



Suga Electronics Limited

802.11b/g/n (2T2R) WLAN AP/Router Module

User Manual

Model: SWP23MA-3

Version: 1.0

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1. FCC & IC Statement

1.1. FCC Caution

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

This device complies with 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.

1.2. FCC Radiation Exposure Statement

IMPORTANT NOTE:

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.

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



1.3. IC Warning

RSS (Category I Equipment):

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil n' doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

IC RF Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.

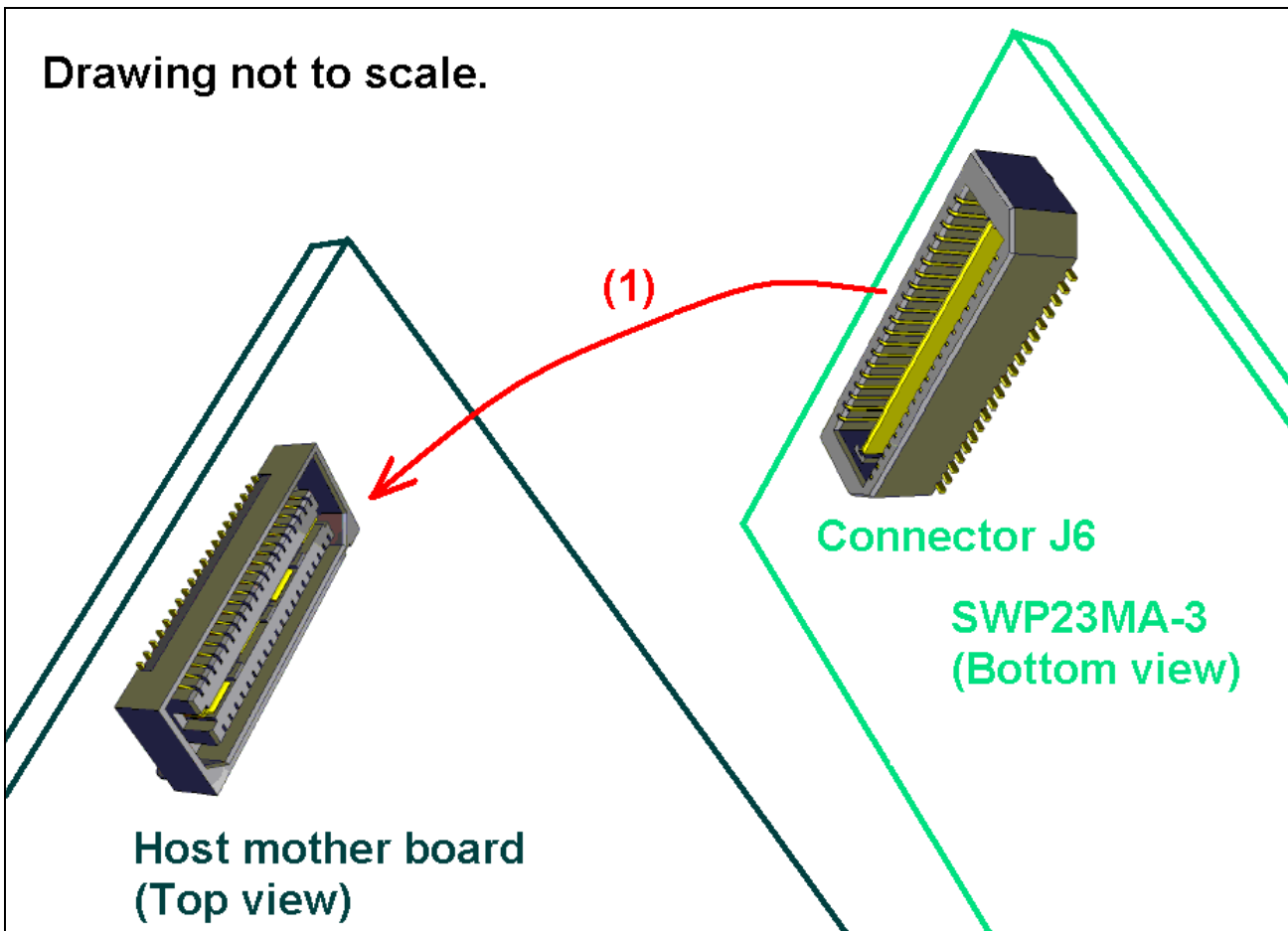
Cet appareil est conforme aux limites d'exposition aux rayonnements définies pour un environnement non contrôlé.

2. Hardware Installation

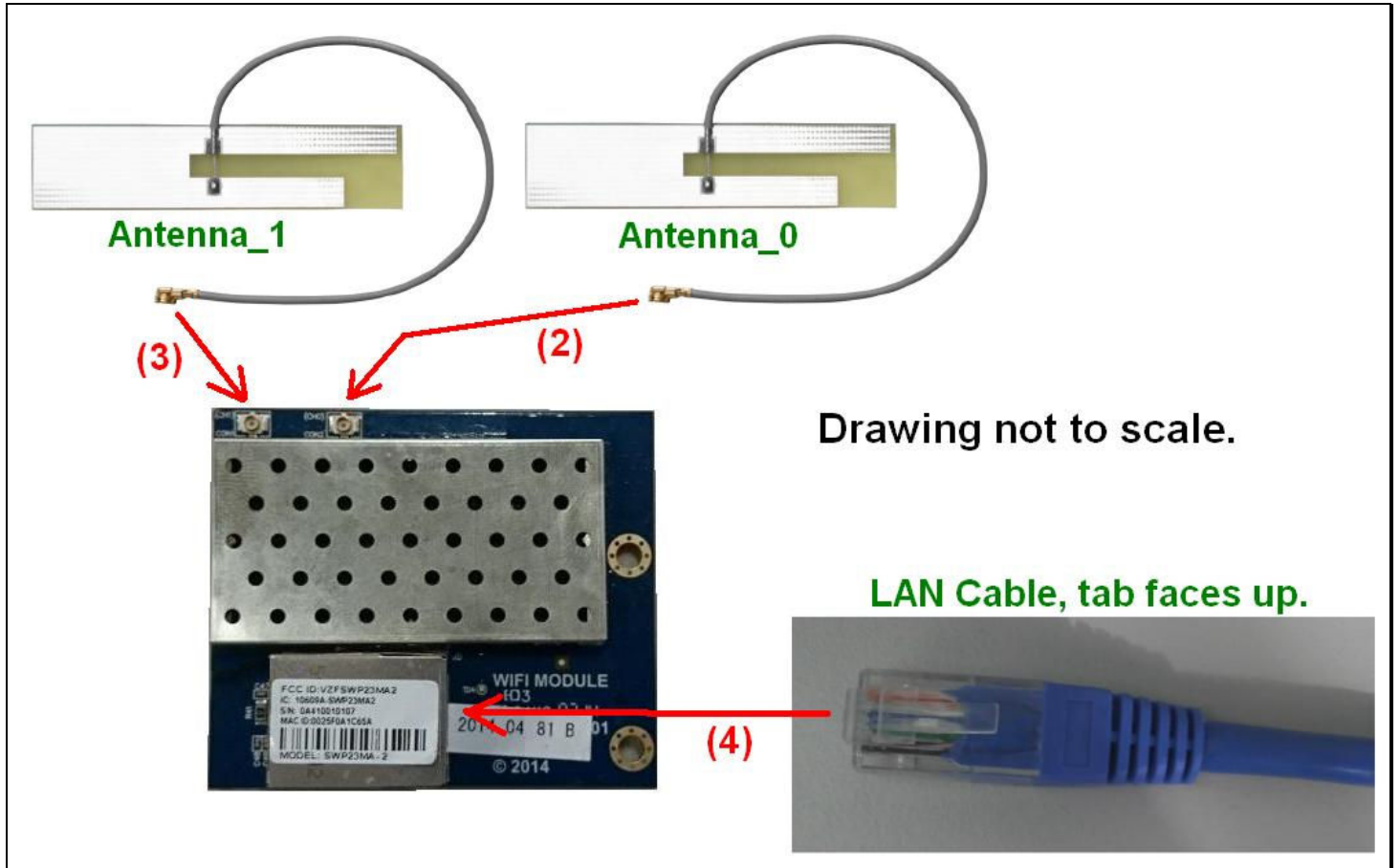
2.1. Hardware Installation Procedures

IMPORTANT: MUST DISCONNECT POWER BEFORE INSTALLATION.

- (1) Plug the module into the host mother board by the 40-pin connector J6. Press the module gently until the connectors are mated.



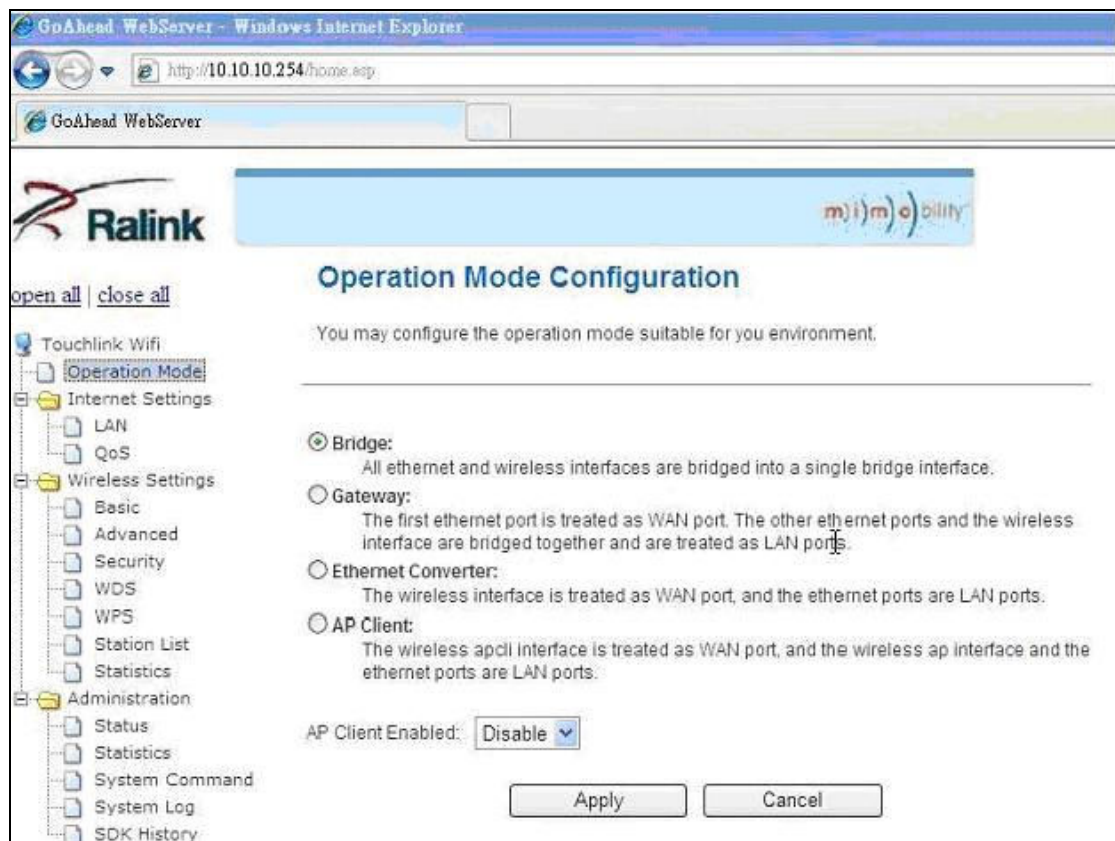
- (2) Plug antenna_0 into the RF connector port.
- (3) Plug antenna_1 into the RF connector port.
- (4) Plug the LAN/WAN cable in to the LAN/WAN RJ45 socket J5.



3. Software Installation

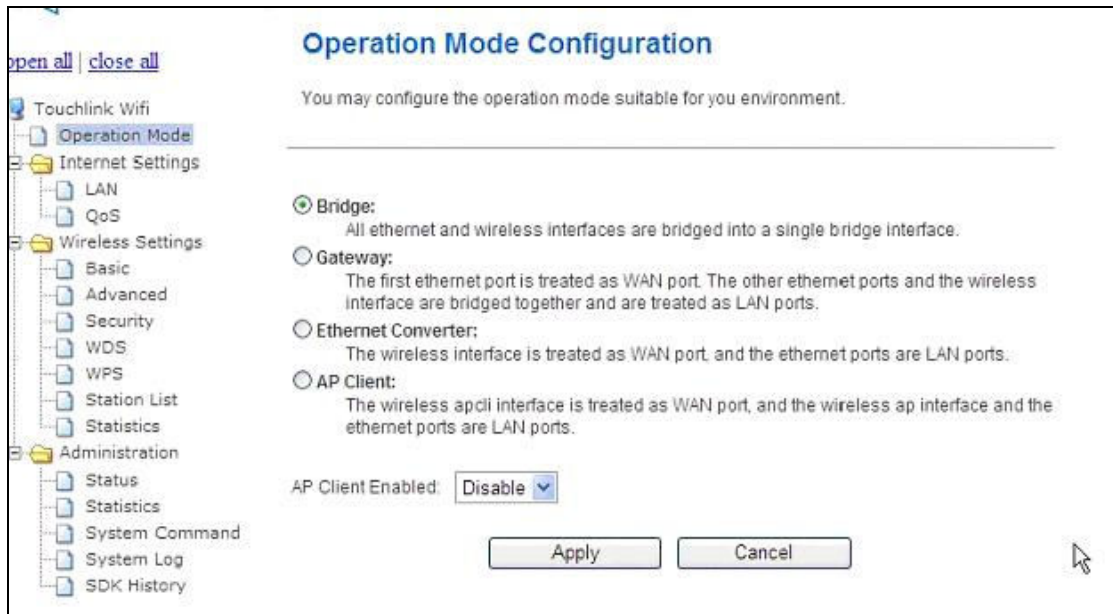
3.1. Booting up

Power up the module. Connect the Ethernet port to the PC. Enter <http://10.10.10.254> into Browser (e.g., Internet Explorer) to open the AP/router home page. As below:



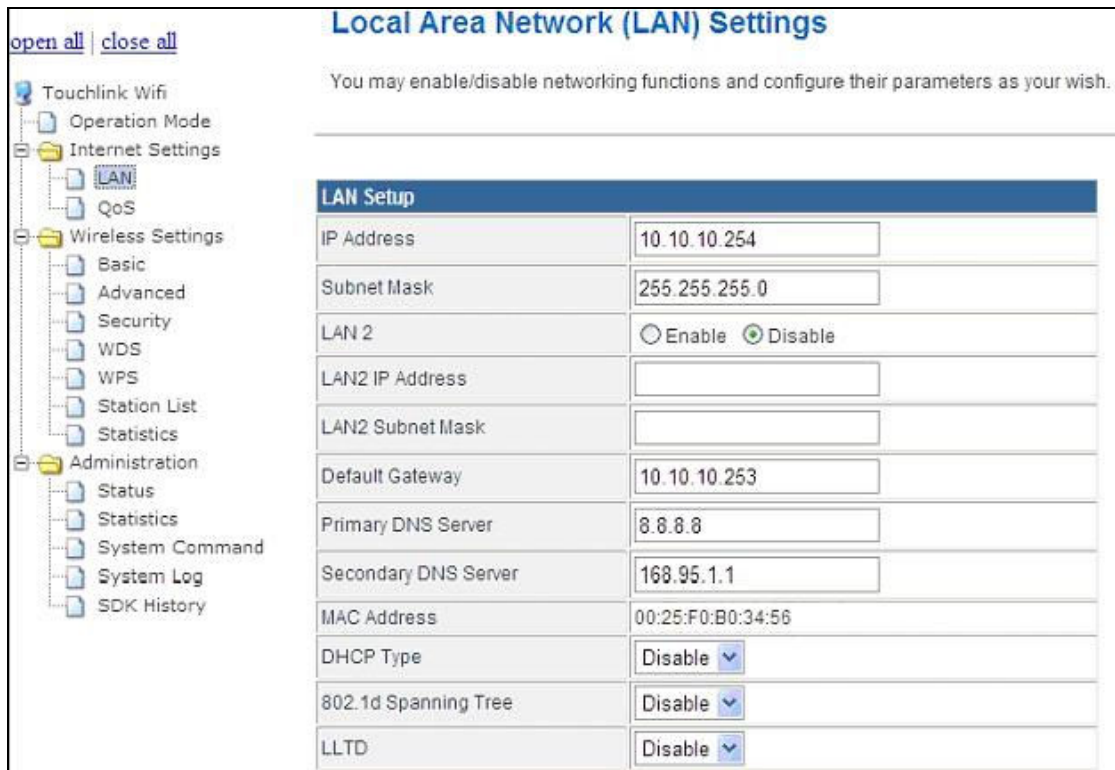
3.2. Operation Mode Configuration

Select “Operation Mode” to configure the operation mode to fit your environment. In this menu, there are four options. Please follow the description to choose the option you needed. If you want the module to act as an AP and Client, you should select “AP Client” mode, choose “Enable” and then “Apply”.



3.3. Local Area Network (LAN) Settings

Select “LAN” option to set your home page IP address, subnet mask, default gateway, etc. The default IP is 10.10.10.254.



[open all](#) | [close all](#)

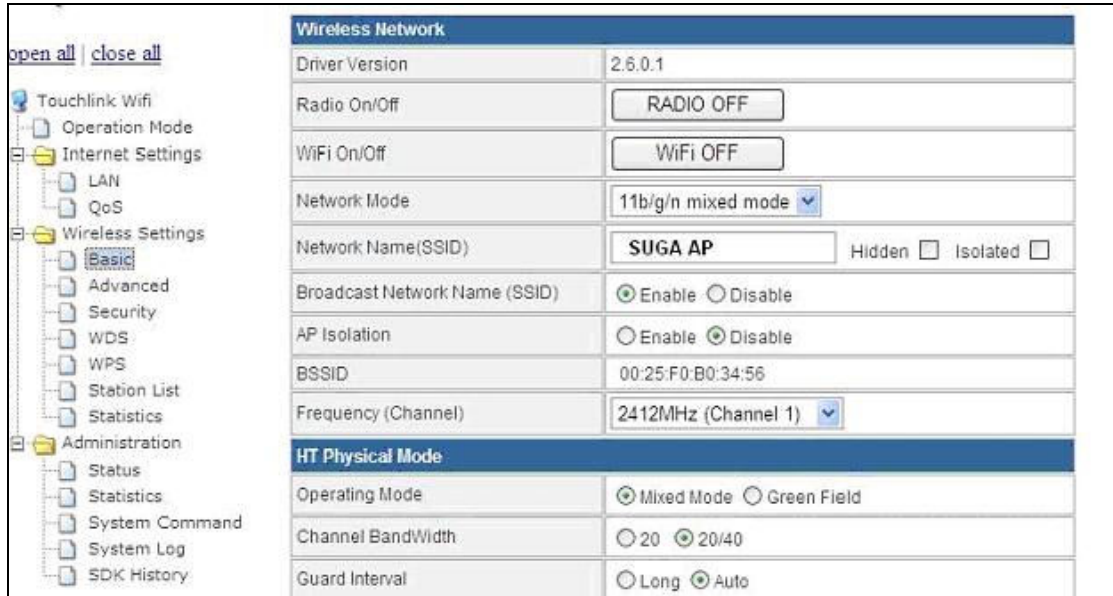
Local Area Network (LAN) Settings

You may enable/disable networking functions and configure their parameters as your wish.

LAN Setup	
IP Address	<input type="text" value="10.10.10.254"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
LAN 2	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
LAN2 IP Address	<input type="text"/>
LAN2 Subnet Mask	<input type="text"/>
Default Gateway	<input type="text" value="10.10.10.253"/>
Primary DNS Server	<input type="text" value="8.8.8.8"/>
Secondary DNS Server	<input type="text" value="168.95.1.1"/>
MAC Address	00:25:F0:B0:34:56
DHCP Type	Disable <input type="button" value="v"/>
802.1d Spanning Tree	Disable <input type="button" value="v"/>
LLTD	Disable <input type="button" value="v"/>

3.4. Basic Wireless Settings

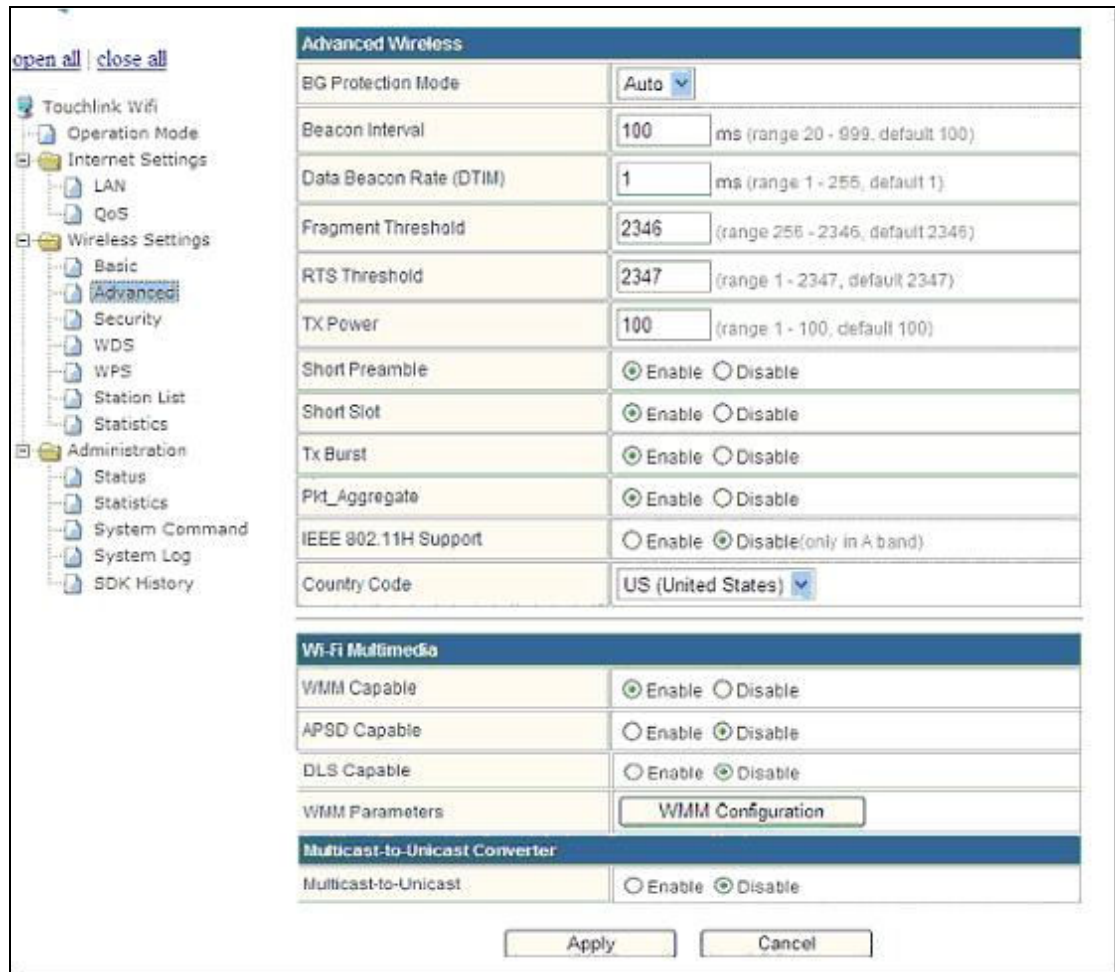
You could configure the minimum number of Wireless settings for communication such as Network Name (SSID), Network Mode (802.11b/g/n) and Channel. The Access Point can be set simply with only the minimum setting items.



Wireless Network	
Driver Version	2.6.0.1
Radio On/Off	RADIO OFF
WiFi On/Off	WiFi OFF
Network Mode	11b/g/n mixed mode
Network Name(SSID)	SUGA AP <input type="checkbox"/> Hidden <input type="checkbox"/> Isolated
Broadcast Network Name (SSID)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
AP Isolation	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
BSSID	00:25:F0:B0:34:56
Frequency (Channel)	2412MHz (Channel 1)
HT Physical Mode	
Operating Mode	<input checked="" type="radio"/> Mixed Mode <input type="radio"/> Green Field
Channel BandWidth	<input type="radio"/> 20 <input checked="" type="radio"/> 20/40
Guard Interval	<input type="radio"/> Long <input checked="" type="radio"/> Auto

3.5. Advanced Wireless Settings

Use the Advanced Setup page to make advanced settings for the Wireless. Advanced Setup includes items that are not available from the Basic Setup page such as Beacon Interval, Control Tx Rates and Basic Data Rates.



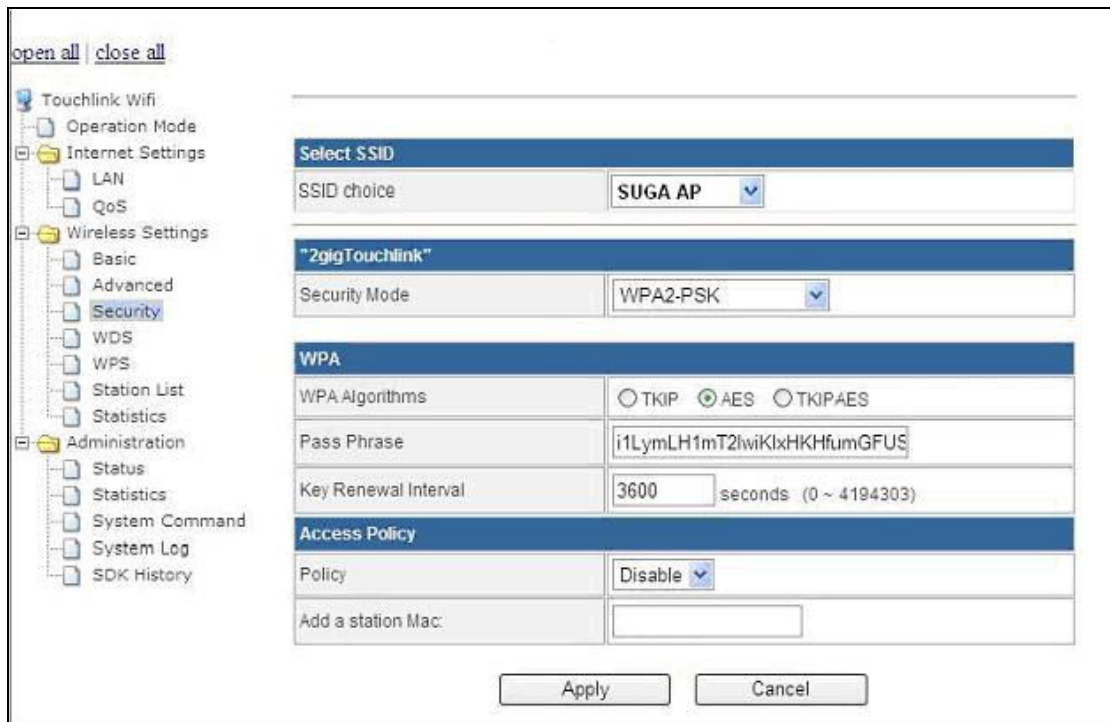
Advanced Wireless	
BG Protection Mode	Auto
Beacon Interval	100 ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	1 ms (range 1 - 255, default 1)
Fragment Threshold	2346 (range 256 - 2346, default 2346)
RTS Threshold	2347 (range 1 - 2347, default 2347)
TX Power	100 (range 1 - 100, default 100)
Short Preamble	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Short Slot	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Tx Burst	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Pkt_Aggregate	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IEEE 802.11H Support	<input type="radio"/> Enable <input checked="" type="radio"/> Disable (only in A band)
Country Code	US (United States)

Wi-Fi Multimedia	
WMM Capable	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
APSD Capable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
DLS Capable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
WMM Parameters	WMM Configuration

Multicast-to-Unicast Converter	
Multicast-to-Unicast	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

3.6. Wireless Security / Encryption Settings

Setup the wireless security and encryption to prevent from unauthorized access and monitoring.



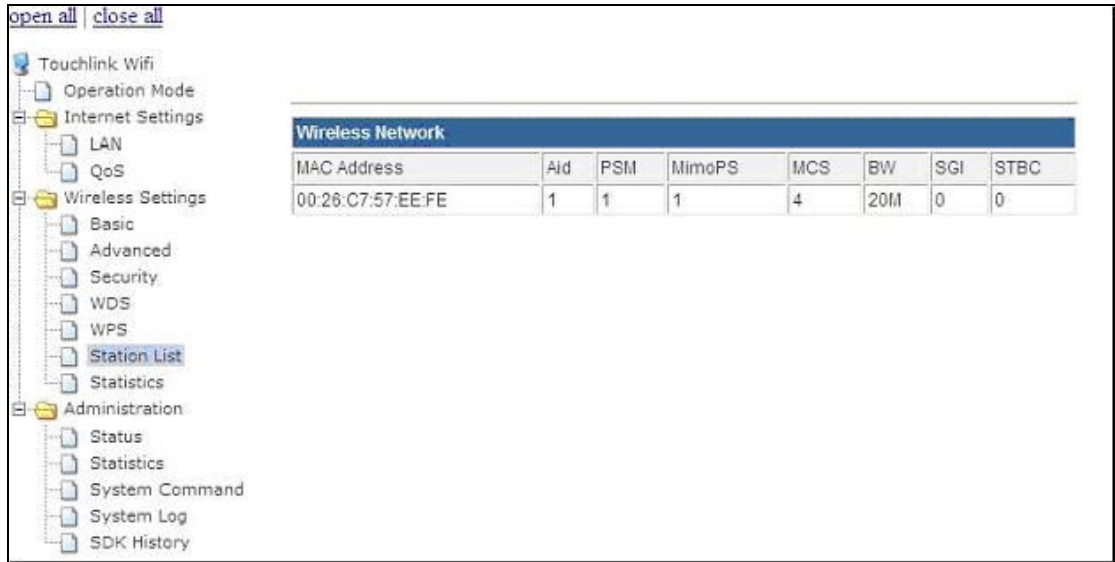
The screenshot shows a web-based configuration interface for wireless security. On the left is a tree view with categories: Touchlink Wifi, Operation Mode, Internet Settings (LAN, QoS), Wireless Settings (Basic, Advanced, Security, WDS, WPS, Station List, Statistics), and Administration (Status, Statistics, System Command, System Log, SDK History). The 'Security' option under 'Wireless Settings' is selected. The main area contains the following settings:

- Select SSID:** SSID choice is set to 'SUGA AP'.
- "2gigTouchlink":** Security Mode is set to 'WPA2-PSK'.
- WPA:** WPA Algorithms are set to 'AES' (selected), with 'TKIP' and 'TKIPAES' as options. The Pass Phrase is 'i1LymLH1mT2lwiKlxHKHfumGFUS'. The Key Renewal Interval is '3600' seconds.
- Access Policy:** Policy is set to 'Disable'. There is an 'Add a station Mac:' field below.

At the bottom, there are 'Apply' and 'Cancel' buttons.

3.7. Station List

You could monitor stations that are associated to this AP here.



Wireless Network							
MAC Address	Aid	PSM	MimoPS	MCS	BW	SGI	STBC
00:26:C7:57:EE:FE	1	1	1	4	20M	0	0



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4. Device Labeling

The host device containing this module must either:

- (1). Make the module label visible so that the FCC ID/ IC number is visible in the end construction.
- (2). Label the end product with the FCC ID and IC number of the module. For example: “Contain FCC ID: [VZFSWP23MA3](#)” and “Contain IC: [10609A-SWP23MA3](#)”.

5. Disclaimer

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