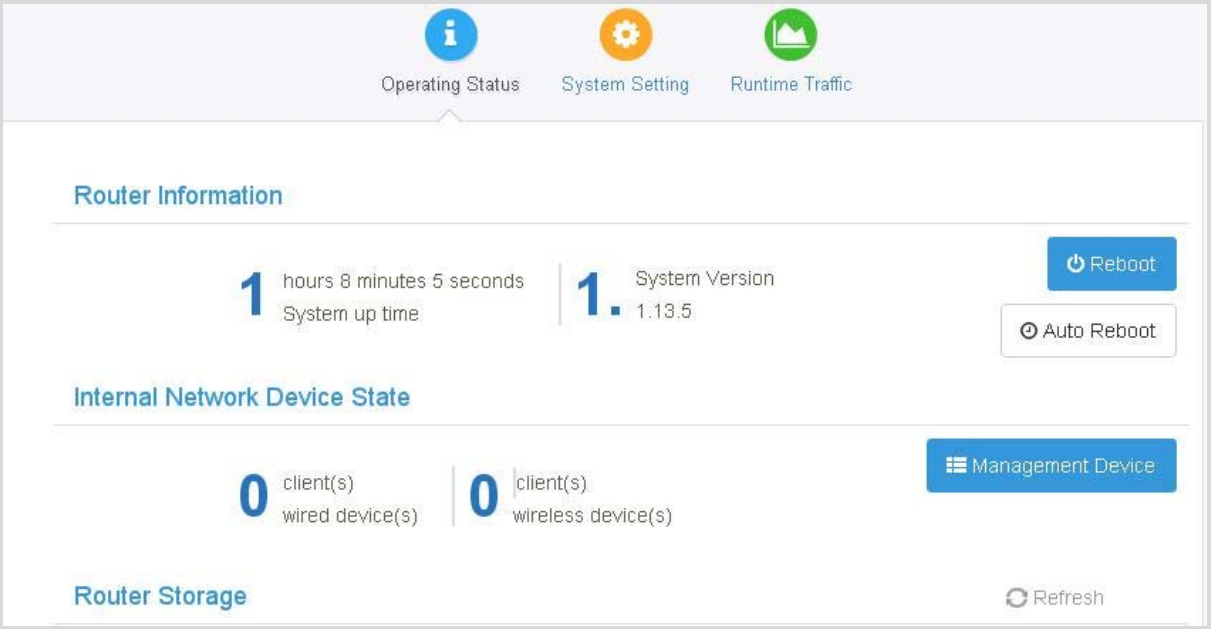

Figure 12 – Device Information

System Status | Operating Status

Shows device information such as firmware version, system uptime, associated clients, etc.

Router Information: Displays system uptime and firmware version.

Reboot: Click to reboot device.

Auto Reboot: Click to schedule automatic reboot.

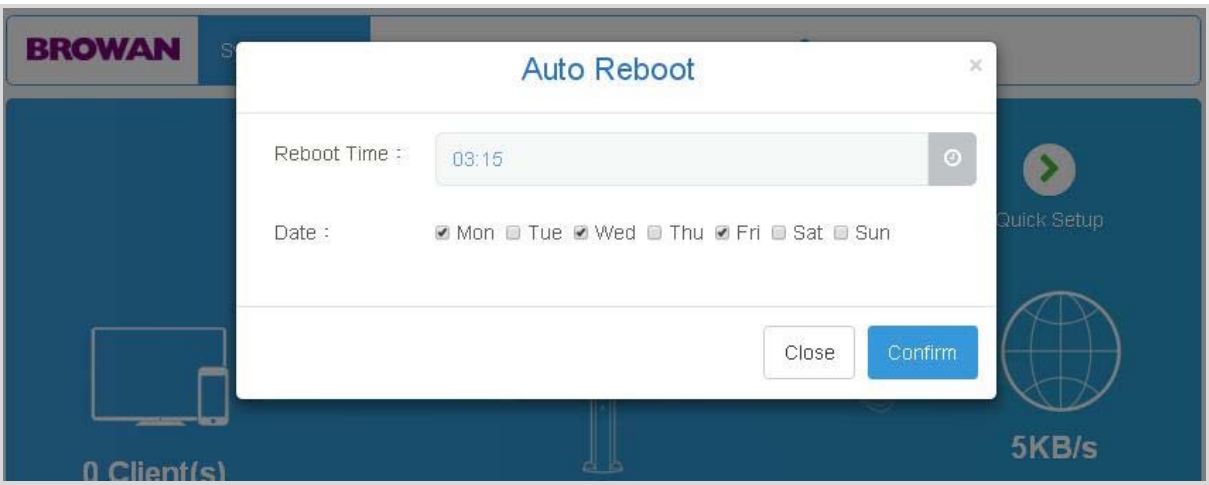

Figure 13 – Setup Auto Reboot Time

Internal Network Device State: Displays the respective number of clients/devices related to wired Ethernet and wireless connections.

Management Device: Redirects to "**Connected Devices**" category of the menu.

System Status | System Setting

System time, firmware upgrade, and reset to factory default can be carried out in this part of the category.

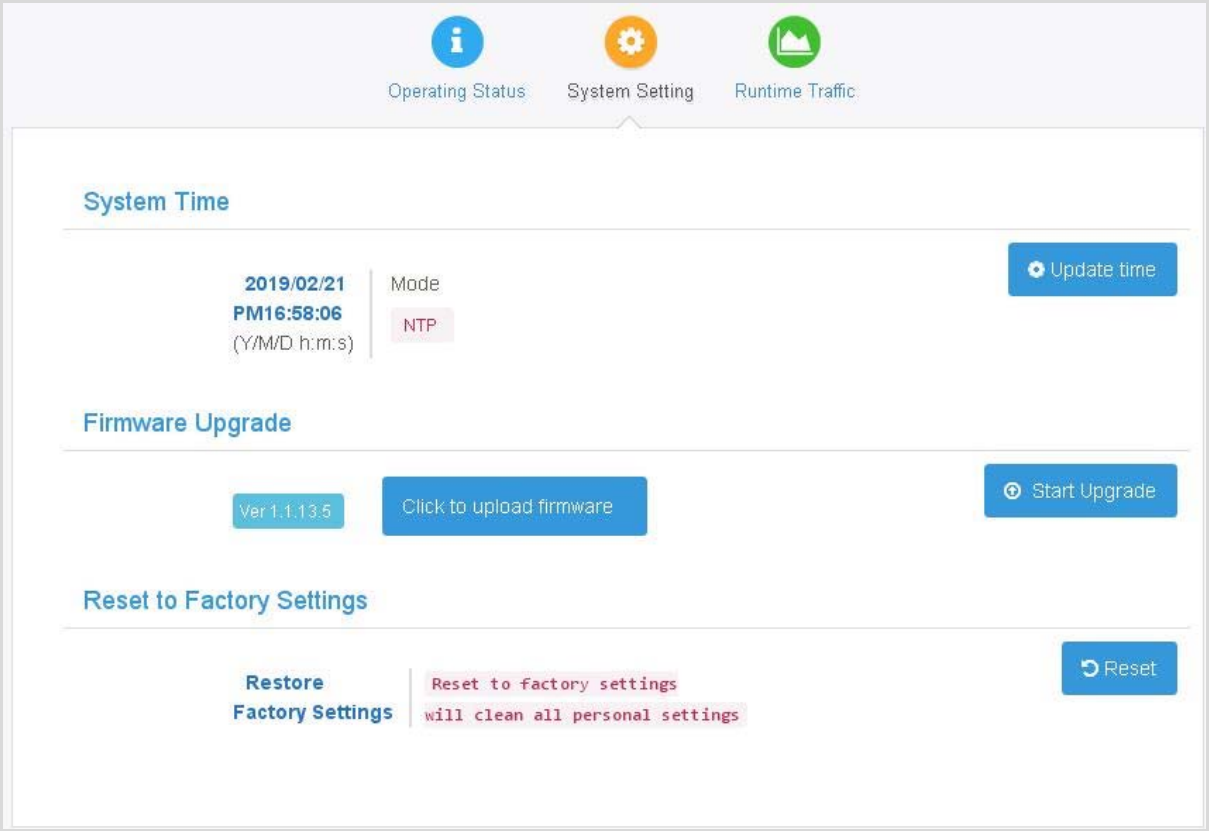

Figure 14 – System Setting

System Time: Displays the system time. Click "**Update time**" to refresh system time.

Firmware Upgrade: Displays current system firmware version. Upgrade firmware by clicking "**Click to upload firmware**", select file, and then click "**Start Upgrade**" to initiate the upgrade.

Figure 15 – Upgrade Firmware

Reset to Factory Settings: Click "**Reset**" to restore original default settings.

Figure 16 – Reset Factory Default Settings

System Status | Runtime Traffic

Displays network traffic and data statistics.

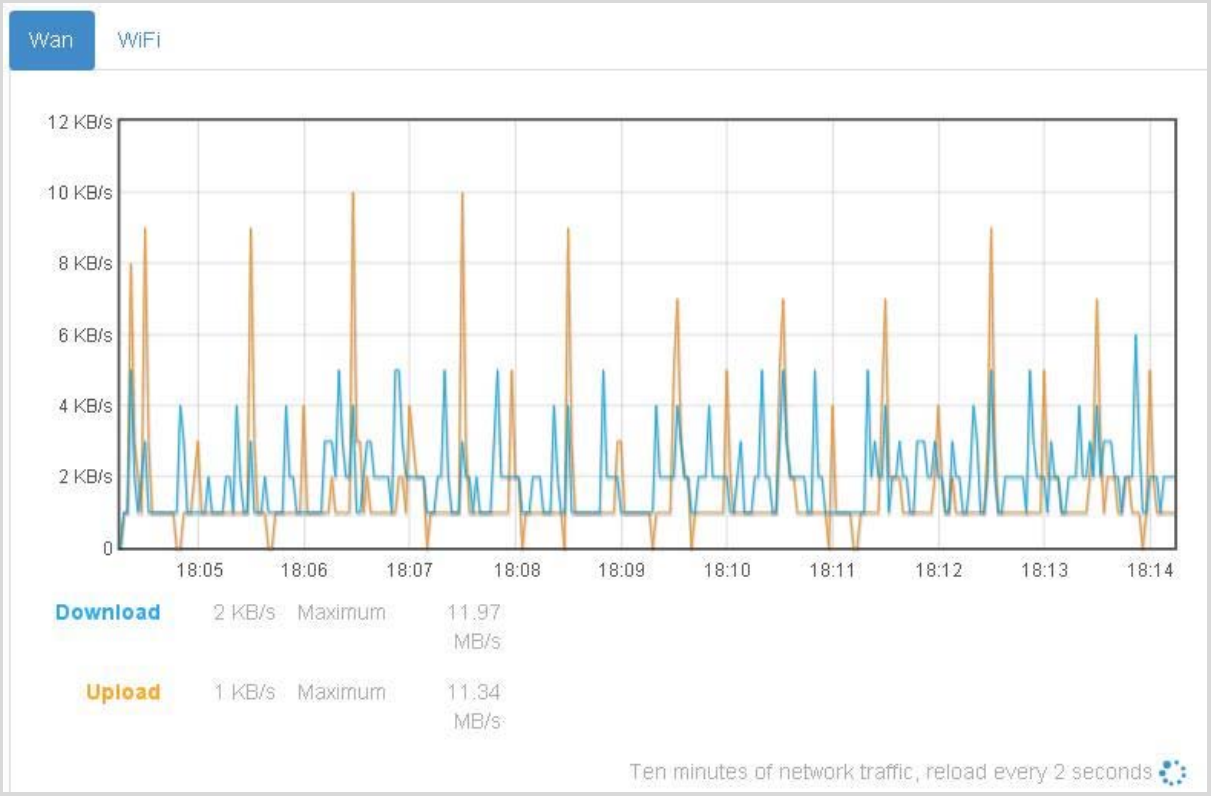

Figure 17 – Network Traffic Statistics

Wan: Shows the bandwidth performance and traffic usage of the Ethernet interface.

WiFi: Shows the bandwidth performance and traffic usage of the WiFi interface.

Download: Shows the download traffic for every 2 seconds and total network traffic for every ten minutes.

Upload: Shows the upload traffic for every 2 seconds and total network traffic for every ten minutes.

Maximum: The maximum download/upload network traffic.

Device Setting

The Device Setting category is to configure the parameters for Wireless, Ethernet, and Advance settings.

Device Setting | Wireless Setting

WiFi Radio Setting: This page is to configure the wireless parameters for WiFi Radio 2.4G, 5G Low, and 5G High. Each radio frequency has its own set of parameters. Please click on the respective tabs and modify the designated fields and pages accordingly.

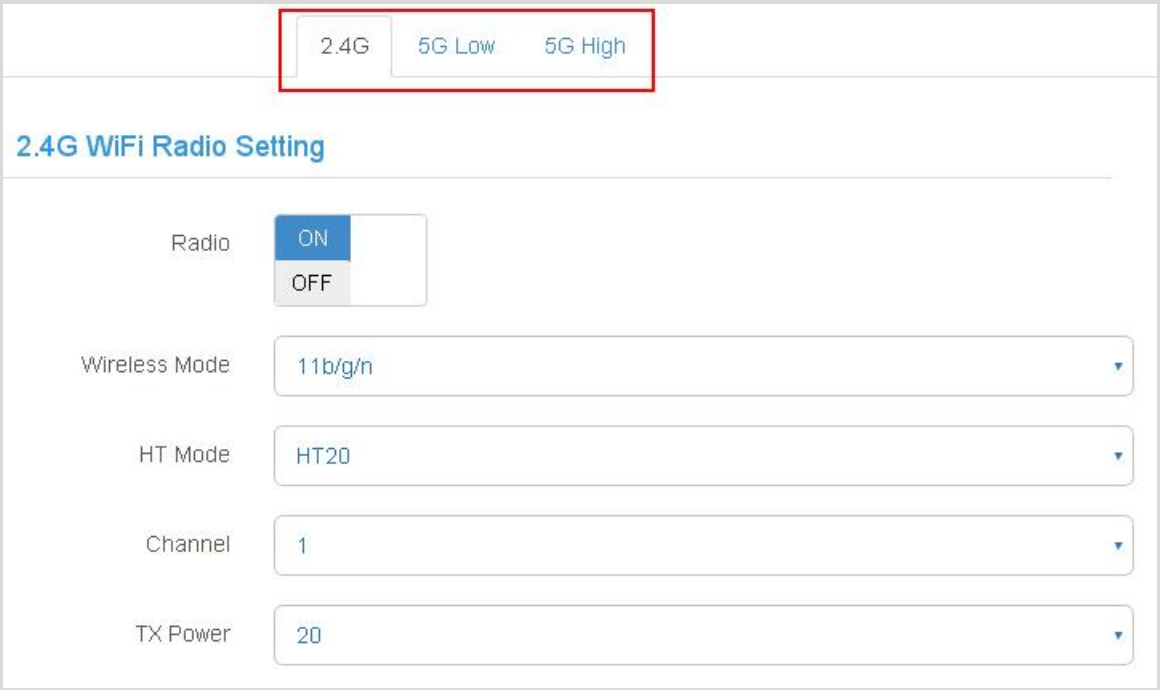

Figure 18 – 2.4G/5G Low/5G High Setting

The 2.4G, 5G Low, and 5G High Radio Setting includes:

Radio: Radio enabled / disabled. [ON / OFF]

Wireless Mode: The 802.11 wireless mode. [802.11a/b/g/n/ac]

HT Mode: HT Mode [HT20/40/80]

Channel: Channel selection. [2.4G / 5G Low Band 1 / 5G High Band 4]

Tx Power: Transmit power

WiFi Interfaces Setting: This page is to configure the SSID and parameters of each wireless interface. Each radio supports up to 16 BSSID (virtual AP). Take the 2.4G WiFi Interface for example in the following pages.

Figure 19 – SSID Setting

Click "**Setting**" for each SSID to configure the parameters individually.

General Setting Tab:

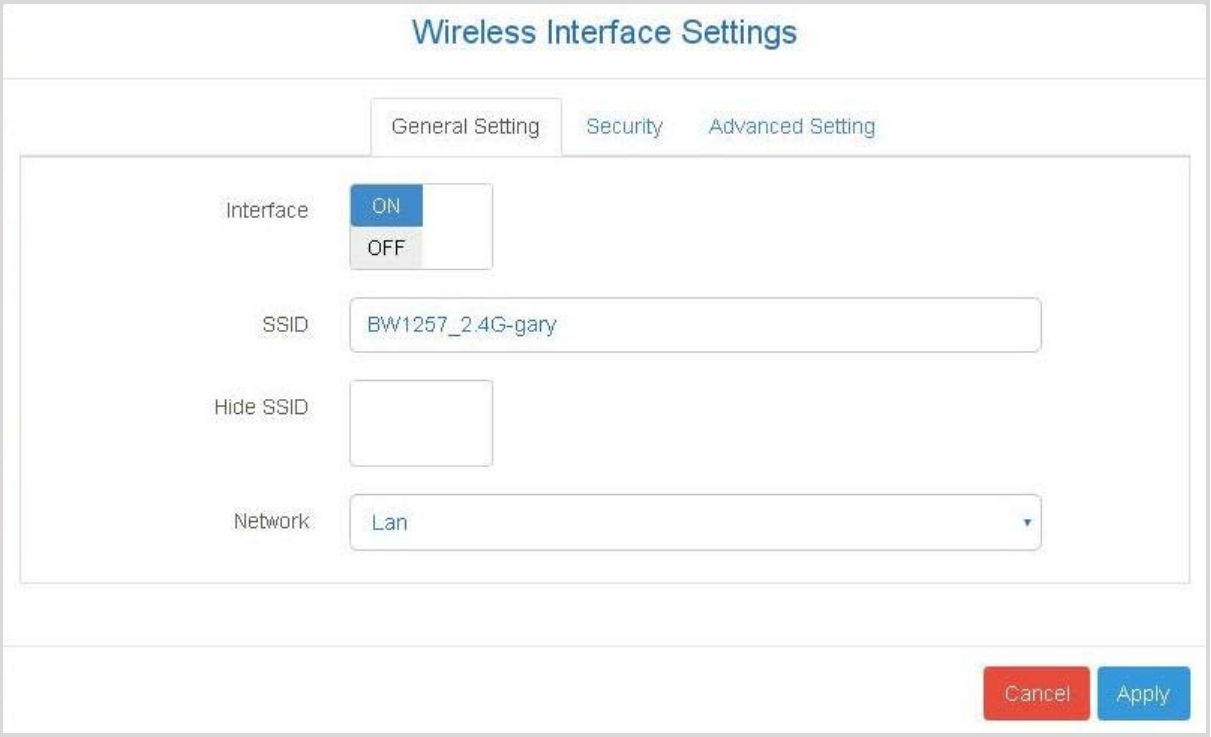

Figure 20 – SSID General Setting

Interface: Click to enable/disable SSID. [ON / OFF]

SSID: The name of the SSID

Hide SSID: Click to hide/display the SSID. [ON / OFF]

Network: Fixed Lan.

Advanced Setting Tab:

Click "**Security**" tab to configure wireless encryption. It supports various wireless encryption methods such as WEP, WPA2-PSK, WPA/WPA2-PSK, WPA2-Enterprise, and WPA/WPA2-Enterprise.

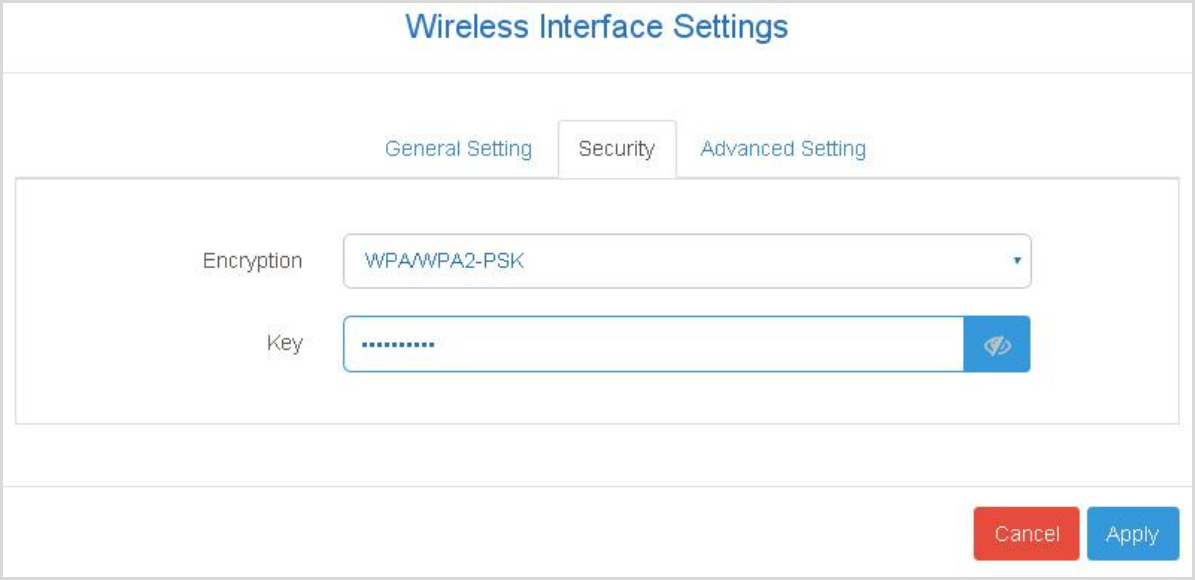

Figure 21 – SSID Security

Advanced Setting Tab:

Figure 22 – SSID Advanced Setting

Separate Clients (Isolation): This prevents clients that connect to the same SSID from communicating directly to each other. [ON / OFF]

Max Client: The maximum number of wireless clients linked to this particular SSID. [Maximum: 255]

i	Note: An aggregate number of 255 wireless clients can be linked to each radio.

Click "**Apply**" to save all changes.

Go back to the main page after applying all SSID configuration and click "**Save**" to activate the setup.

i	The applied setup will take effect immediately after clicking "**Save**" without having to reboot the device.

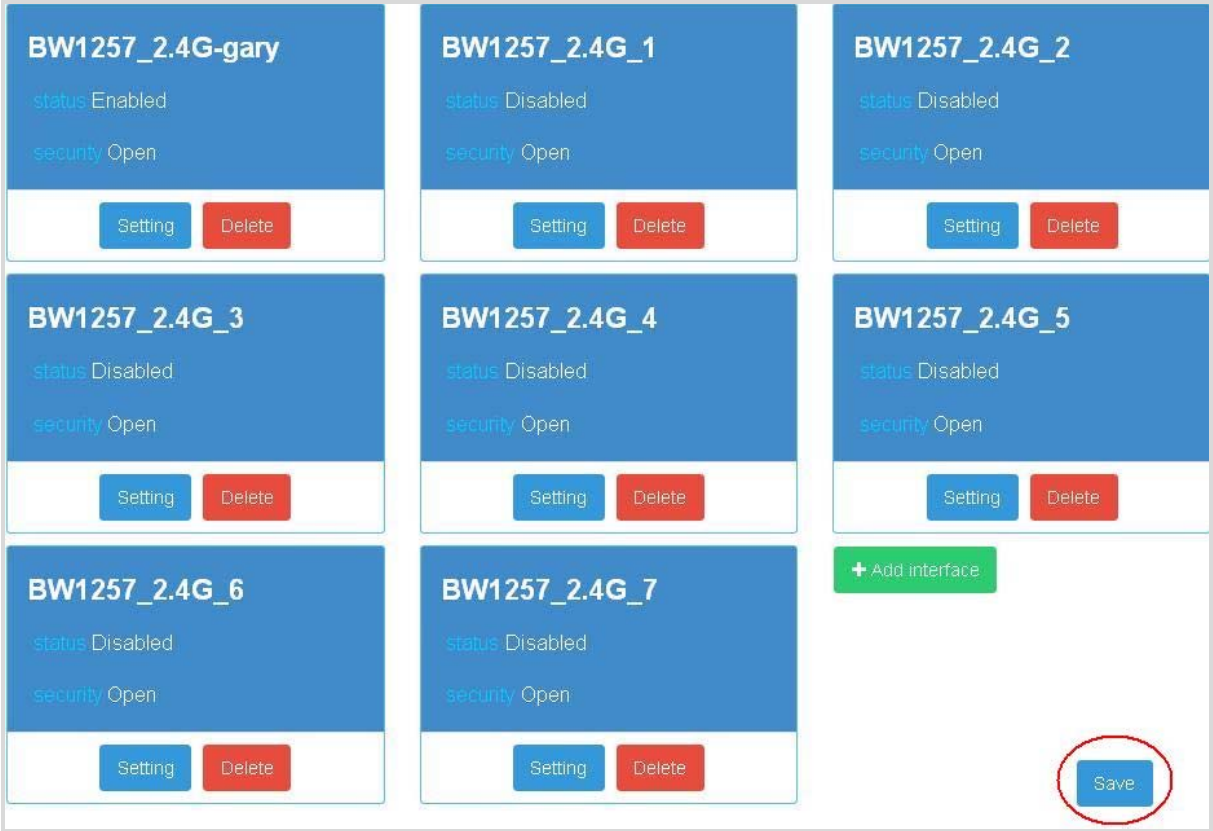

Figure 23 – Save to Activate Setup

Delete SSID:

Click "**Delete**" to delete the SSID.

Device Setting | Ethernet Setting

Ethernet Network Setting: This page is to setup the Ethernet network parameters such as IP address, Netmask, Gateway, DNS Server and so on.

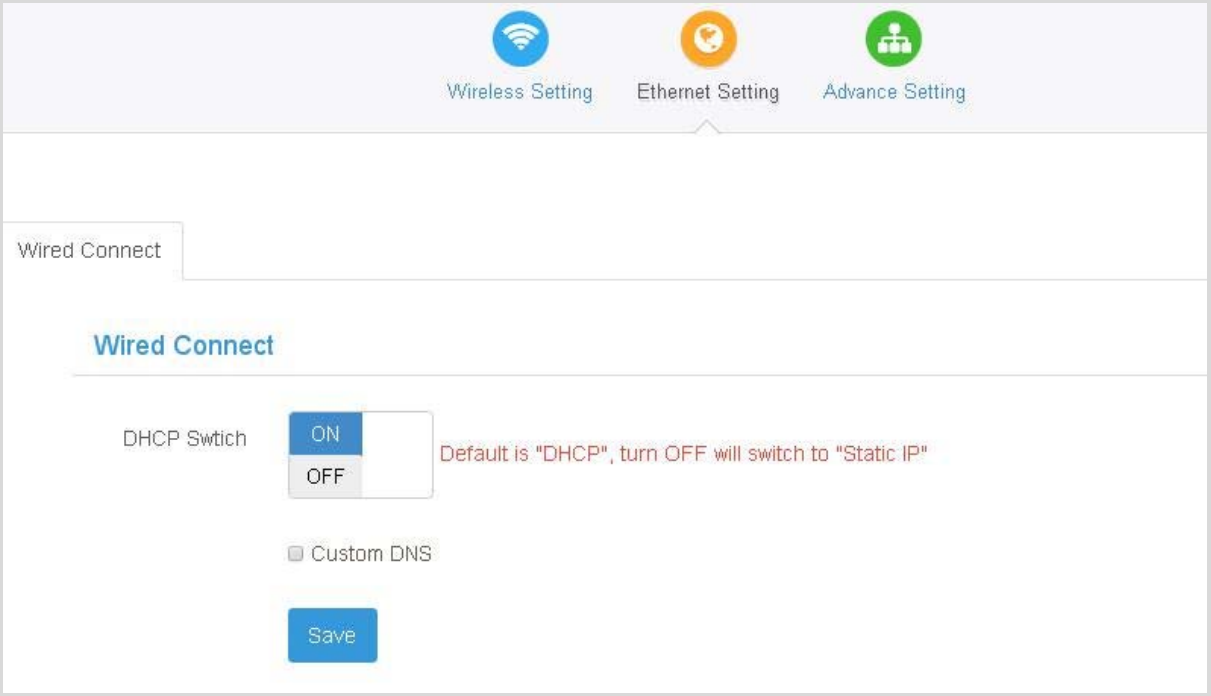

Figure 24 – Ethernet Setting

DHCP Switch: Ethernet network IP mode. DHCP client is set as default. Click the [ON / OFF] button to change mode. [ON - DHCP client / OFF - Static IP]

Custom DNS: The system allows you to configure Custom DNS Servers under DHCP client mode. You can manually input two Custom DNS Servers by placing a check next to the "**Custom DNS**" item, two blank fields will be displayed underneath for manual input. You may also choose to apply default DNS Servers automatically by selecting the "**Use recommended DNS**" option on the lower right-hand area of the window.

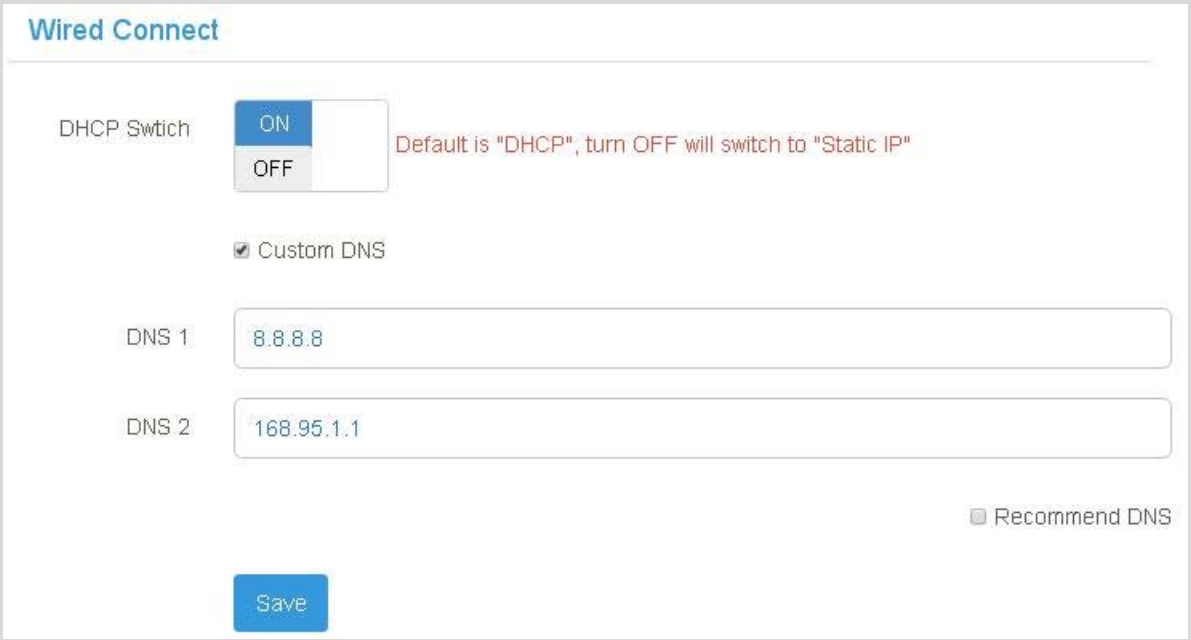

Figure 25 – Custom DNS Server

Recommend DNS: The system will apply two default DNS Servers if this option is selected.

Static IP: You may set Static IP manually by clicking the "**DHCP**" button, associated parameter fields will be displayed underneath accordingly. Fill in the network parameter as follows.

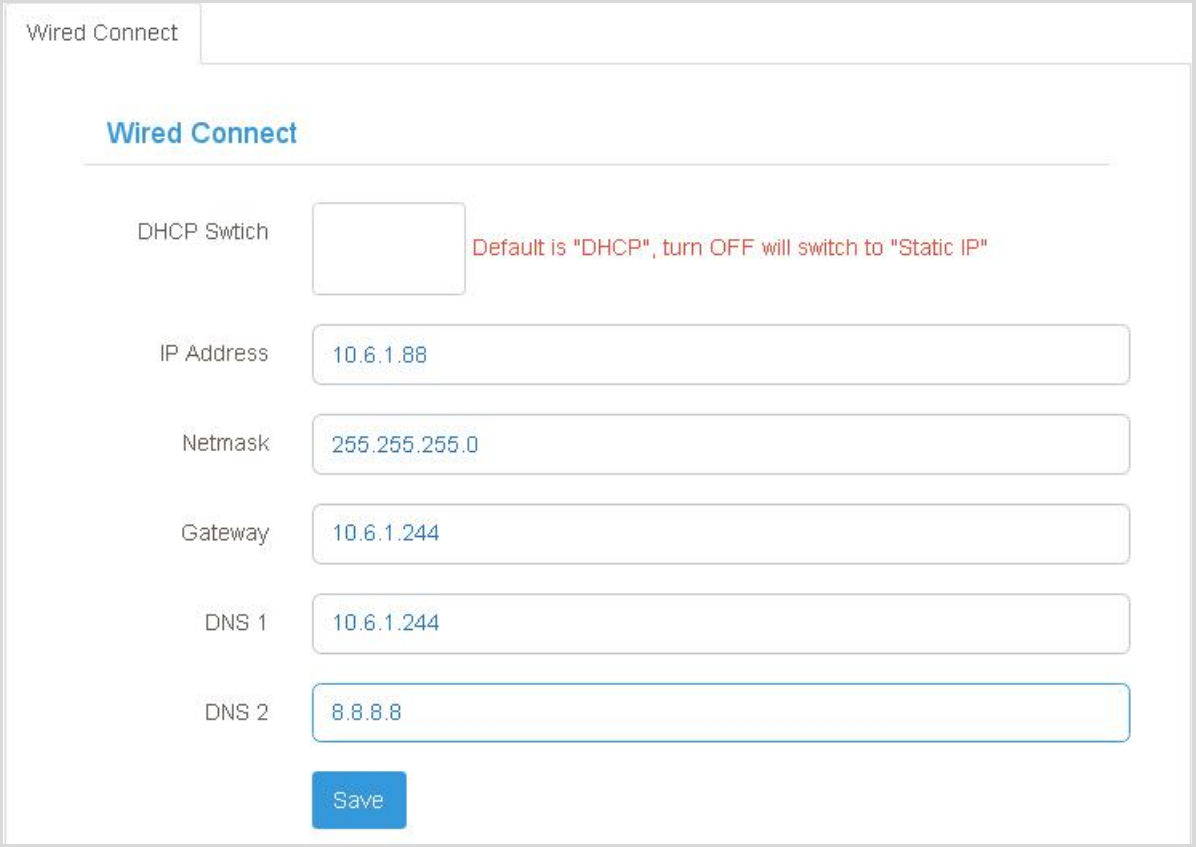

Figure 26 – Static IP Setting

IP: IP address of device.

Netmask: IP address class. To divide an IP address into subnets and specify the network's available hosts.

Gateway: IP address of the network node that connects two networks

Primary DNS: IP address of the Primary Domain Name Service

Secondary DNS: IP address of the Secondary Domain Name Service

Click "**Save**" button to confirm the setup.

i	Once confirmed, the Setup will take effect immediately without having to reboot the device.

Device Setting | Advance Setting

TR-069 is the Broadband Forum technical specification entitled CPE WAN Management Protocol (CWMP). It defines an application layer protocol for remote management of end-user devices. As a bidirectional SOAP/HTTP-based protocol, it provides the communication between customer-premises equipment (CPE) and Auto Configuration Servers (ACS server). It includes both a safe auto-configuration and the control of other CPE management functions within an integrated framework.

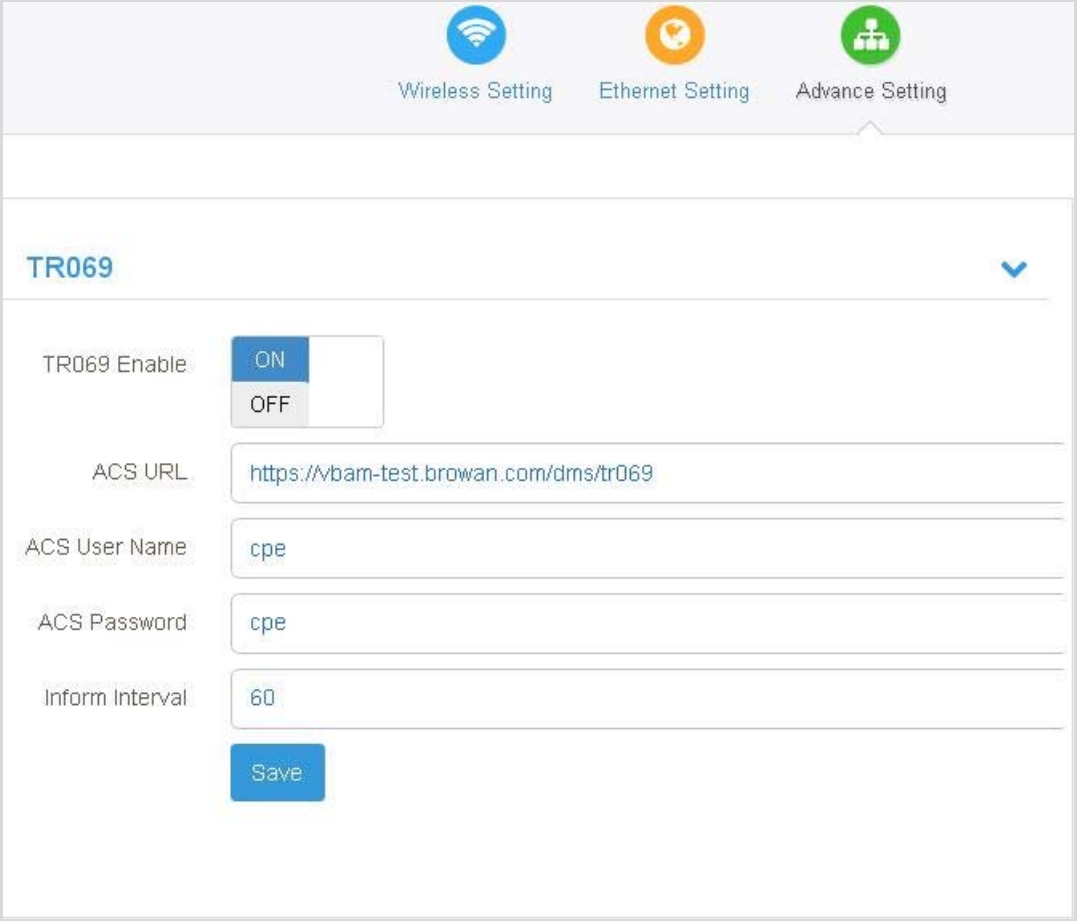

Figure 27 – Advance Setting

TR069 Enable: Enable / Disable TR-069 service.[ON / OFF]

ACS URL: The URL of the ACS management server.

ACS User Name: The CPE user name for registering into the ACS server.

ACS Password: The CPE password for registering into the ACS server.

Inform Interval: A fixed schedule in which the CPE sends status reports to the ACS server.

ℹ	Contact the ACS server administrator to reconfirm the above.

Click “**Save**” to allow the setup to take effect immediately.

Connected Devices

This page displays the information of all wired (Ethernet) and wirelessly connected devices.

Figure 28 – Device Information

Connection type: The connection interface of the device.

Name: Name of the device.

MAC: MAC address of the device.

IP: The client IP address of the device.

Refresh: Click to renew page.

Account

This category manages device accounts and passwords. The “Logout” option is located here as well.

Click drop-down menu of “**Account**” and select “**Change Account & Password**”.

Figure 29 – Change Account & Password

Fill in the new account and password in the pop-out window.

Figure 30 – Change Account & Password

New Account: New account name used for next login.

Old Password: Old password.

New Password: Fill in new password.

Retype New Password: Re-enter new password.

Click “**Confirm**” to confirm the change. Click “**Close**” to abort the action.

Click ”**Logout**” to sign out of the system.

Figure 31 – Logout System