RIGEL R1001GW BLE Sensor and Gateway User Manual

Contents

RIGEL

RIGEL R1001GW BLE Sensor andGateway

Specifications

- Device Type: Class B digital device
- Compliance: FCC Rules Part 15
- Radiation Exposure Limits: FCC compliant for an uncontrolled environment
- Minimum Distance: 20cm between the radiator and the body

Installation

To install the product, please follow these steps:

1. Select a suitable location for the equipment.
2. Ensure there is a minimum distance of 20cm between the radiator and your body during installation.
3. Connect the necessary cables and power supply to the equipment.
4. Ensure all connections are secure.

Operation

To operate the product, please adhere to the following guidelines:

- Ensure that the device is placed in an area with proper ventilation to prevent overheating.
- Do not attempt to modify or make any changes to the equipment without prior approval from the responsible party for compliance.
- Do not use the device in a manner that may cause harmful interference to other devices.
- The device must accept any interference received, including interference that may cause undesired operation.

Maintenance

To maintain the product's performance and safety, please follow these maintenance instructions:

- Regularly clean the device using a soft, dry cloth to remove dust and debris.
- Avoid exposing the equipment to excessive moisture, extreme temperatures, or direct sunlight.
- Keep the device away from liquids and avoid spilling any substances on it.

REVISION HISTORY

Version	Date	Author	Remarks
1.0	13-Mar-2023	YT	Release

INTRODUCTION

This user manual is designed to guide users through the process o f using the BLE sensor and BLE Gateway to measure object distance from on·board Tof sensor, relative humidity and temperature data. The BLE sensor is a coin battery-powered device that repeatedly measures and reports sensor data to the gateway every 15 minutes via Bluetooth.

HARDWARE
The following photos show the BLE sensors and BLE gateway PCBAs

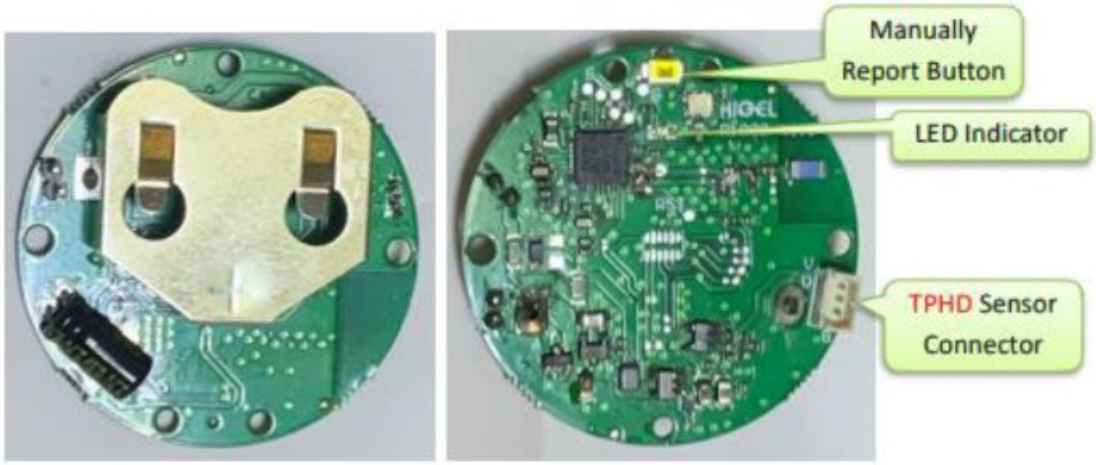

Figure 1 Relative Temperature and Humidity (TPHD) Sensor

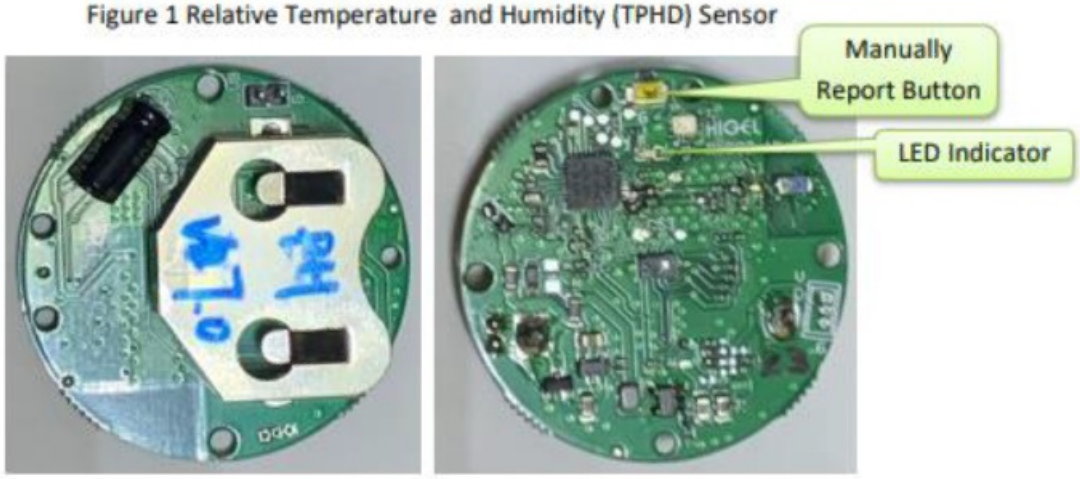

Figure 2 BLE ToF Sensor for PH/WB/SB Application

1.

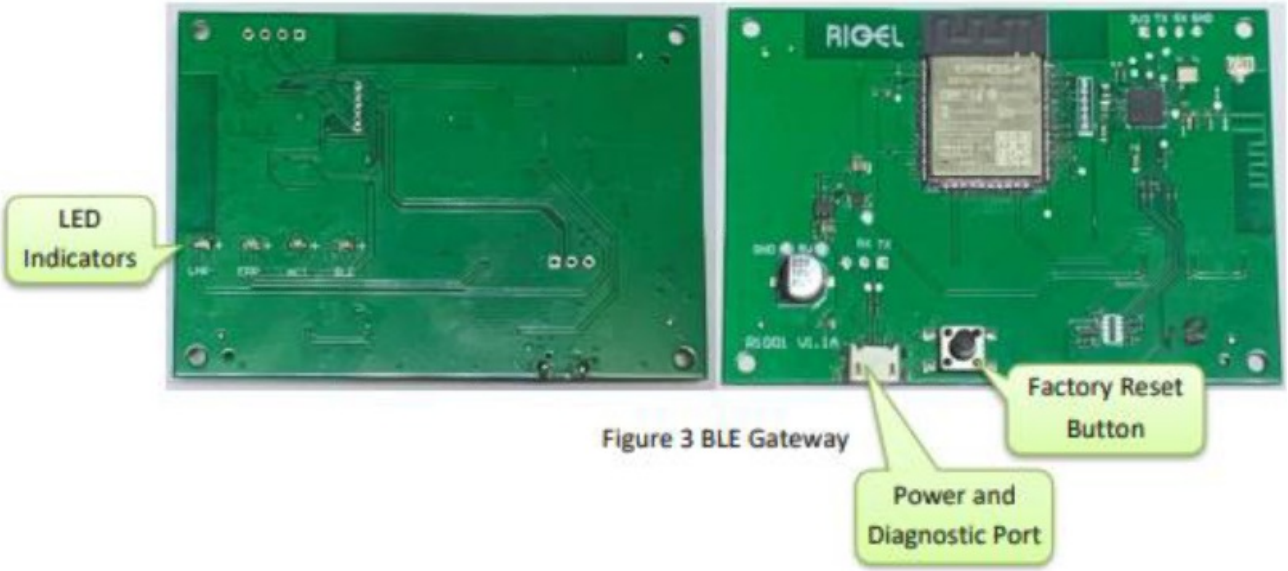

Figure 3 BLE Gateway

Figure 1 shows the TPHD sensor PCBA interfaces:

Figure 1 shows the TPHO senso, PCBA interraces:

- Manually report button: to Wgger measurement and report after pressing the button 60 seconds

  LEO indicator: to indicate the manual measure and report

  TPHD sensol' connector: to connect with a re.latlve tempetature and humidity sensor

2. Figure 2 shows the ToF sensor PCBA interfaces:

- Manually report button: to ltigger measurement and ,report after pressing the button 60 seconds
- LEO indicatot : to indicate the manual measure and repol't

3. Figure 3 shows the BLE Gateway PCBA interfaces:
   LEO indicators:

   - LNK: link {Blue LEO)
   - Blinking fast (10Hz): the gateway does not have the route(s setting (SSIO and password). The gateway is in smart configu1c1:tion mode and wailing for the mobile App to configure the
   - gateway to connect to a fOute(
   - Blink slow (1Ht): the gateway has been configured p feviously, and it Is trying to connect to the fOutet
   - On/ no blinking: the gateway is alfeady connected to the faucet. Note: the (Outef might not be connected to the Intemet This INK Indicator only shows the link status between the gateway and the flute
   - ERR: Et fOf {Red LEO)
   - Blinking {1Hzj: the gateway has not established a connKtion to the MQTT setver
   - OFF: the gateway establishe-d a connection to the MQTT setver
   - On/ no.blinking: hardware failure, the ESP32 failed to communicate with the TLSR8258 c-hip
   - ACT: Activity (Green LEO) Blink once: the ESP32 communicates with TtSR8258 chip
   - BLE: Bluetooth (GrHn LEO)
     The Tt.SR8258 receives a valid report pact.et from a sensor
   - Power and d iagnostic port: this port is used to power the gateway. Wi th a USS.to-UART cable, us.ets can download firmware and diagnose the gateway
   - Factory reset: press and hold for 6 seconds, and the gateway goes to factory reset mode.

MOBILE APP

The following photo shows a mobile App to configure the gateway

GATEWAY SETUP

The following shows the steps to set up the BLE gateway:

- Powet up the SLE gateway
- Make sue the gateway blinks fast (l0Hz)
  - If not blink fast, press and hold the 'factory, reset button' to, 6 seconds. Then the gateway blinks fast
- connect the mobile phone to the 2.4GHt Wi,•Fi ,outer
- Run the mobile app "app_wifi_ligh t (demo application)"

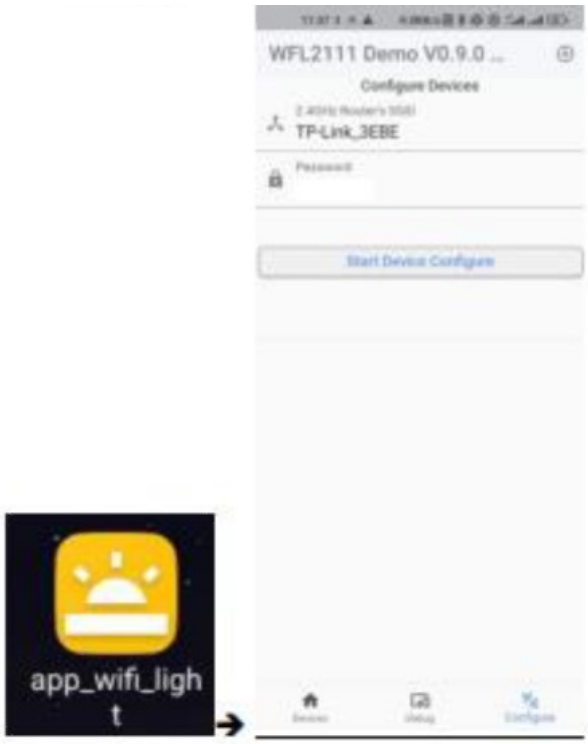

Figure 4 Mobile App Icon and Configure Page

- Fill up 2.4GH1 Routef"s SSIO and password
- Clid; 'Start Device Configure'
- Observer the gateway's LNK indicator, when the device receives the mobile App's settings, the LNK indicator blinks slow {1Hz}
- After the LNK indicator LS always on (no. blinking), this means the gateway connects to the router successfully
- Then observe"ve ERR indicator', when the ERR indicator is off (no blinking), this means the gateway established a connection to the MQTI server

FCC Warning

Any Changes or modifications not expressly approved by the party responsible for compliance 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. 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.

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 the receiver.
- Connect the equipment to 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 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.

Documents / Resources

	RIGEL R1001GW BLE Sensor and Gateway [pdf] User Manual R1001GW BLE Sensor and Gateway, R1001GW, BLE Sensor and Gateway, Sensor and Gateway, Gateway

References

- User Manual