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

User Manual

Model: SWP23MA-2

Version: 1.0

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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.

IMPORTANT NOTE:

1.2 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.

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.

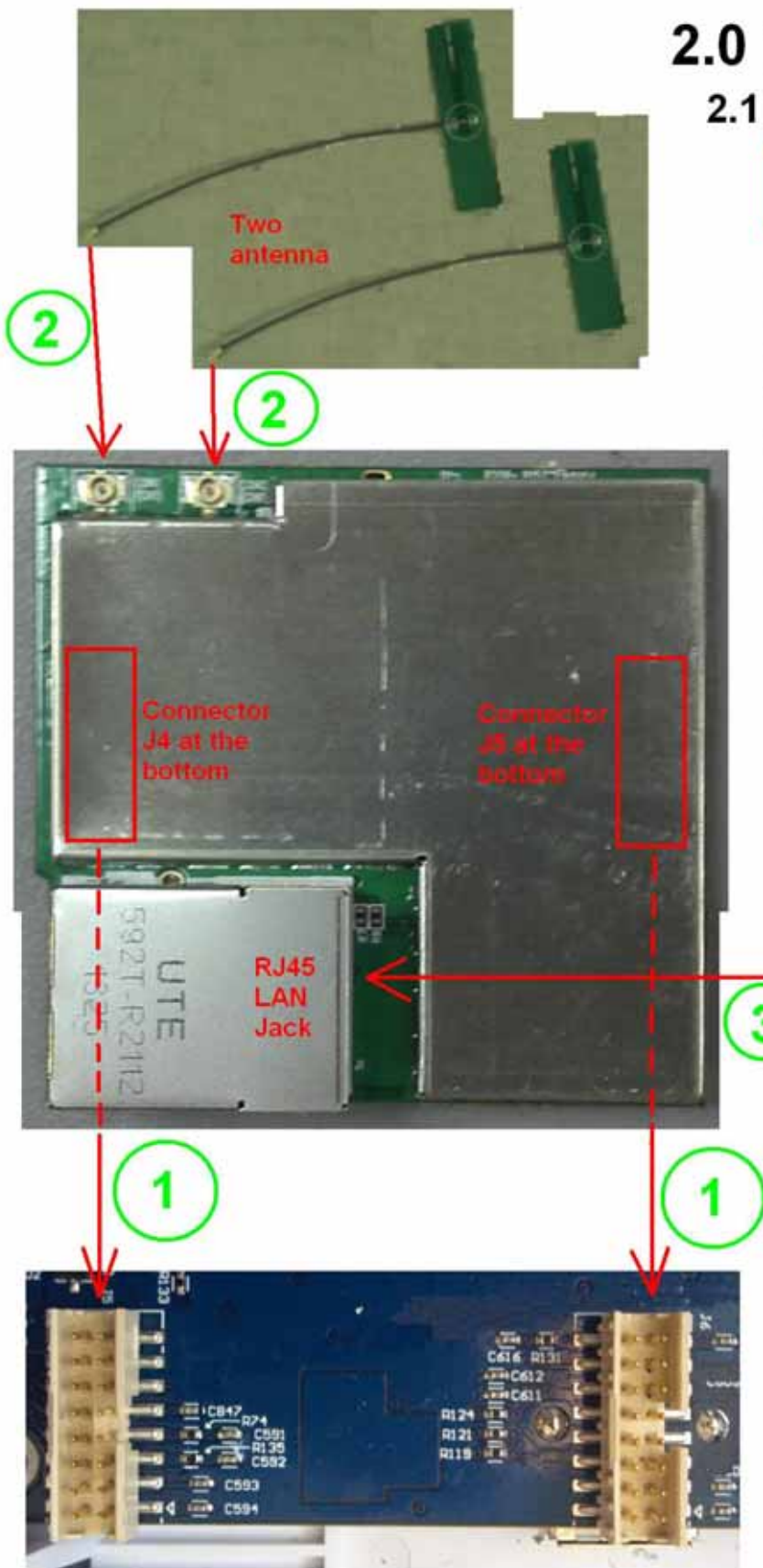
Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, 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.

2.0 Hardware Installation

2.1 Hardware Installation Guide

Important: Must disconnect power before installation.

- (1). Plug the module into the mother board. Align the two female connectors J4, J5 (at the bottom of the module) with the corresponding two female connectors at the mother board. Press the module gently until the connectors are mated.
- (2). Plug the two antenna into the two antenna sockets on the module.
- (3). Plug the LAN cable into the RJ45 LAN socket.



LAN cable, tab face-up.



(Drawing not to scale)



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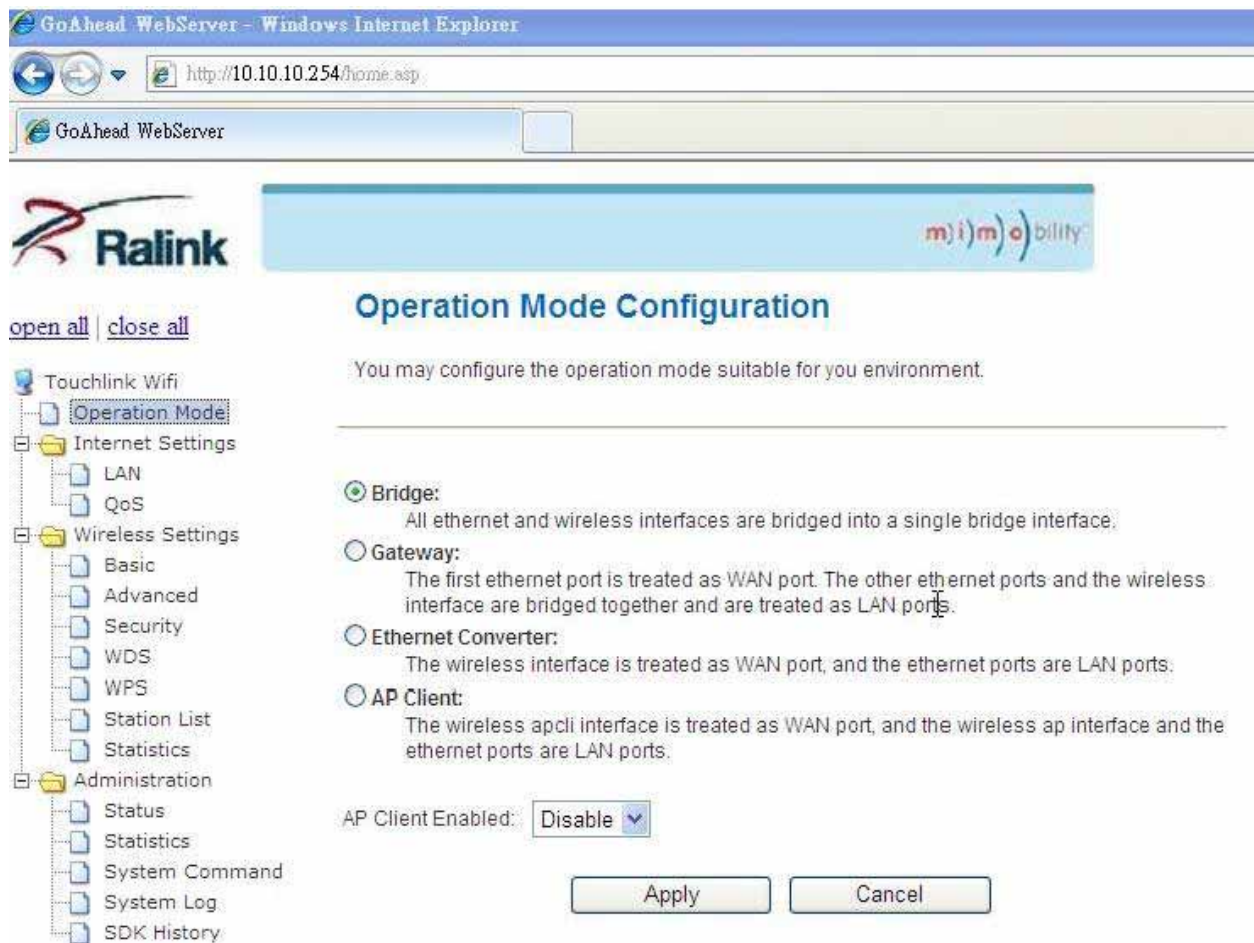
2.2 The SWP23MA-2 WLAN module will be installed into the embedded system user various operation systems(OS) such as Windows 2000/XP/CE or Linux. In this OEM manual, we will use Window XP as an example to show you how to install the driver on the OS. The SWP23MA-2 setup Wizard will guide you through the installation procedure. This Wizard will also guide you installing the utility and drivers.

Note :The comments and conditions for other OS platform may be different from this chapter.

3.0 Software Installation

3.1 Booting up

Connect the power adapter to two 2x 8pin-2.0mm pitch connectors to power up the module, Connect the Ethernet port to the PC, then enter <http://10.10.10.254> into Internet Explorer to open the AP/router home page. As below:



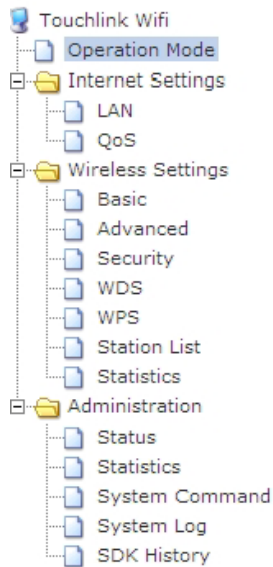
3.2 Operation Mode Configuration

Select “Operation Mode” to configure the operation mode to fit you 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 and “enable” then click “Apply”.



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Operation Mode Configuration

You may configure the operation mode suitable for you environment.

- ☒ **Bridge:**
All ethernet and wireless interfaces are bridged into a single bridge interface.
- ☐ **Gateway:**
The first ethernet port is treated as WAN port. The other ethernet ports and the wireless interface are bridged together and are treated as LAN ports.
- ☐ **Ethernet Converter:**
The wireless interface is treated as WAN port, and the ethernet ports are LAN ports.
- ☐ **AP Client:**
The wireless apcli interface is treated as WAN port, and the wireless ap interface and the ethernet ports are LAN ports.

AP Client Enabled:

3.3 Local Area Network(LAN) Settings

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



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Local Area Network (LAN) Settings

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- Touchlink Wifi
- Operation Mode
- Internet Settings
 - LAN**
 - QoS
- Wireless Settings
 - Basic
 - Advanced
 - Security
 - WDS
 - WPS
 - Station List
 - Statistics
- Administration
 - Status
 - Statistics
 - System Command
 - System Log
 - SDK History

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	<input type="text" value="00:25:F0:B0:34:56"/>
DHCP Type	<input type="text" value="Disable"/> ▼
802.1d Spanning Tree	<input type="text" value="Disable"/> ▼
LLTD	<input type="text" value="Disable"/> ▼

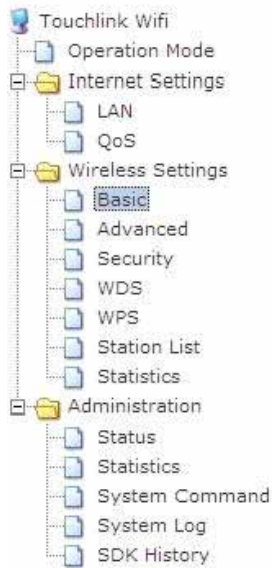
3.4 Basic Wireless Settings

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.



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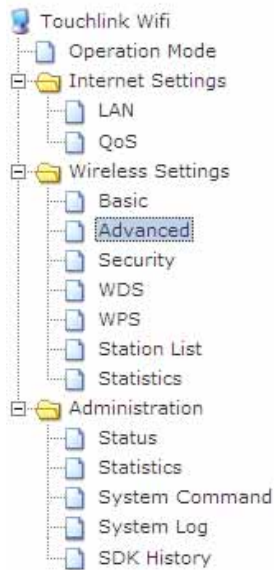


Wireless Network	
Driver Version	2.6.0.1
Radio On/Off	<input type="button" value="RADIO OFF"/>
WiFi On/Off	<input type="button" value="WiFi OFF"/>
Network Mode	11b/g/n mixed mode ▾
Network Name(SSID)	<input type="text" value="SUGA AP"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/>
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 detailed 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.

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Advanced Wireless	
BG Protection Mode	Auto <input type="button" value="v"/>
Beacon Interval	<input type="text" value="100"/> ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	<input type="text" value="1"/> ms (range 1 - 255, default 1)
Fragment Threshold	<input type="text" value="2346"/> (range 256 - 2346, default 2346)
RTS Threshold	<input type="text" value="2347"/> (range 1 - 2347, default 2347)
TX Power	<input type="text" value="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) <input type="button" value="v"/>

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	<input type="button" value="WMM Configuration"/>

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

Apply

Cancel

3.6 Wireless Security/Encryption Settings

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

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Select SSID	
SSID choice	SUGA AP ▼
"2gigTouchlink"	
Security Mode	WPA2-PSK ▼
WPA	
WPA Algorithms	<input type="radio"/> TKIP <input checked="" type="radio"/> AES <input type="radio"/> TKIPAES
Pass Phrase	i1LymLH1mT2lwiKlxHKHfumGFUS
Key Renewal Interval	3600 seconds (0 ~ 4194303)
Access Policy	
Policy	Disable ▼
Add a station Mac:	<input type="text"/>
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

3.7 Station List

You could monitor stations which associated to this AP here.



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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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4.0 Device Labelling

The host device containing this module must either:

- (1). Make the module label visible so that the FCC/IC ID is visible in the end construction.
- (2). Label the end product with the FCC ID and IC ID of the module. For example
“Contain FCC ID: **VZFSWP23MA2**” and “Contain IC ID: **10609A-SWP23MA2**”

5.0 Disclaimer

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