



SGW6008 BLE WiFi Gateway

User Manual

Version 1.1

1. Introduction

The SGW6008 is a Bluetooth Low Energy® (BLE) to Wi-Fi connectivity gateway without using smartphones or apps. This robust gateway collects data from BLE sensors or devices, and sends to the local server or remote cloud server by HTTPS & MQTTS protocols with TLS1.2 standard over Wi-Fi. A connected solution for the SGW8130 BLE sensor tag and SGW111X BLE module, the SGW6008 enables hassle-free real time remote monitoring or asset tracking for IoT applications

2. Features

- SGW1010 BLE module
- Operating system: Amazon FreeRTOS
- 2.4GHz 802.11 b/g/n WiFi
- Protocol: TCP/HTTPS/MQTTS/TLS1.2
- LED status indicators – Power, WiFi & BLE
- Button: AP mode for Wi-Fi configuration and Gateway provisioning
- Power Input: 1A @5V DC, micro-USB interface
- Dimension: 66.75mm x 65.75mm x 23.5mm
- Operating temperature: -10°C to 60°C

3. Applications

- Industrial mesh networks
- Industrial smart lighting
- Smart logistics and transportation
- Smart devices for connected homes
- Smart city infrastructure

4. Block Diagram

Below (Fig.1) is the block diagram of the SGW6008 BLE WiFi Gateway.

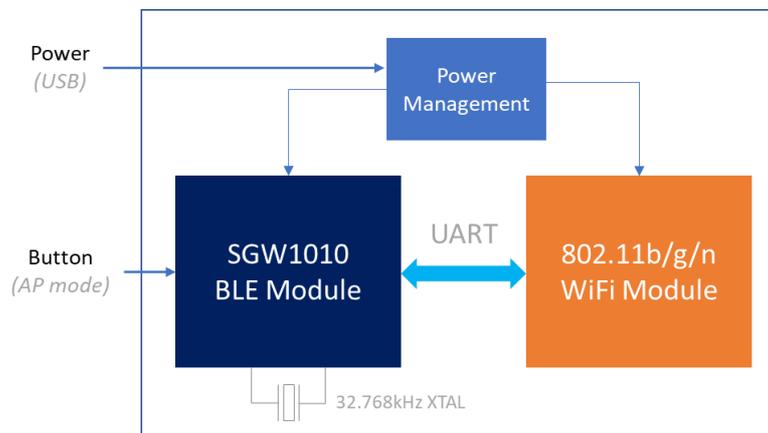


Figure 1. SGW6008 BLE WiFi Gateway Block Diagram

5. SGW6008 BLE WiFi Gateway

User interface and connector available on the SGW6008 BLE WiFi Gateway are shown below (Figure 2)



Figure 2. SGW6008 BLE WiFi Gateway

Connector/Button	Description
USB	Micro-USB, power input (5.0V DC, 1A)
Button	AP mode for Wi-Fi configuration and Gateway provisioning

Top LEDs present on the SGW6008 BLE WiFi Gateway indicates the following status:

	Power LED	Bluetooth LED	WiFi LED
<i>Normal Operation</i>			
Power-on	On	-	-
Bluetooth Signal transmission	On	Blinking	-
WiFi Signal transmission	On	-	Blinking
<i>AP Mode Operation</i>			
AP mode, Not connected	Blinking	-	Blinking
AP mode, connected	Blinking	-	On
WiFi configuration success and connected to SG Wireless IoT server	On	-	Blinking



Figure 3. Internal Structure of SGW6008

6. Electrical Specifications

Absolute Maximum Rating	
Power supply	5.5V DC
Storage temperature	-20°C to 80°C

Recommended Operating Conditions	
Power supply	5.0V DC
Operating temperature	-10°C to 60°C

BLE RF Performance	
Radio Operating Frequencies	2402MHz ~ 2480MHz
Radio On-Air Data Rate	1Mbps, 2Mbps
Maximum Transmit Power	10+/-2dBm
Antenna	Onboard PCB Antenna
Range	Up to 200 meters (open space)

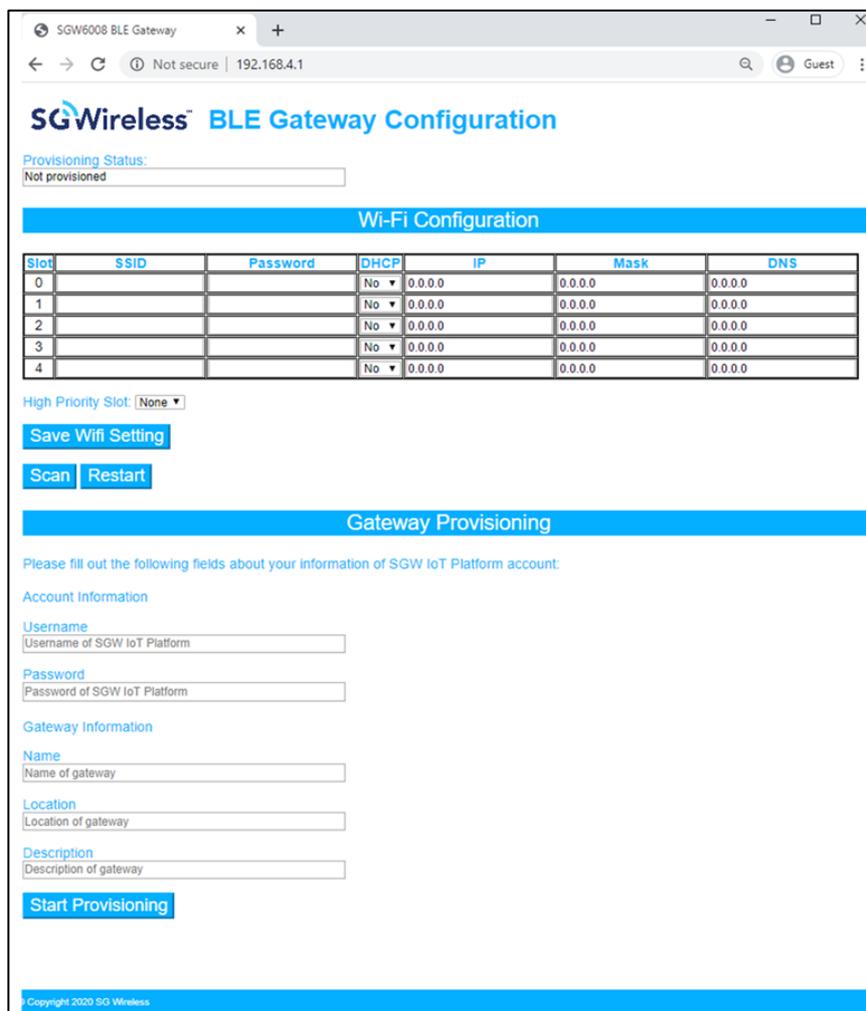
WiFi Performance	
Wireless Standard	IEEE 802.11b/g/n (single stream)
Radio Operating Frequencies	US band: Channel 1-11 EU band: Channel 1-13
Radio On-Air Data Rate	IEEE 802.11b, 1-11Mbps IEEE 802.11g, 6-54Mbps IEEE 802.11n(2.4GHz), 72.2Mbps
Maximum Transmit Power	17+/-2dBm
Antenna	Onboard PCB Antenna
Security	WPA/WPA2
Encryption	WEP/TKIP/AES

7. Getting Started

7.1 Wi-Fi Configuration and Provisioning of SGW6008

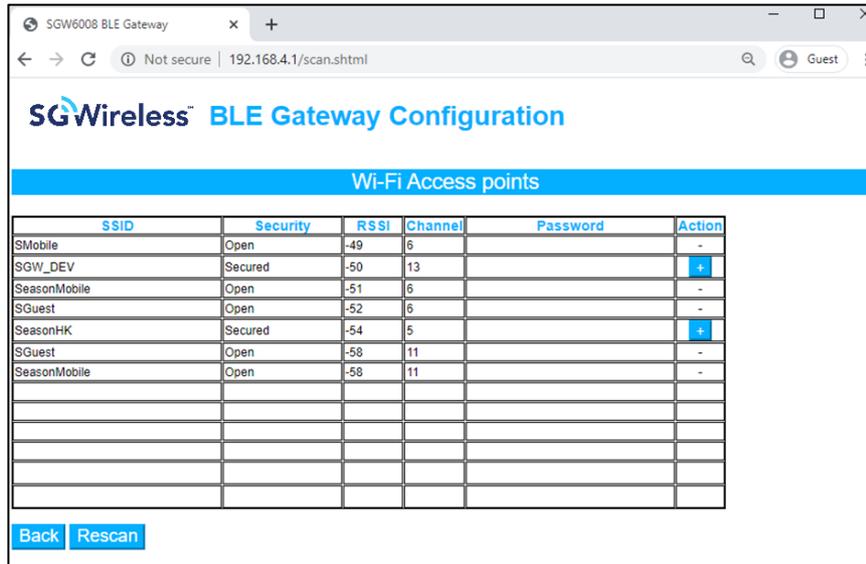
Wi-Fi configuration and gateway provisioning process must be finished first in order to use the functionalities of the SGW6008.

1. Power-up the SGW6008 BLE WiFi Gateway with micro-USB cable.
2. Connect the gateway with your computer or mobile device.
 - a. SSID of the SGW6008 BLE WiFi Gateway: "SGW6008_AA:BB:CC:DD:EE:FF"
 - b. Default password of the SGW6008 BLE WiFi Gateway: "SGWireless_23\$"
3. Launch your Internet browser, and go to the following web address: <http://192.168.4.1>

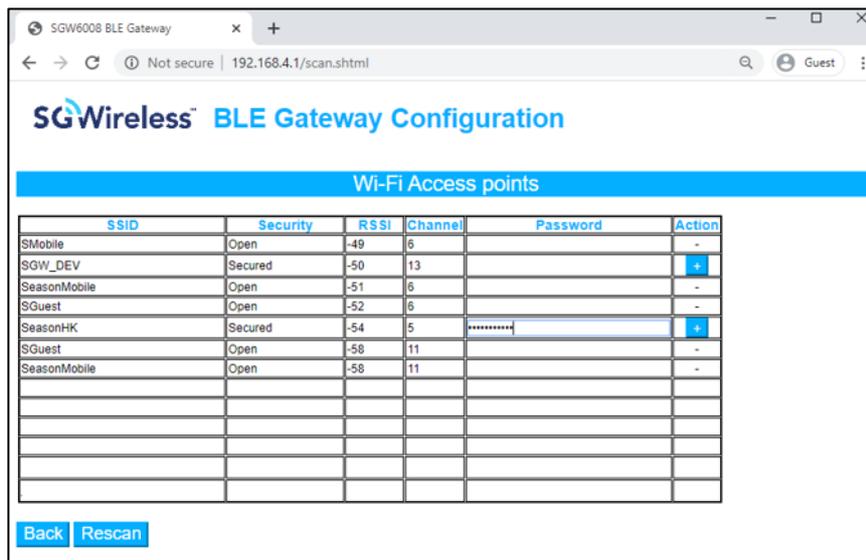


Wi-Fi configuration procedures:

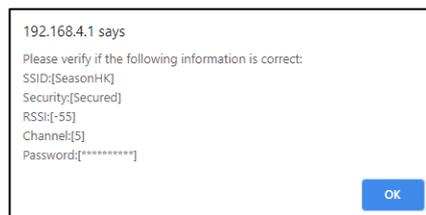
- Press “Scan” button in main page to scan for available Wi-Fi Access points in the area.



- Enter the password for target Wi-Fi access point and press “+” in Action.



- Press “OK” to confirm the setting in the Popup windows as shown below:



- If static IP is preferred, select “No” for DHCP and enter the IP address, Subnet Mask and DNS of the WiFi access point in the WI-FI configuration table. Press “Save Wifi Setting” button to update the setting.

* The “High Priority Slot” represents which saved SSID is the highest priority to connect with.

SGWireless™ BLE Gateway Configuration

Provisioning Status: Not provisioned

Slot	SSID	Password	DHCP	IP	Mask	DNS
0	SeasonHK	*****	Yes	0.0.0.0	0.0.0.0	0.0.0.0
1			Yes	0.0.0.0	0.0.0.0	0.0.0.0
2			No	0.0.0.0	0.0.0.0	0.0.0.0
3			No	0.0.0.0	0.0.0.0	0.0.0.0
4			No	0.0.0.0	0.0.0.0	0.0.0.0

High Priority Slot: [None]

Buttons: Save Wifi Setting, Scan, Restart

Gateway provisioning procedures:

- Fill in the SGW IoT Platform account and gateway information, then select “Start Provisioning”.

Gateway Provisioning

Please fill out the following fields about your information of SGW IoT Platform account:

Account Information

Username: sgwireless@sg-iot.com

Password: *****

Gateway Information

Name: SGW BLE Gateway

Location: Hong Kong

Description: SGW6008 BLE Gateway

Start Provisioning

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- Press “OK” to the prompt shown as below.

192.168.4.1 says

Confirm to provision Gateway?

Buttons: OK, Cancel

10. Upon confirmation, the gateway will exit AP mode and start the provisioning with SGW IoT Backend server. During the process, the configuration web page will be directed to SGW IoT Website. Please make sure your PC or mobile device has switched to networks with proper internet connection.



7.2 Edge Devices Provisioning

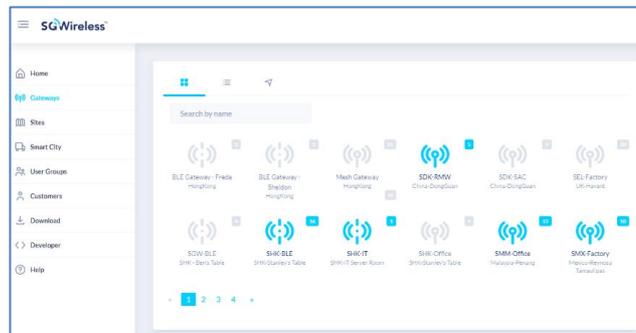
The SGW8130 BLE Sensor Tag can be connected to the SGW6008 BLE WiFi Gateway.



Provisioning procedures for edge devices SGW8130:

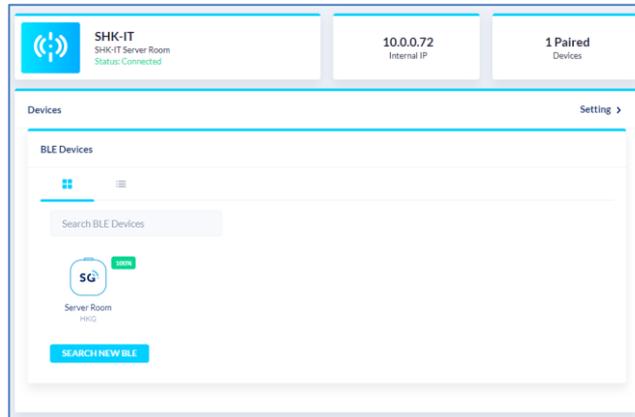
1. Log-in to SG Wireless IoT Dashboard

- a. Visit SG IoT Dashboard Page: "<https://www.sg-iot.com>" and log-in
- b. Click 'Gateway' and it will show all provisioned gateways. Select the target gateway to configure.

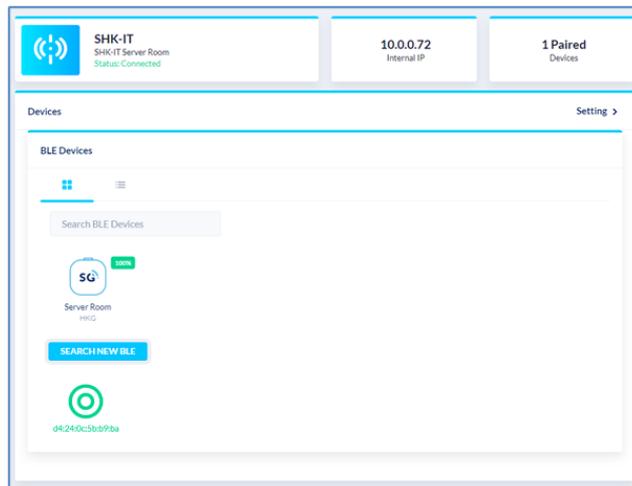


2. Search and Connect Edge Device

- a. Click 'SEACH NEW BLE' to search for nearby edge devices SGW8130.



- b. Click the Green Discovered BLE device icon which is showing the Mac Address of your target edge device



- c. Fill in the information of the edge device (name, location, description)

Connect BLE d4:24:0c:5b:b9:ba

Name

Location

Description

- d. Click "SUBMIT" to provision the edge device
- e. The registered edge device will be shown in the BLE Device's list

8. Getting Started

8.1 CE Statement

Regulatory Conformance (RED)

Hereby, (SG Wireless Limited) declares that the radio equipment type (SGW6008) is in compliance with Directive 2014/53/EU.



The full text of the EU declaration of conformity is available at the following website:

<https://www.sgwireless.com>

8.2 FCC Statement

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

NOTE: 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 or more 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

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

8.3 IC Statement

This device complies with RSS-247 of Industry Canada. 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.

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 ne 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.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

8.4 RF Exposure Information and Statement

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

9. Revision History

Revision	Date	Description
1.0	9 Mar, 2020	1 st Official release
1.1	27 Mar, 2020	Updated the WiFi configuration, gateway and tag provisioning section

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