ecowitt®

Wi-Fi Weather Station Gateway

With built-in Temperature, Humidity and Barometric Sensor

Manual

Model: GW1200

https://s.ecowitt.com/YVWM3V

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1 Introduction

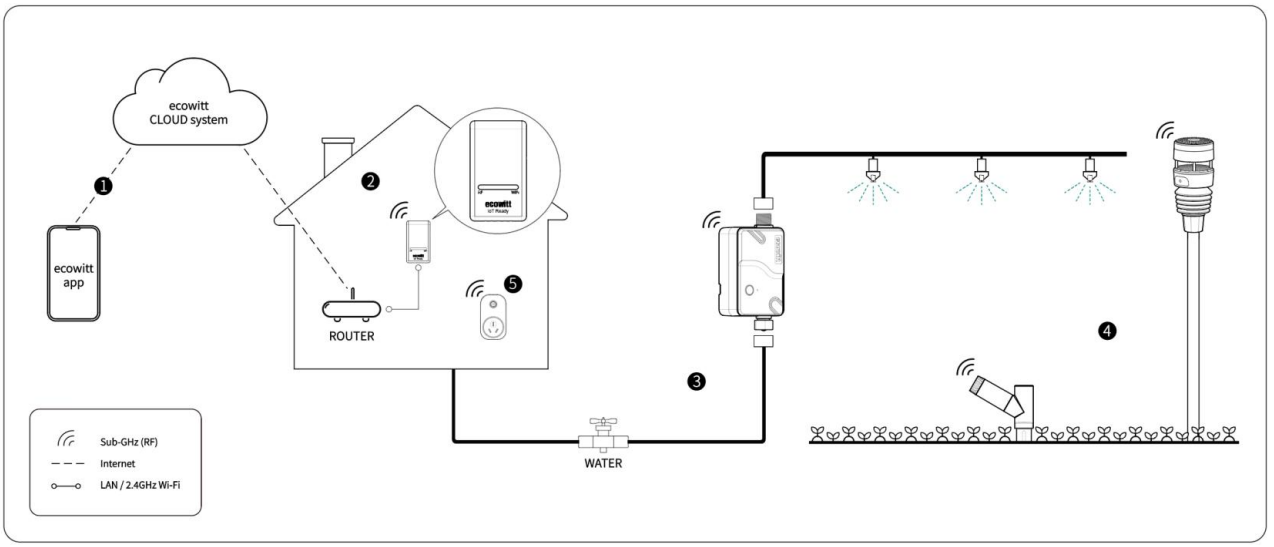


Figure 1 How Ecowitt system works

Thank you for purchasing this GW1200 Wi-Fi Weather Station Gateway, with built-in temperature, humidity, and barometric sensors. It can also handle all the Ecowitt sensors developed. By upgrading firmware, future sensors developed can also be hosted, and this made the gateway an extremely flexible Ecowitt ecosystem possible.
To ensure the best product performance, please read this manual and retain it for future reference.

2 Installation

2.1 Package List

QTY	Item Description
1	USB Wi-Fi Gateway
1	USB extension cable for powering the gateway
1	Cable clip
1	Quick start

Table 1 Package content

Note: The gateway must be plugged into a USB (2.0 or later) port for its power supply. The USB extension cable (USB type A - Male straight to female straight; included) should be used so that the gateway is sitting further from AC adapters which is a heat source as well as EMI interference source. The using of this USB extension cable will make the gateway perform better in terms of radio signal reception, and measure indoor temperature, and humidity more accurately.

2.2 Wi-Fi Configuration

2.2.1 Power Up

You need to prepare a power adapter with a USB port in advance. Power the GW1200 up with the USB extension cable. Note: **DO NOT** directly plug the GW1200 into the power outlet.

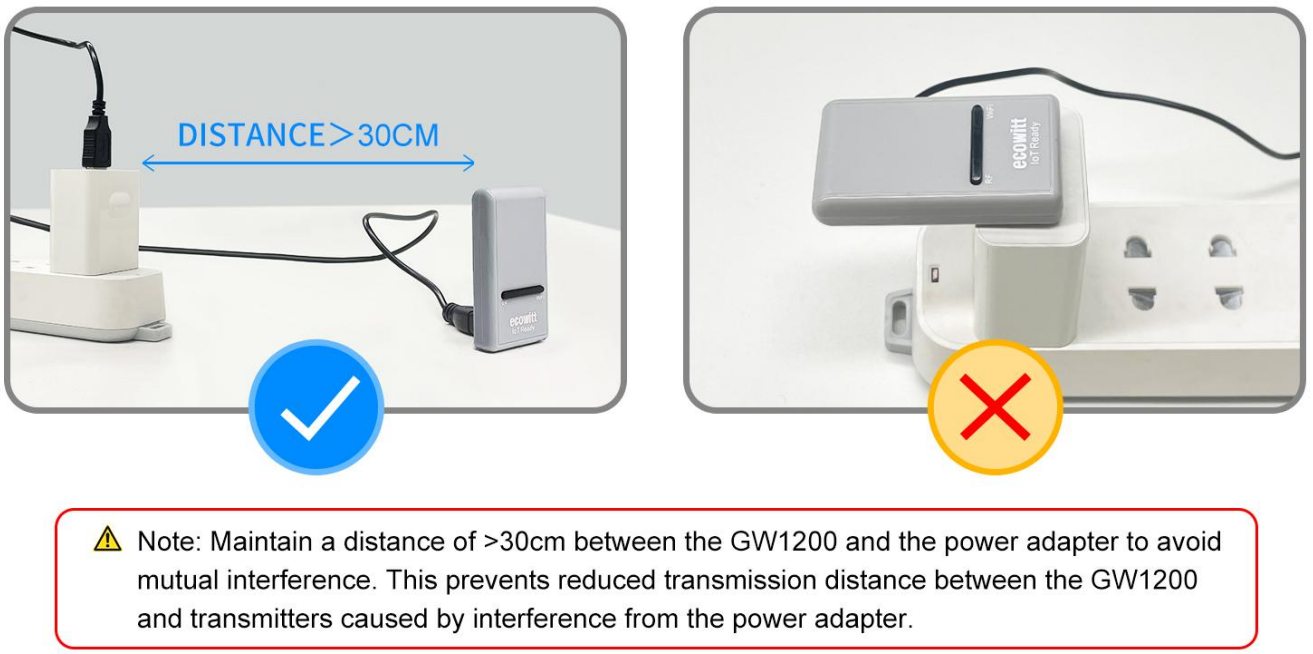


Figure 2 Installation Illustration for Power-up

2.2.2 Install Ecowitt APP:

Visit the App Store or Google Play Store or scan the QR code below to download the free Ecowitt App.

Open Ecowitt App, follow the on-screen setup instructions to create an account, add new weather station, and follow **Section 2.2.3** below to connect your station to your Wi-Fi network.

Figure 3 Download Ecowitt App

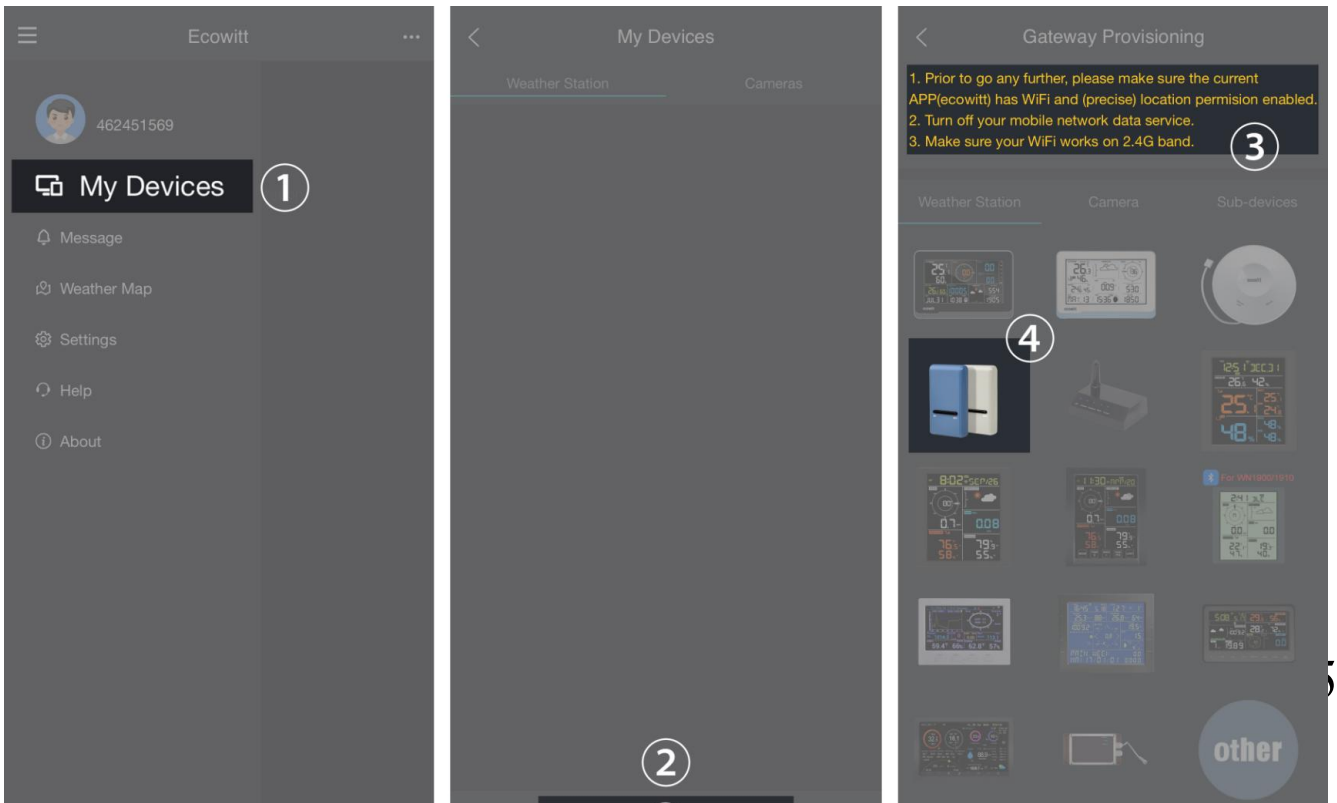
Note: For **section 2.2.3** below, you'll need your Wi-Fi network name (SSID) and password. Make sure your mobile device is connected to the same Wi-Fi network.

2.2.3 Gateway Wi-Fi Configuration

There are 2 ways to complete Wi-Fi configuration, Ecowitt App and Web Page 192.168.4.1.

2.2.3.1 Through Ecowitt APP

①Open Ecowitt App, click "Add New Weather Station", click GW1200 icon, and choose WiFi Provisioning：



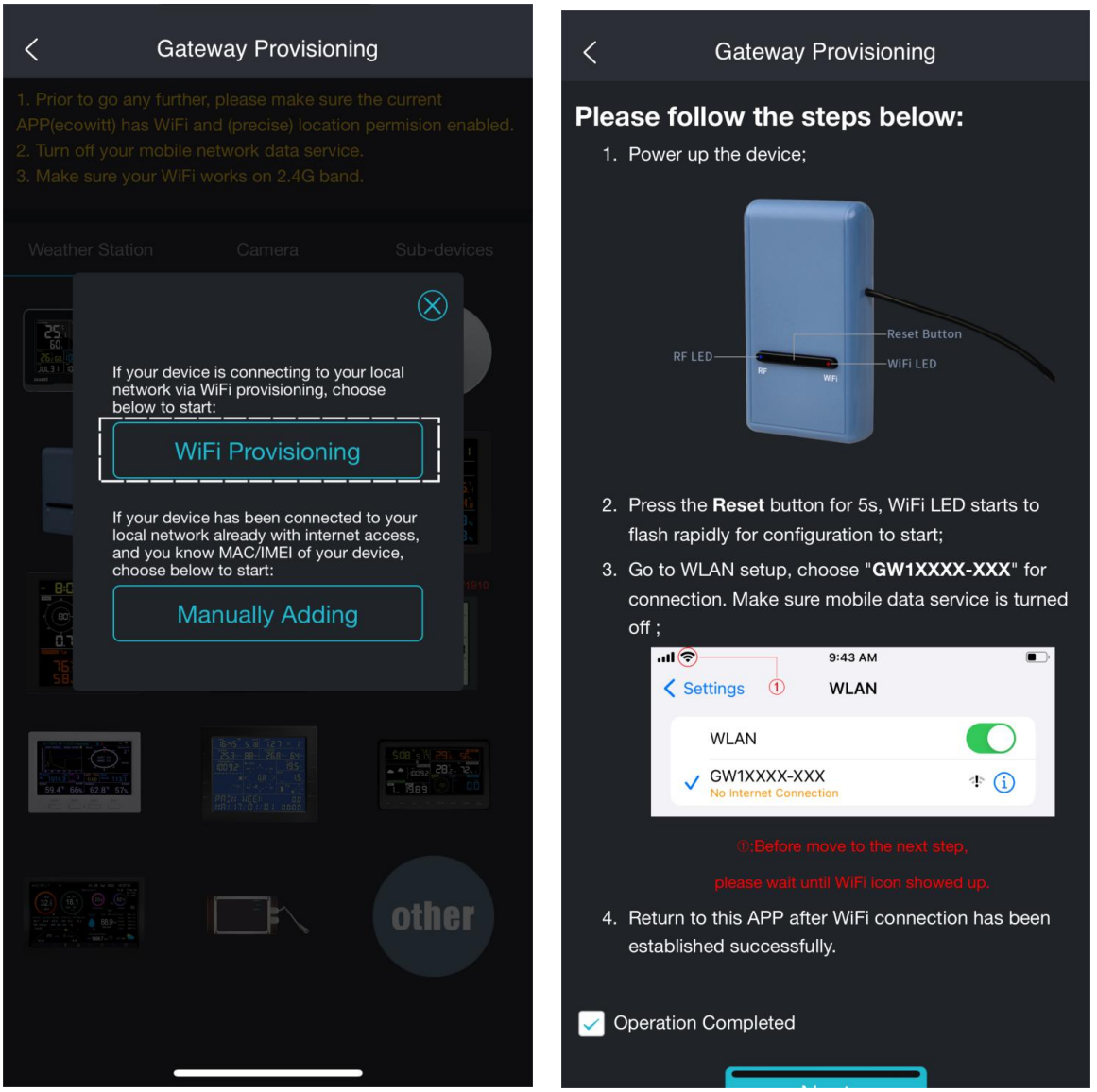


Figure 4 APP Wi-Fi Configuration Operations

② Long press GW1200's button for more than 5s will trigger to turn on Soft-AP (GW1200's hotspot), red Wi-Fi LED will flash rapidly.

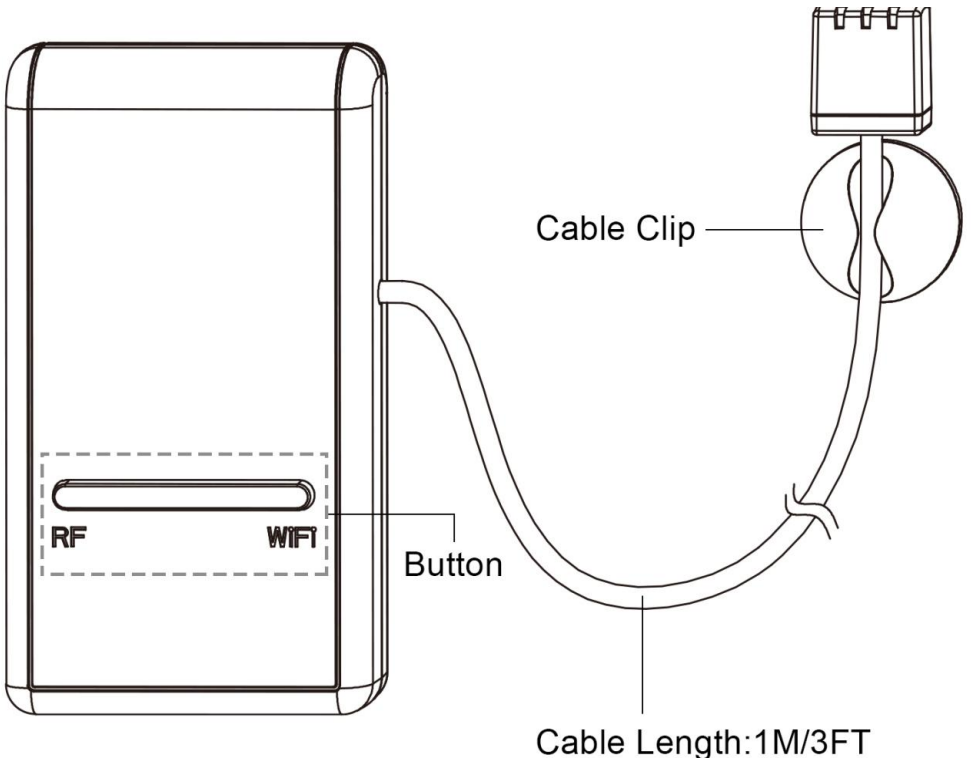


Figure 5 Button Illustration

③ Use your mobile phone to connect to the hotspot "GW1200x-WIFIxxxx".

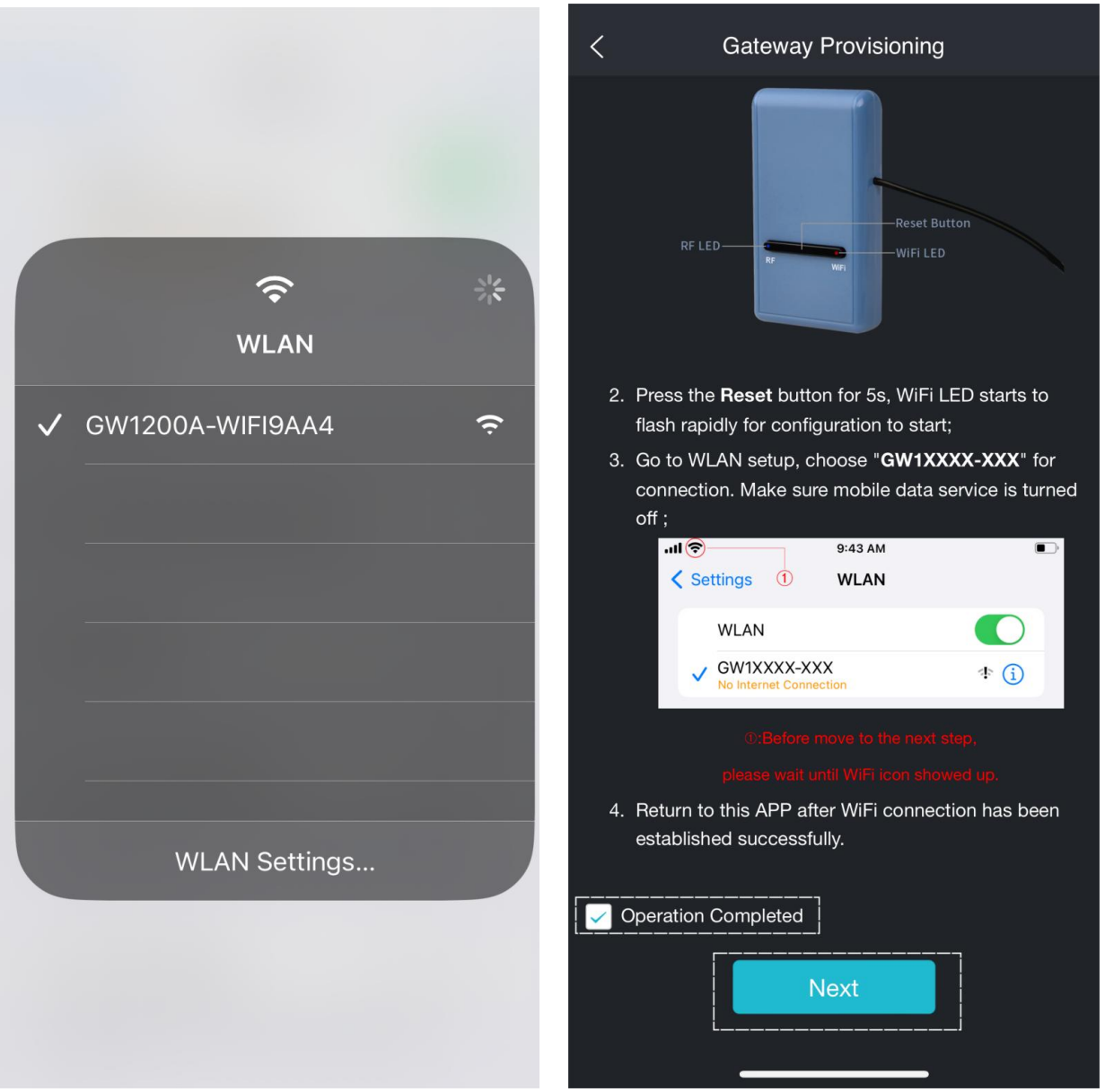


Figure 6

④Allow location access, recommend selecting "While Using the App".

⑤Fill in the Wi-Fi SSID and Password.

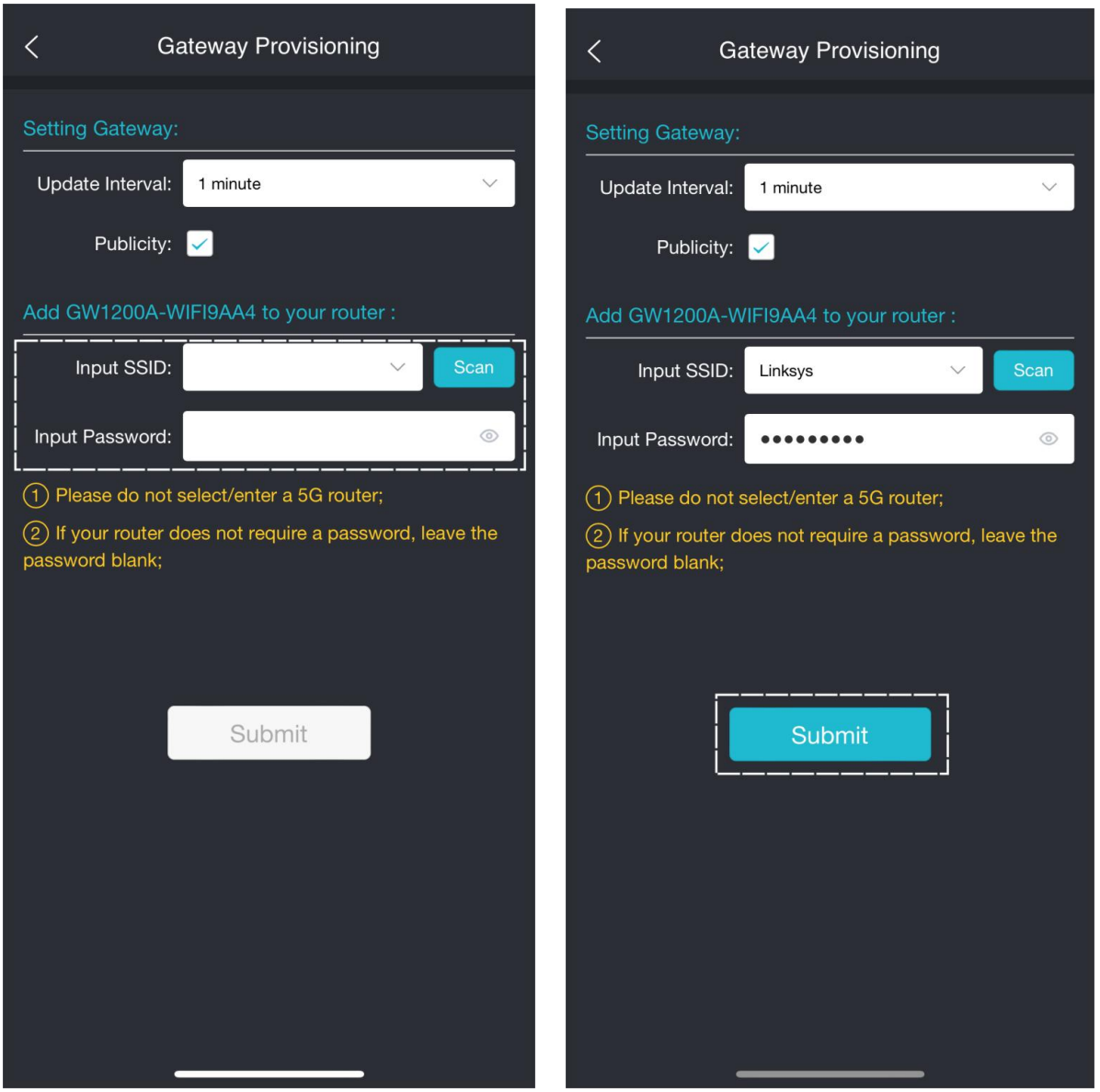


Figure 7

⑥After the gateway setup is successful. Switch to your usual Wi-Fi. GW1200 has been successfully added to the App, and you can view the weather data on the App.

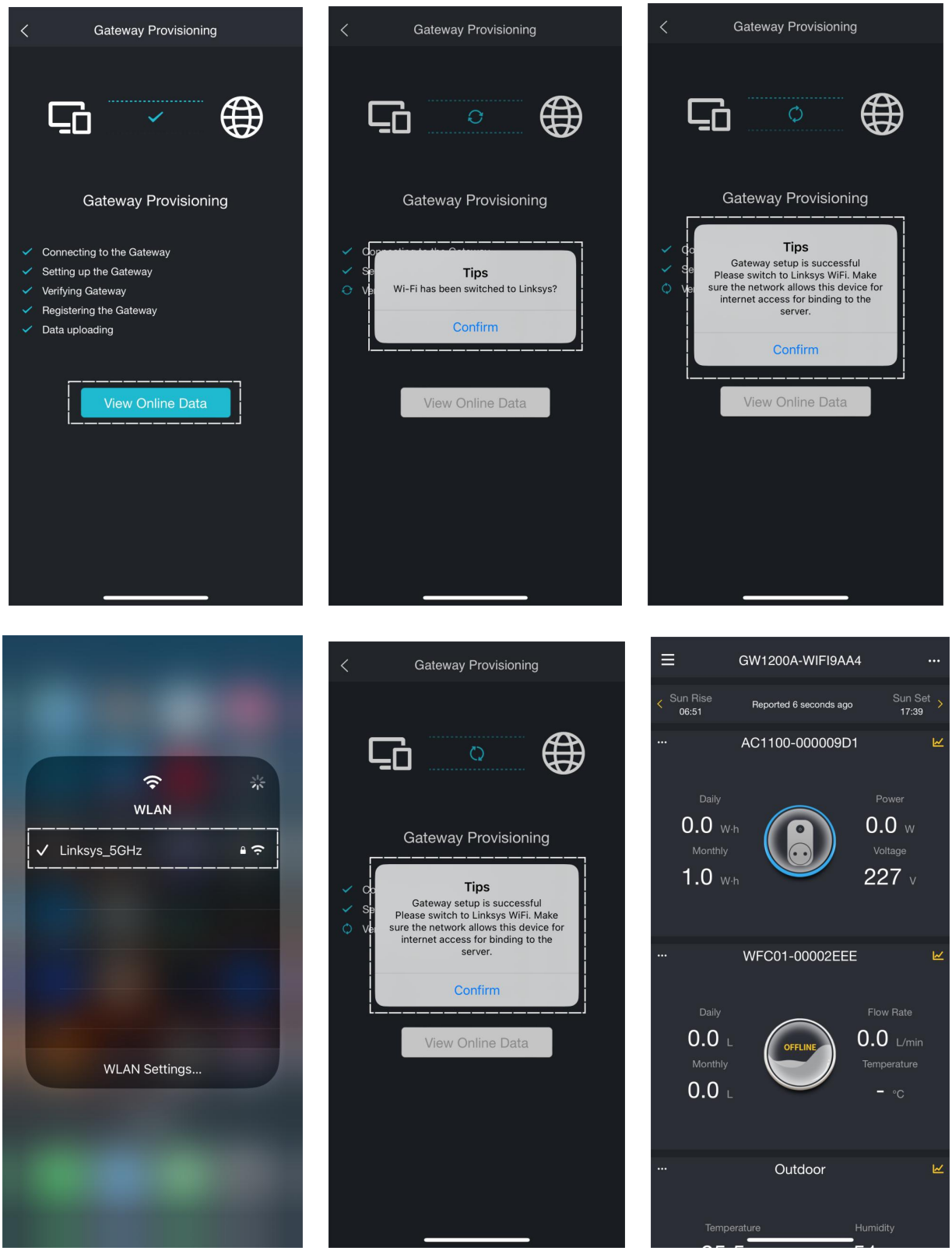

Gateway Provisioning
Gateway Provisioning
Connecting to the Gateway
Setting up the Gateway
Verifying Gateway
Registering the Gateway
Data uploading
View Online Data
Gateway Provisioning
Gateway Provisioning
Tips
Wi-Fi has been switched to Linksys?
Confirm
View Online Data
Gateway Provisioning
Gateway Provisioning
Tips
Gateway setup is successful
Please switch to Linksys WiFi. Make sure the network allows this device for internet access for binding to the server.
Confirm
View Online Data
WLAN
Linksys_5GHz
WLAN Settings...
Gateway Provisioning
Gateway Provisioning
Tips
Gateway setup is successful
Please switch to Linksys WiFi. Make sure the network allows this device for internet access for binding to the server.
Confirm
View Online Data
GW1200A-WIFI9AA4
Sun Rise 06:51
Reported 6 seconds ago
Sun Set 17:39
AC1100-000009D1
Daily
0.0 W·h
Monthly
1.0 W·h
Power
0.0 W
Voltage
227 V
WFC01-00002EEE
Daily
0.0 L
Monthly
0.0 L
OFFLINE
Flow Rate
0.0 L/min
Temperature
- °C
Outdoor
Temperature
Humidity

Figure 8

2.2.3.2 Through Web Page

If you fail to configure the device network settings using the Ecowitt app, we recommend using the SETUP Via Embeded Webpage.

①WiFi configuration

1. Ensure that your mobile phone or laptop is connected to the hotspot emitted by the device.

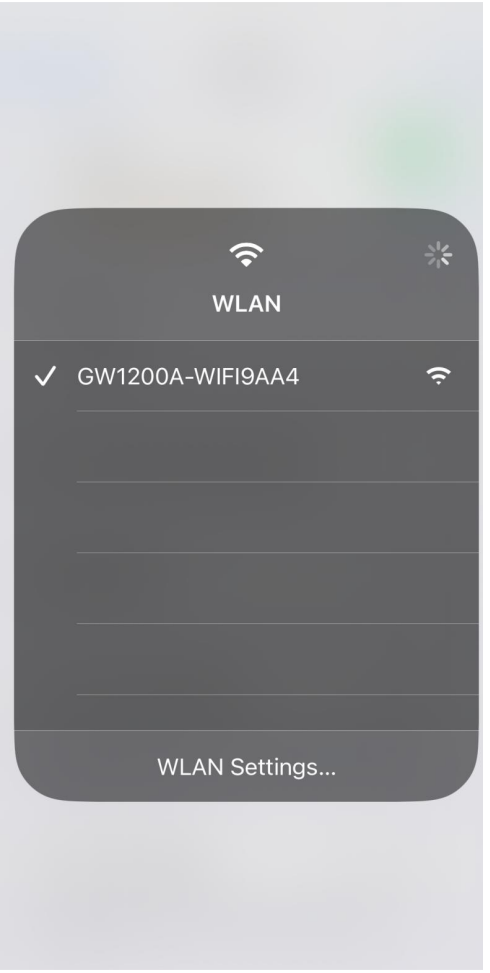


Figure 9

2. Open your web browser and enter the following URL: 192.168.4.1. No password is set by default. Click Login.

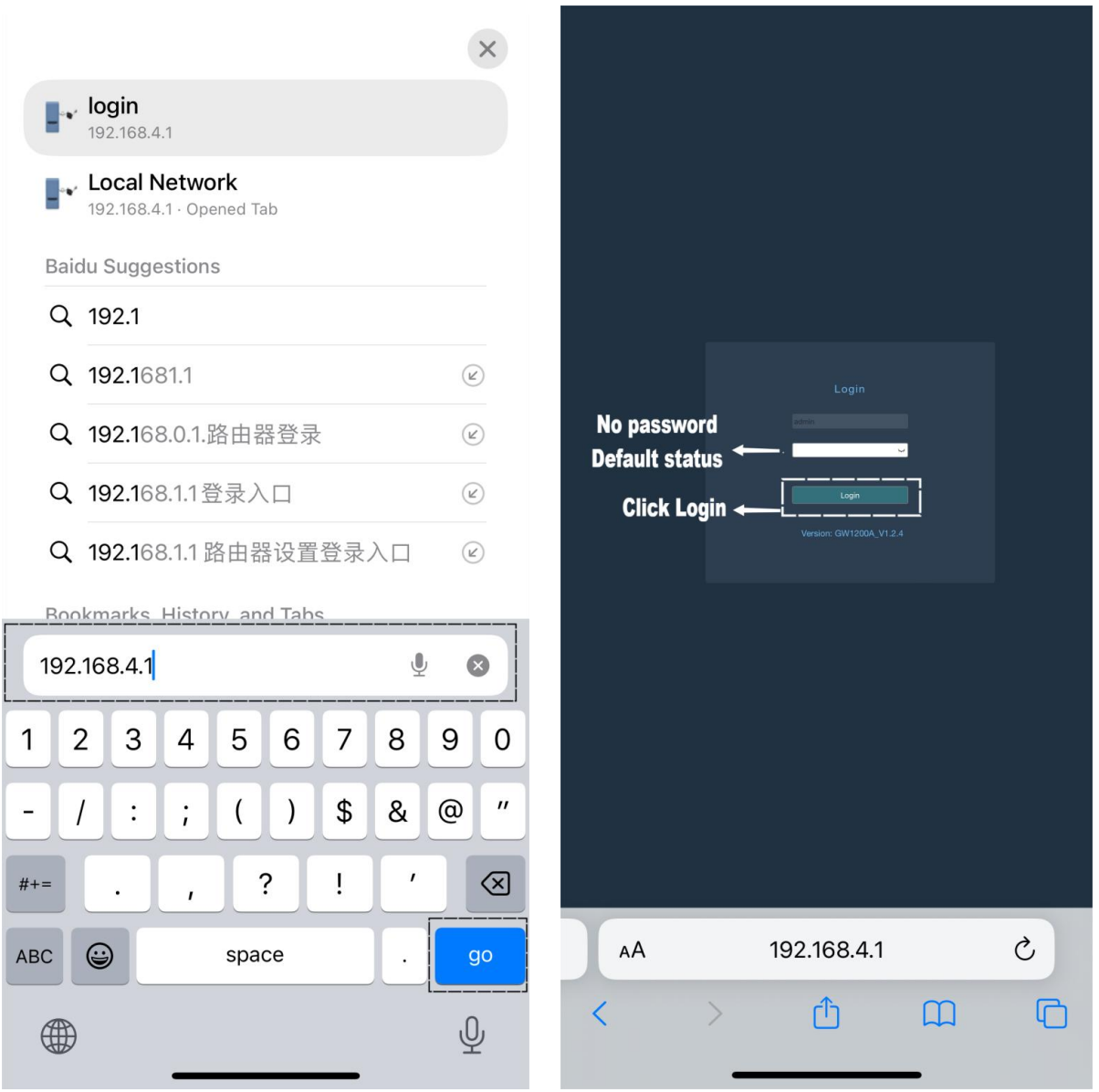


Figure 10

3. Click Local Network. Input the name and password of the router to which you want to connect. Click Apply.

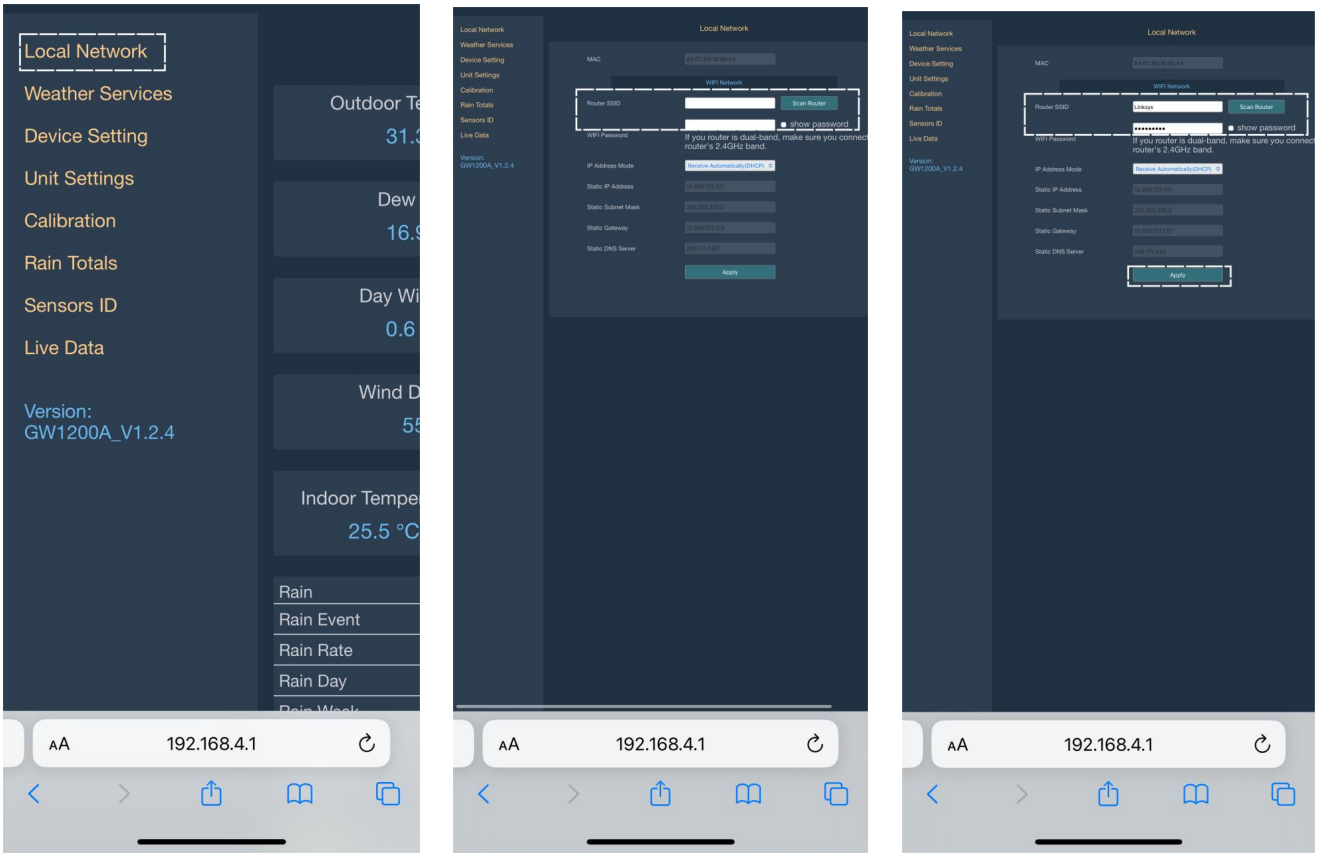


Figure 11

4. Record the MAC address.

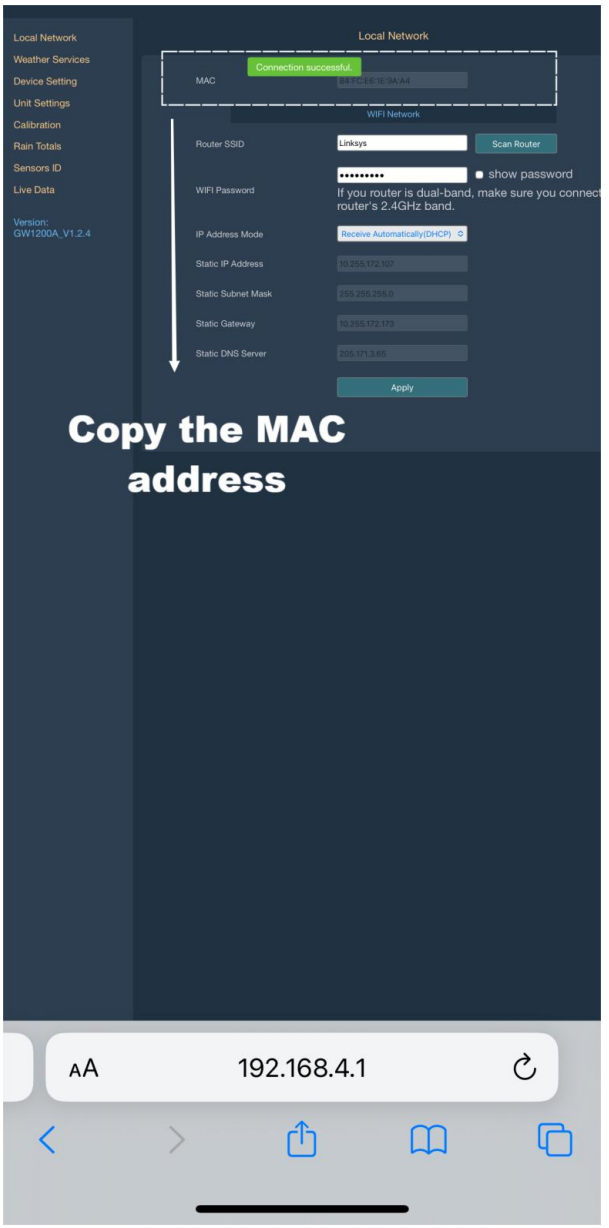
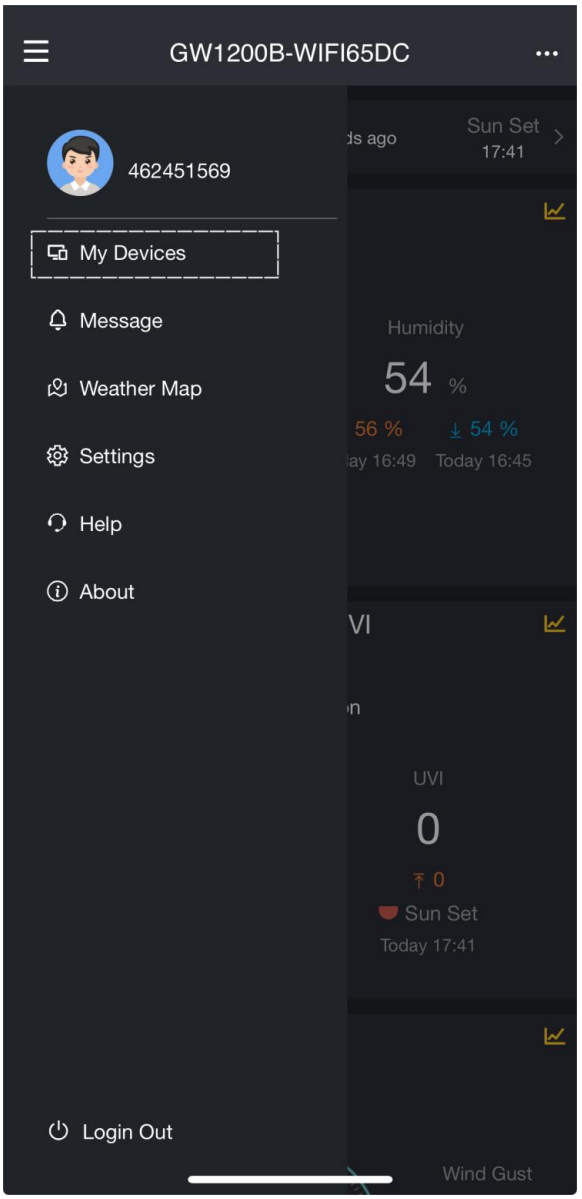
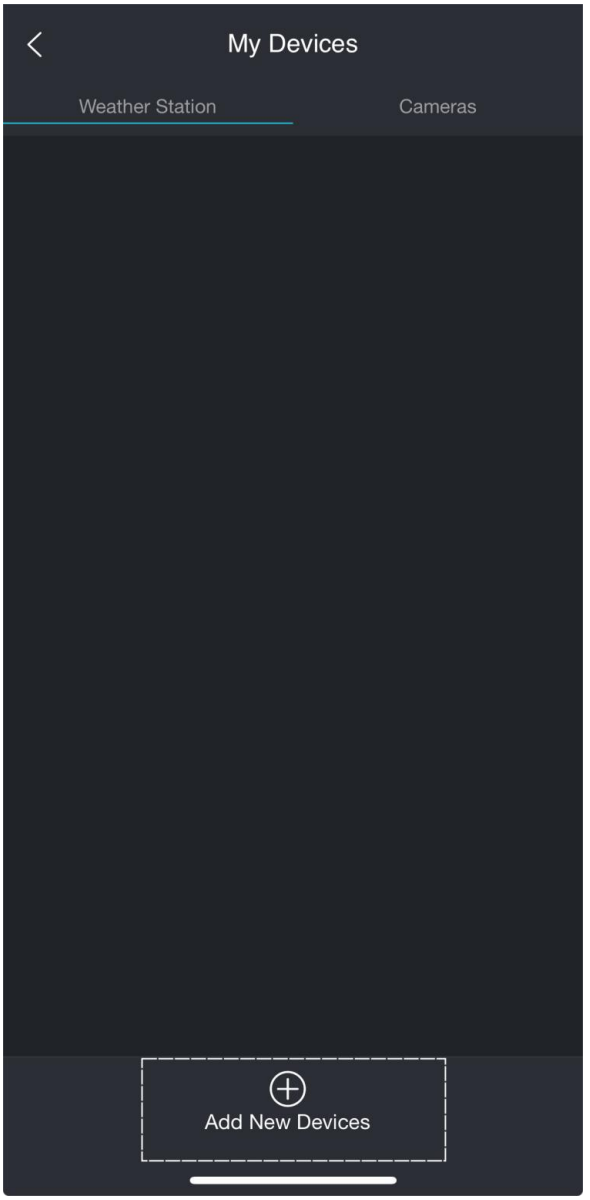


Figure 12

②Add the GW1200 to your Ecowitt Account

1. Open Ecowitt App, click "Add New Weather Station", click Other, and choose Manually Adding：


GW1200B-WIFI65DC
462451569
My Devices
Message
Weather Map
Settings
Help
About
Login Out
Sun Set
17:41
Humidity
54 %
56 %
54 %
Today 16:45
UVI
0
0
Sun Set
Today 17:41
Wind Gust


My Devices
Weather Station
Cameras
Add New Devices

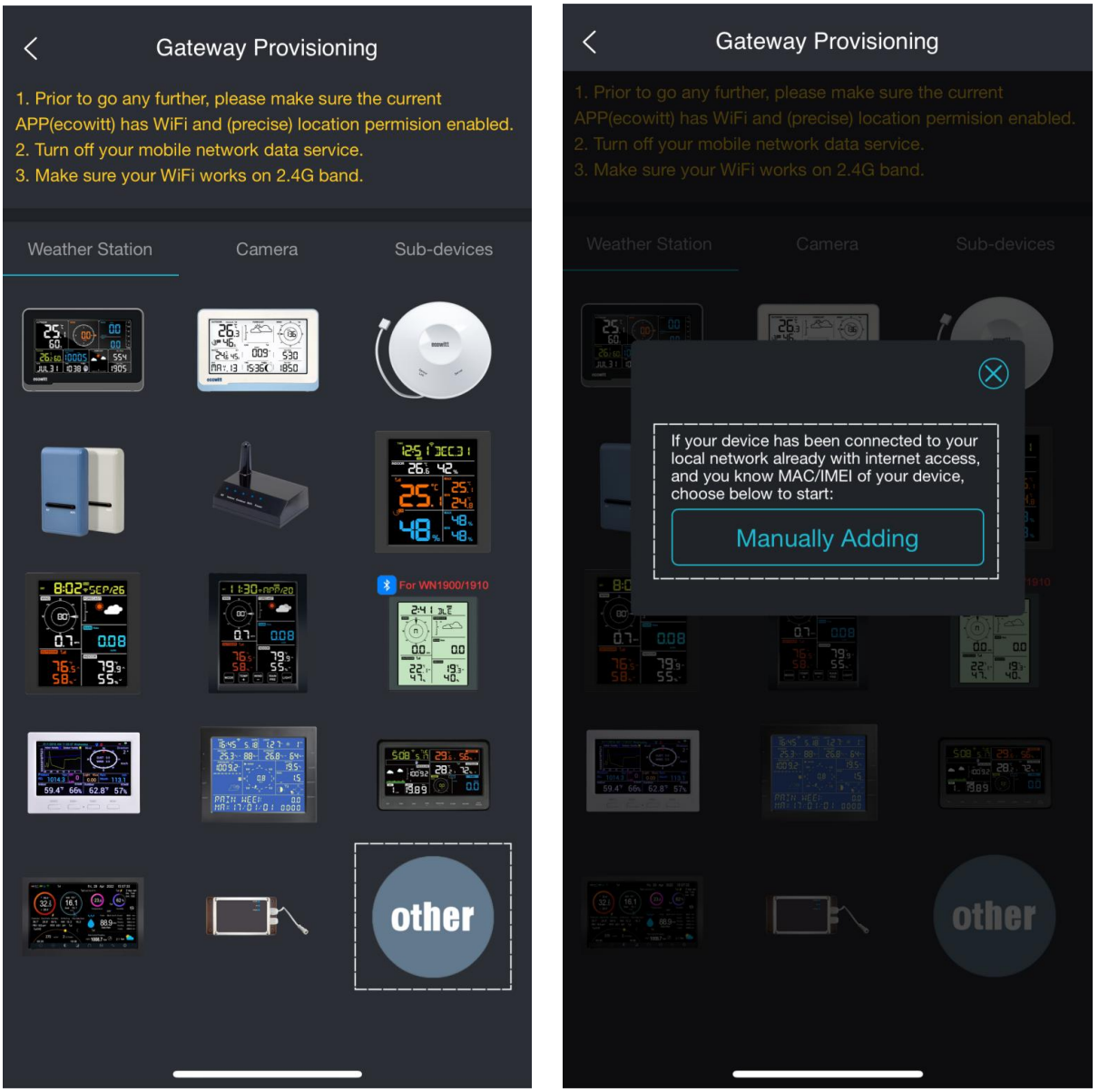

Gateway Provisioning
1. Prior to go any further, please make sure the current APP(ecowitt) has WiFi and (precise) location permision enabled.
2. Turn off your mobile network data service.
3. Make sure your WiFi works on 2.4G band.
Weather Station
Camera
Sub-devices
For WN1900/1910
other
Gateway Provisioning
1. Prior to go any further, please make sure the current APP(ecowitt) has WiFi and (precise) location permision enabled.
2. Turn off your mobile network data service.
3. Make sure your WiFi works on 2.4G band.
Weather Station
Camera
Sub-devices
If your device has been connected to your local network already with internet access, and you know MAC/IMEI of your device, choose below to start:
Manually Adding
other

Figure 13

2. Edit the Device Name and paste the MAC address copied into the box, and click "Save", then you can view the data on the App.

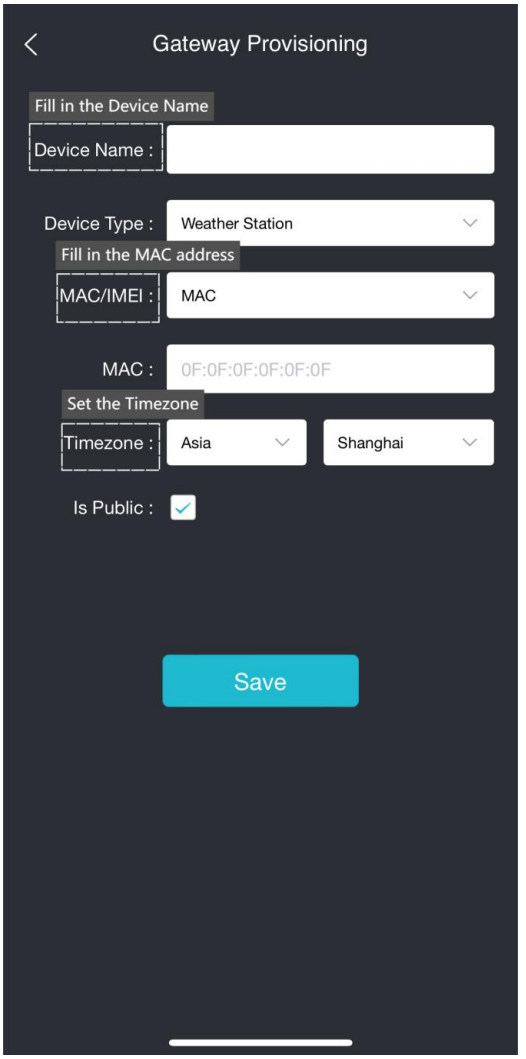


Figure 14

2.3 Device Location, Timezone, DST, and Data Public

After completing the Wi-Fi configuration, follow these steps for Device precise location, Timezone, DST (Daylight Saving Time), and Data public settings.

1. Click on "weather station".

2. Click on the "···" icon in the upper right corner of the gateway module.
3. Set the Device's precise location and Timezone on this interface.
4. Tick "Auto DST" and "Is Public" when necessary.
5. Click "Save", then reboot the device, it will automatically synchronize time and DST.

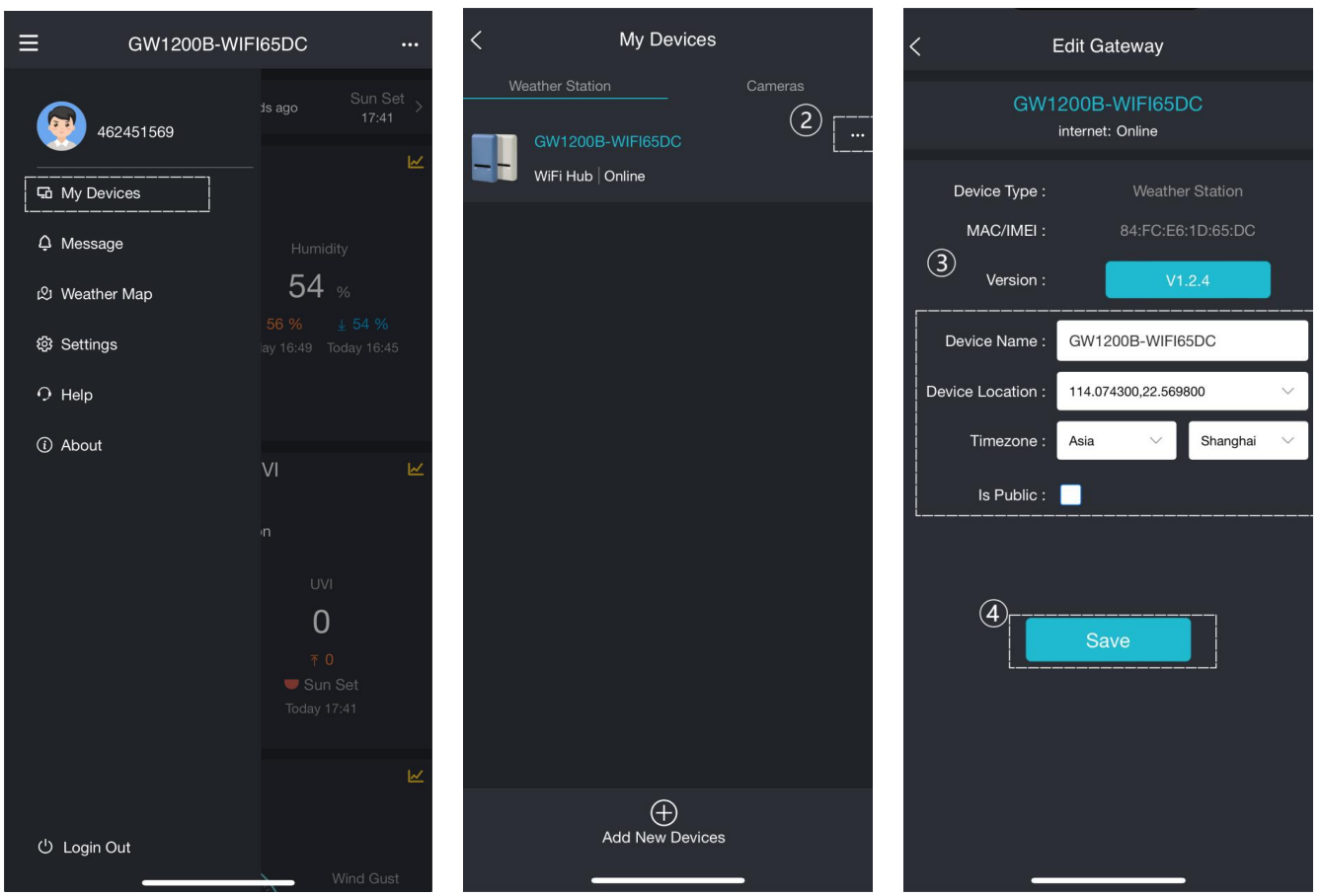


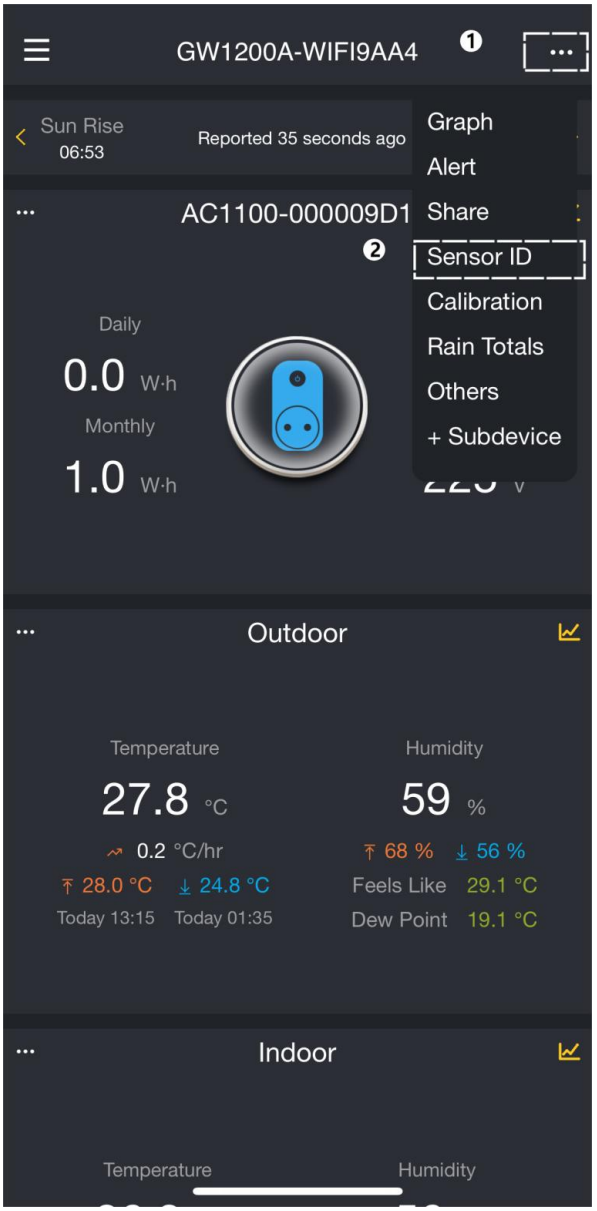
Figure 15

2.4 Manage Sensors

2.4.1 Add a Sensor

To pair the optional sensors (refer to **Section 5** for more optional sensors) with the GW1200, please do as follows:

1. Place the optional sensor next to the receiver.
2. Power the sensor on and wait for 1-2 minutes.
3. Check whether the GW1200 will pick up the sensor data automatically and display it on app.
4. If data is not received, try the following: Make sure the phone and GW1200 are connected to the same Wi-Fi network, open Ecowitt App, find Sensor ID, and enter the Edit Gateway page.
5. In the Edit Gateway page, find the sensor you want to pair - select the ID number box and register it.
6. Once successful, you may return to the main interface to check the data.
7. If you know exactly the sensor ID, and want the GW1200 to pair that sensor only, you may enter the sensor ID, and save the change to make it effective.



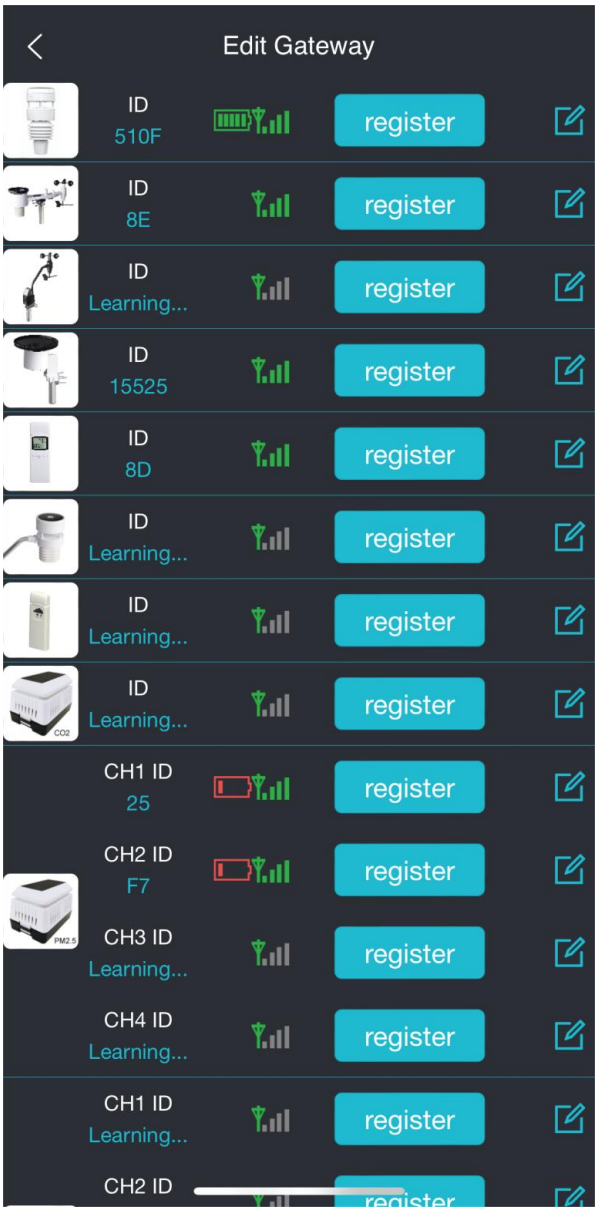


Figure 16 Sensor ID page

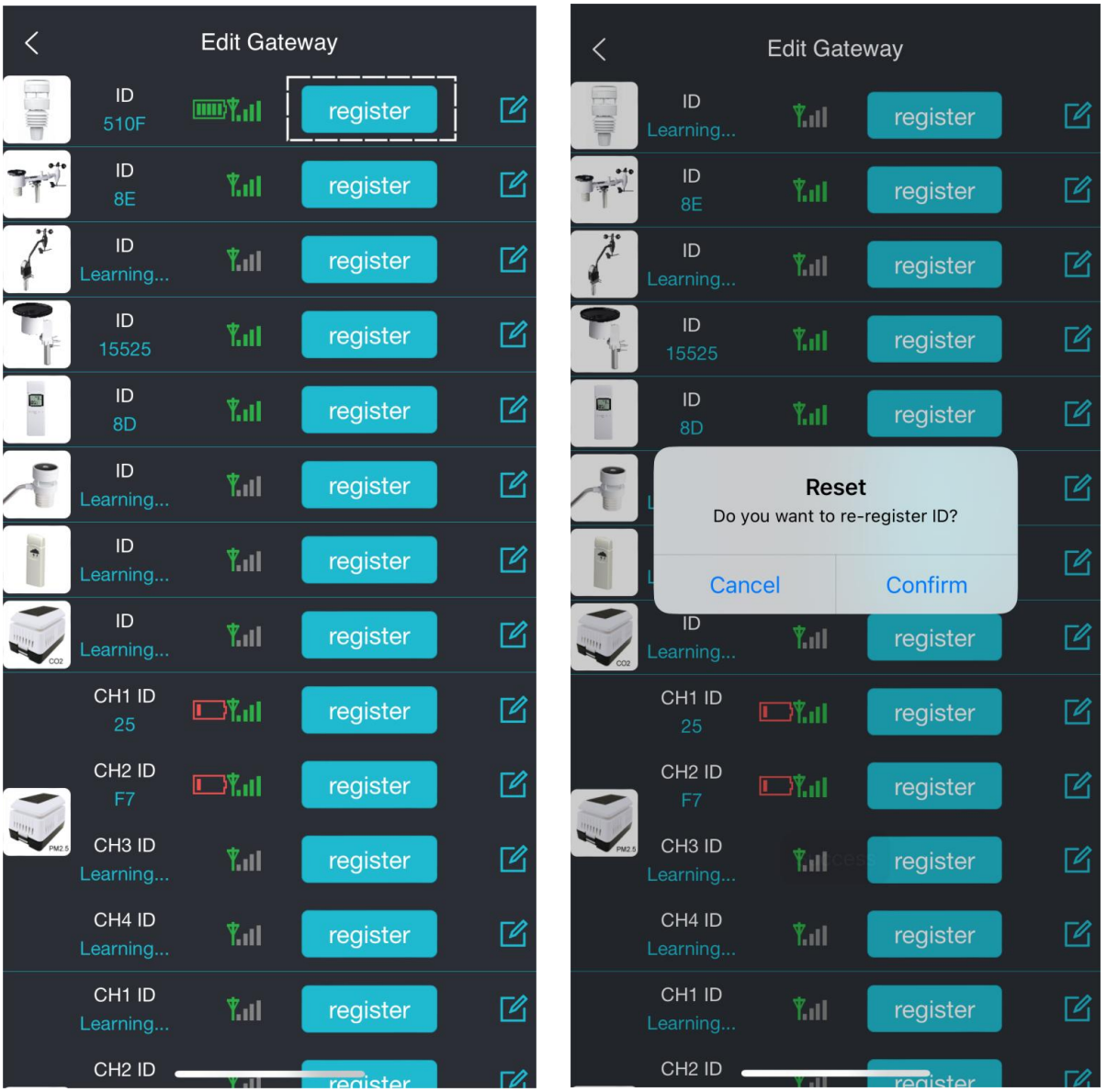


Figure 17 Re-register sensor

2.4.2 Disable (Stop) a Sensor

If you have more than one gateway to receive data from multiple transmitters, the following actions can help you prevent the gateway from automatically receiving data transmitted by other already registered transmitters.

If you have 2 or more transmitters of same model, and GW1200 receives data from one of them, but you want to receive data from another one.

1. Tap icon of editing.
2. Manually input the sensor ID of the transmitter you wish to receive on this interface
3. Set its status to Enabled.
4. Tap "Save" to receive data successfully.

When the GW1200 receives data from unwanted transmitter.

1. Tap icon of editing.

2. Manually input the default sensor ID to lock onto this sensor.
3. Set its status to Disabled.
4. Tap "Save" to apply this lock immediately.

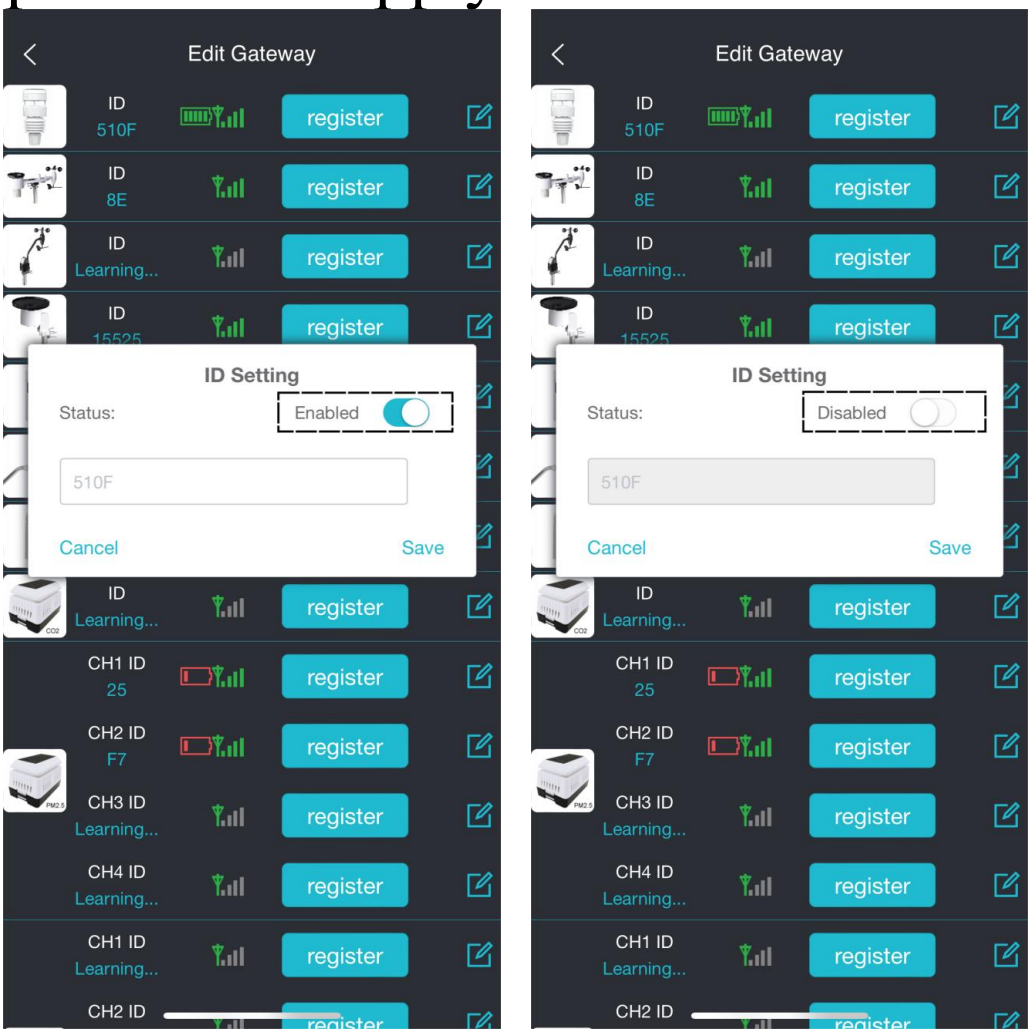
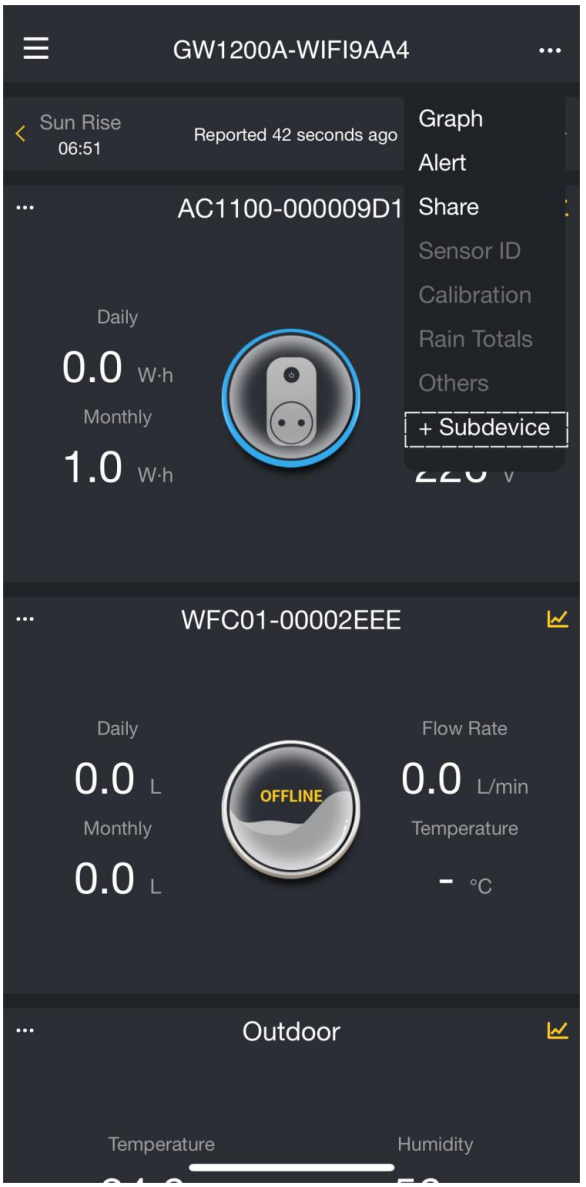
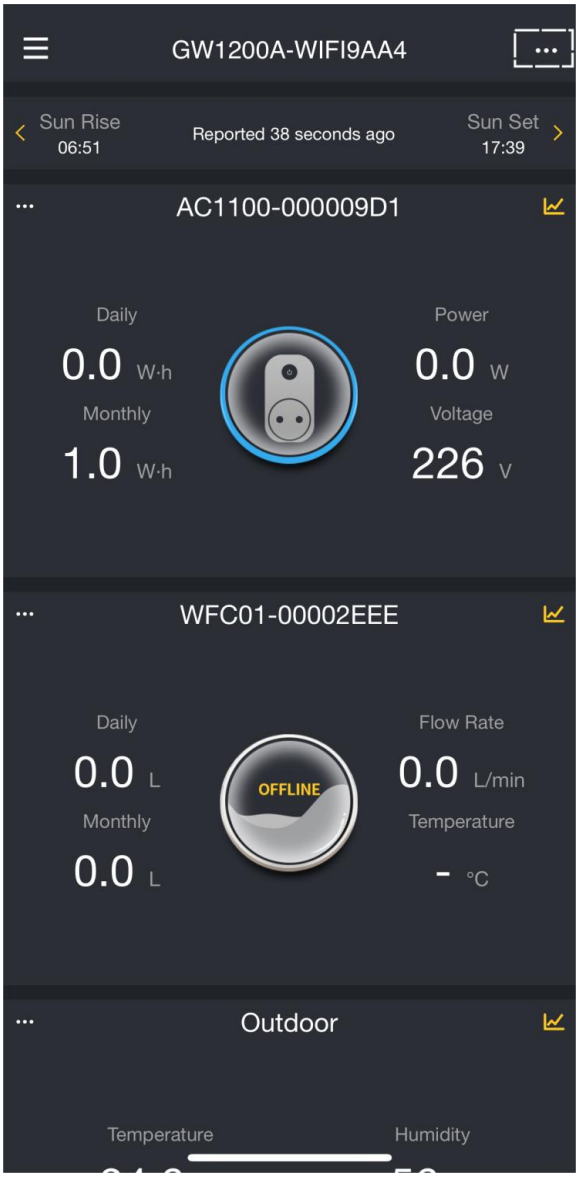


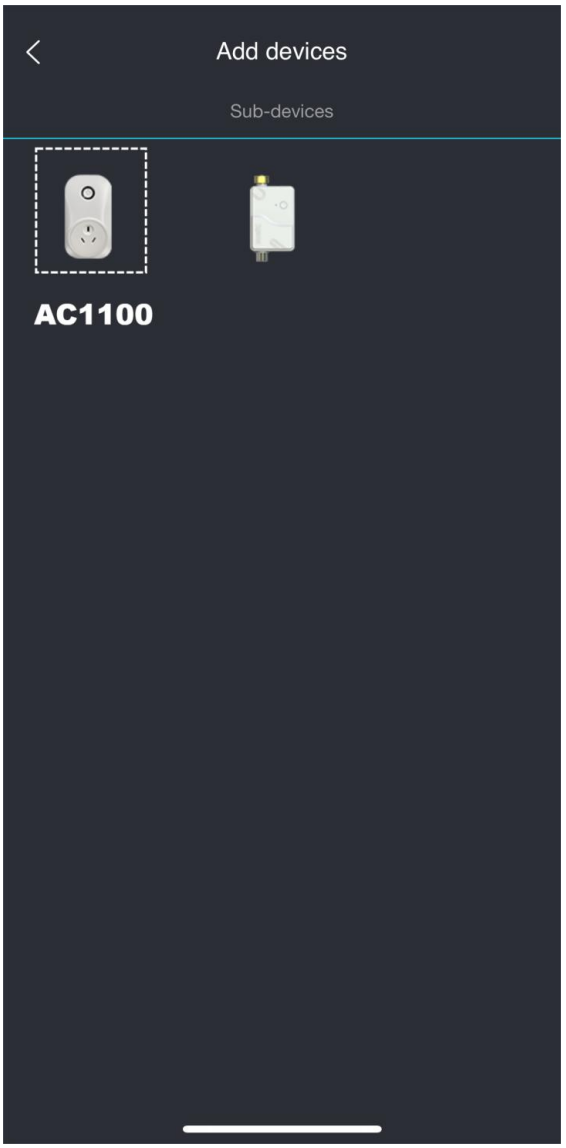
Figure 18 Disable a sensor

2.5 Add a Subdevice

GW1200 is the latest generation gateway that supports smart control devices. It can operate WFC01 and AC1100 and following smart equipment. Below, we will demonstrate the connection methods for GW1200 with WFC01 or AC1100.






Add devices
Sub-devices
AC1100

Add devices
Sub-devices
WFC01

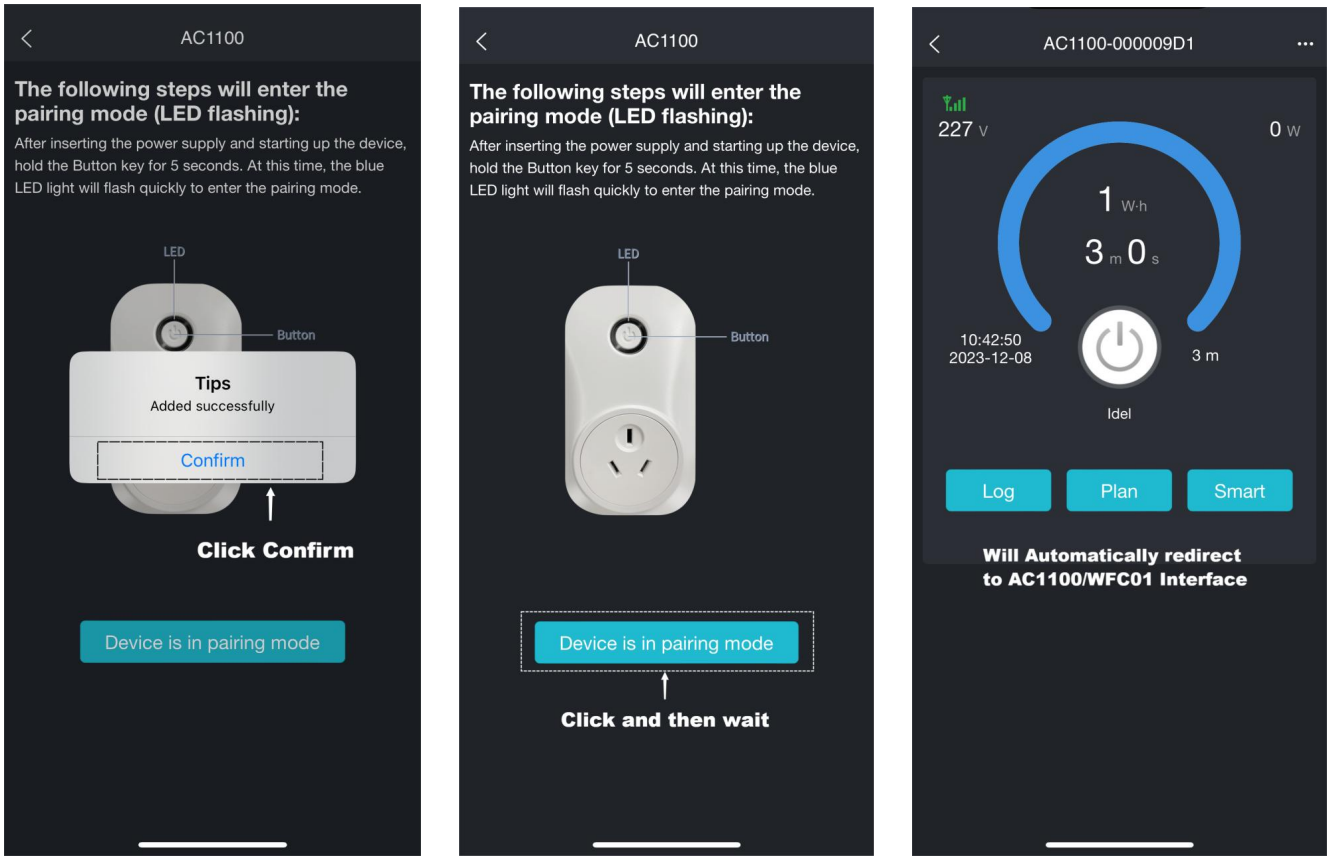


Figure 19 Connecting WFC01/AC1100

2.6 Upload Data to Server

2.6.1 Weather Servers supported

After the Wi-Fi configuration is successful, data can be uploaded to the following weather station servers:
A. ecowitt.net (Default upload to this server)
B. wunderground.com
C. weathercloud.net

D. wow.metoffice.gov.uk
E. Customized servers

2.6.2 Upload Servers Management

(1) Ensure that the mobile phone and GW1200 are using the same Wi-Fi.

(2) Ecowitt App - "···" at the top right corner - "Others" - "DIY Upload Servers"

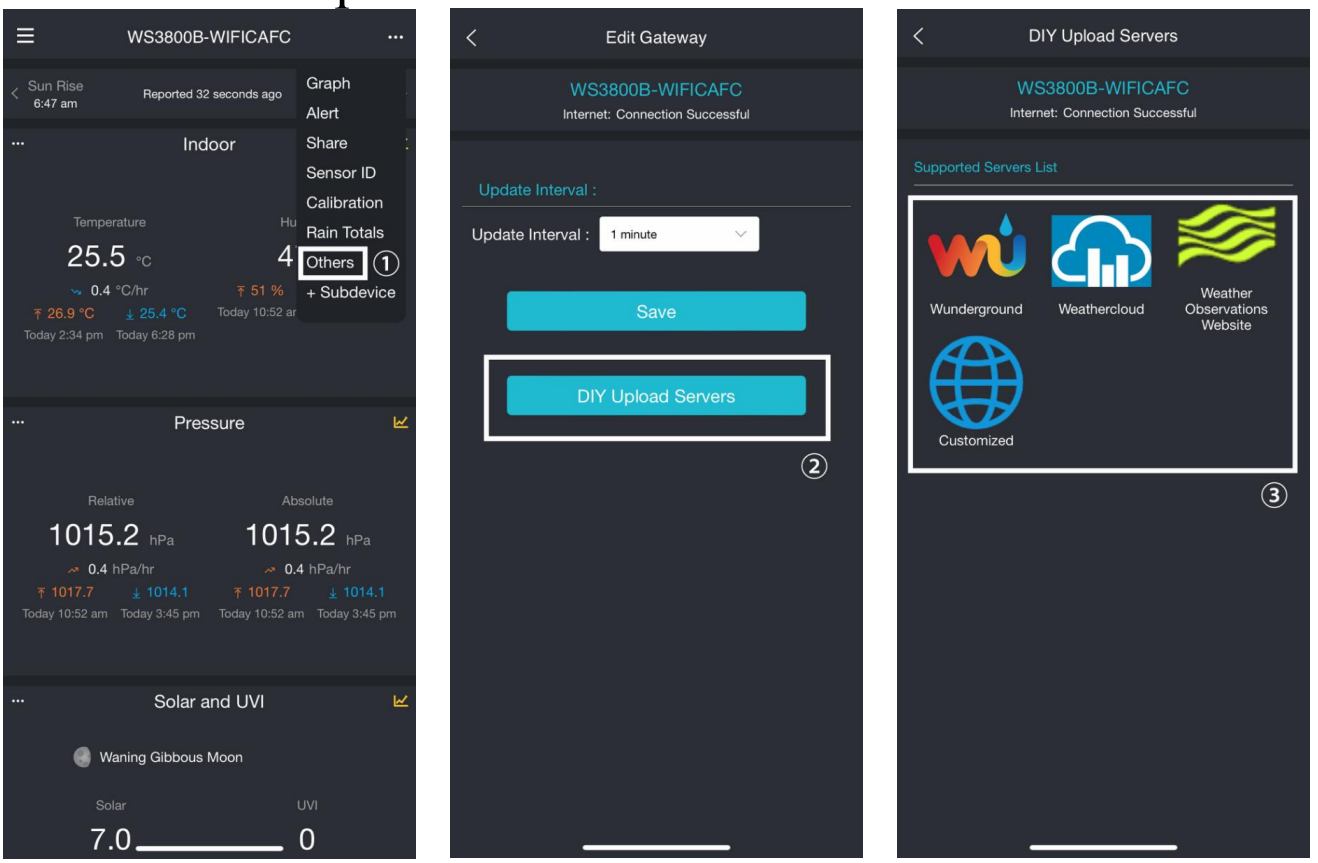


Figure 20 Upload data to server

3 Instructions for Use

3.1 View and Size

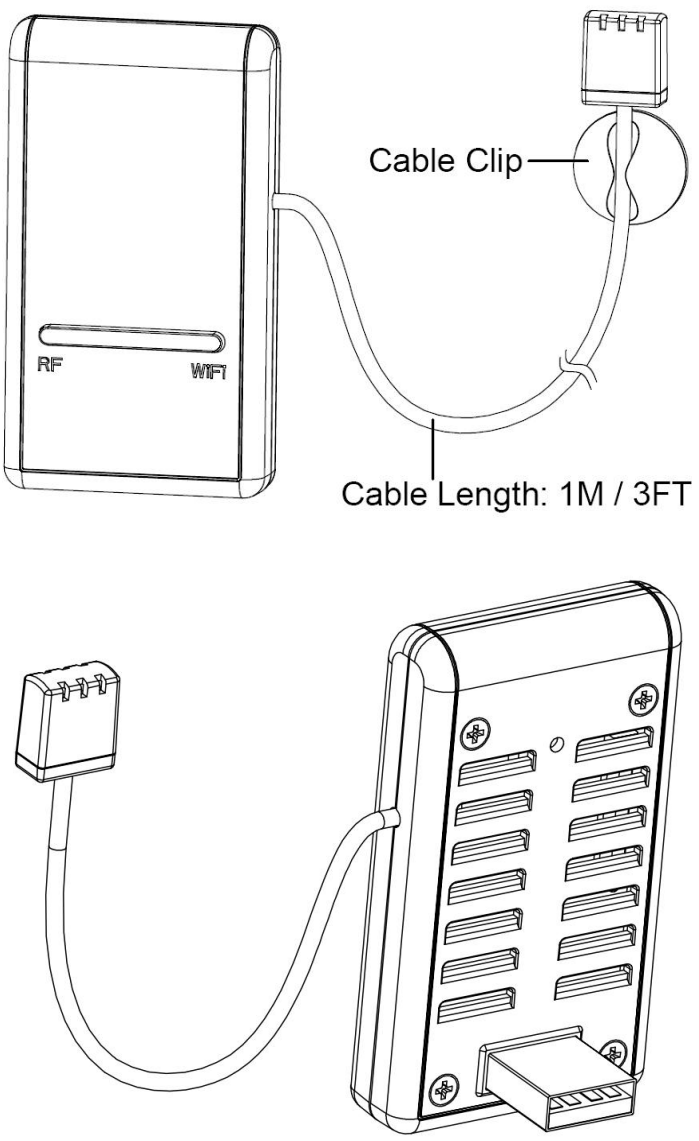


Figure 21: Wi-Fi Gateway

3.2 Features

- Attached temperature, humidity, and barometric 3-in-1 probe sensor.
- Collects sensor data from various supported wireless sensors.
- Additional/optional sensors.
  Go to **Section 5** for detailed sensor list.
- Calculates dew point for outdoor sensor (cloud upload supported).
- Upload sensor data to cloud weather services:
  - ecowitt.net
  - wunderground.com
  - weathercloud.net
  - wow.metoffice.gov.uk
- Custom sites using either Wunderground or Ecowitt protocol. Contact the Customer Support department for assistance.
- Mobile application (Ecowitt APP)：
  - View collected live data.
  - Manage sensor calibration setup.
  - Manage sensor selection.
  - Manage rainfall settings.
- Data storage service on Ecowitt server:
  https://ecowitt.net

- Data storing resolution:
  - By day: 5 minutes average
  - By week: 30 minutes average
  - By month: 4 hours average
  - By year: 1 day average
- Stores data for past three months with 5-minute intervals.
- Stores data for past year at 30-minute intervals.
- Stores data for past two years at 4-hour intervals.

Note: All the optional sensors supported can be found on our website: **ecowitt.net**. Make sure to select the model of the units with the same RF frequency as your gateway (the frequency is different for various countries because of regulations).

Note: ecowitt.net hosts all the sensors supported, however, It is not necessarily true for other data hosting services. For example, the Wunderground only accepts outdoor sensor data, therefore it will not display the following sensor data on their website:

- Indoor temperature and humidity (from the GW1200 built-in 3-in-1 sensor)
- Multi-channel temperature and humidity (from the WN31 sensor) or Multi-channel temp (from WN30 sensor)
- Soil moisture (from the WH51 sensor)
- PM2.5 data (from the WH41/43 sensor)
- Lightning data (from the WH57 sensor)
- Water leakage condition (from the WH55 Sensor)
- Water/Soil temp (from WN34 sensor)
- PM2.5/PM10/CO2/temperature and humidity data (from the WH45 Sensor)
- Leaf wetness sensor(from WN35 sensor)
- Electricity usage situation(from AC1100)
- Water usage situation(from WFC01)
- To view and record all the sensors data remotely, we recommend you to use the Ecowitt server.

3.3 Elements Explanation

See Figure 21 to help you identify elements of the gateway.

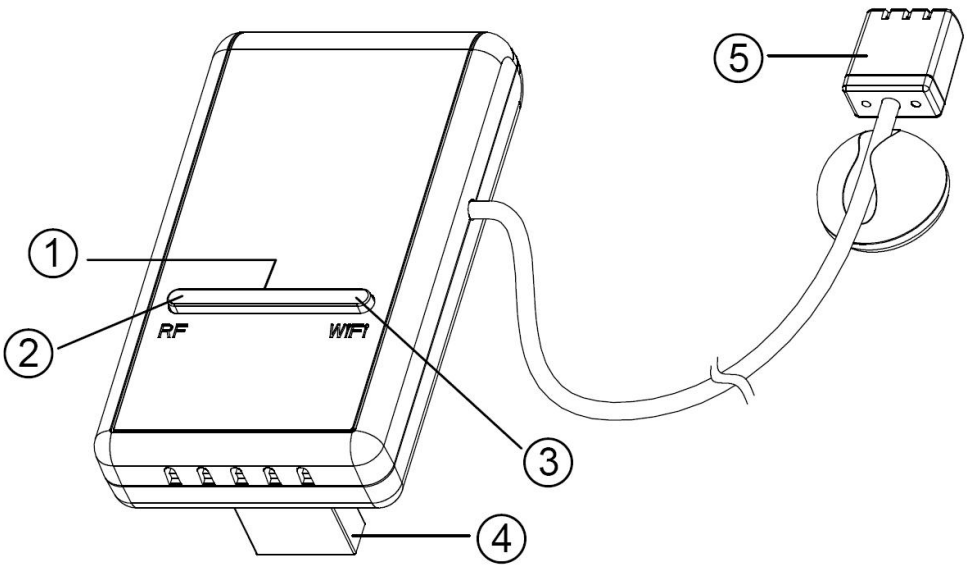


Figure 22 Elements Introduction

1	Factory Default Reset Button
2	RF Status Indicator Light (Blue)
3	Wi-Fi Status Indicator Light (Red)
4	USB Connector for system power supply
5	Temperature, humidity, and barometric 3-in-1 sensor

Table 2 Elements identification

3.4 LED Indicators

RF (Blue): Indicates the status of RF communication with the station.

- **Flash** (each): Indicates one packet of RF data from a sensor was received.
- **Off** (steady): Indicates no RF data received.

Wi-Fi (Red): Indicates the status of the WiFi connection.

- **Off:** Wi-Fi connection to router failed.
- **On:** GW1200 was provisioned to the router and has data sent to any one of the cloud data hosting successfully.

- **Flash slowly:** GW1200 connected to the router, but failed to publish data to any of the weather services on the cloud.
- **Flash rapidly:** GW1200 was in a factory reset default state. It has never been configured for router and weather server.

3.5 Button Function

The black button is used for the reset mode.
Reset Mode: Hold the black button for about 5 seconds will reset the gateway to the factory default reset state. All the history data, Wi-Fi settings, calibration, and sensor labeling, etc. are all lost and need to be set again.

4 Historical Data Export and Clear

4.1 Export History Data

GW1200 doesn't support a memory card to store data, when the Wi-Fi configuration (refer to 2.2 for Wi-Fi Configuration) is completed, you can log in to Ecowitt.net to export the data in CSV file format.
1. Choose time period of data.
2. Click "Export".
3. File will be downloaded automatically.

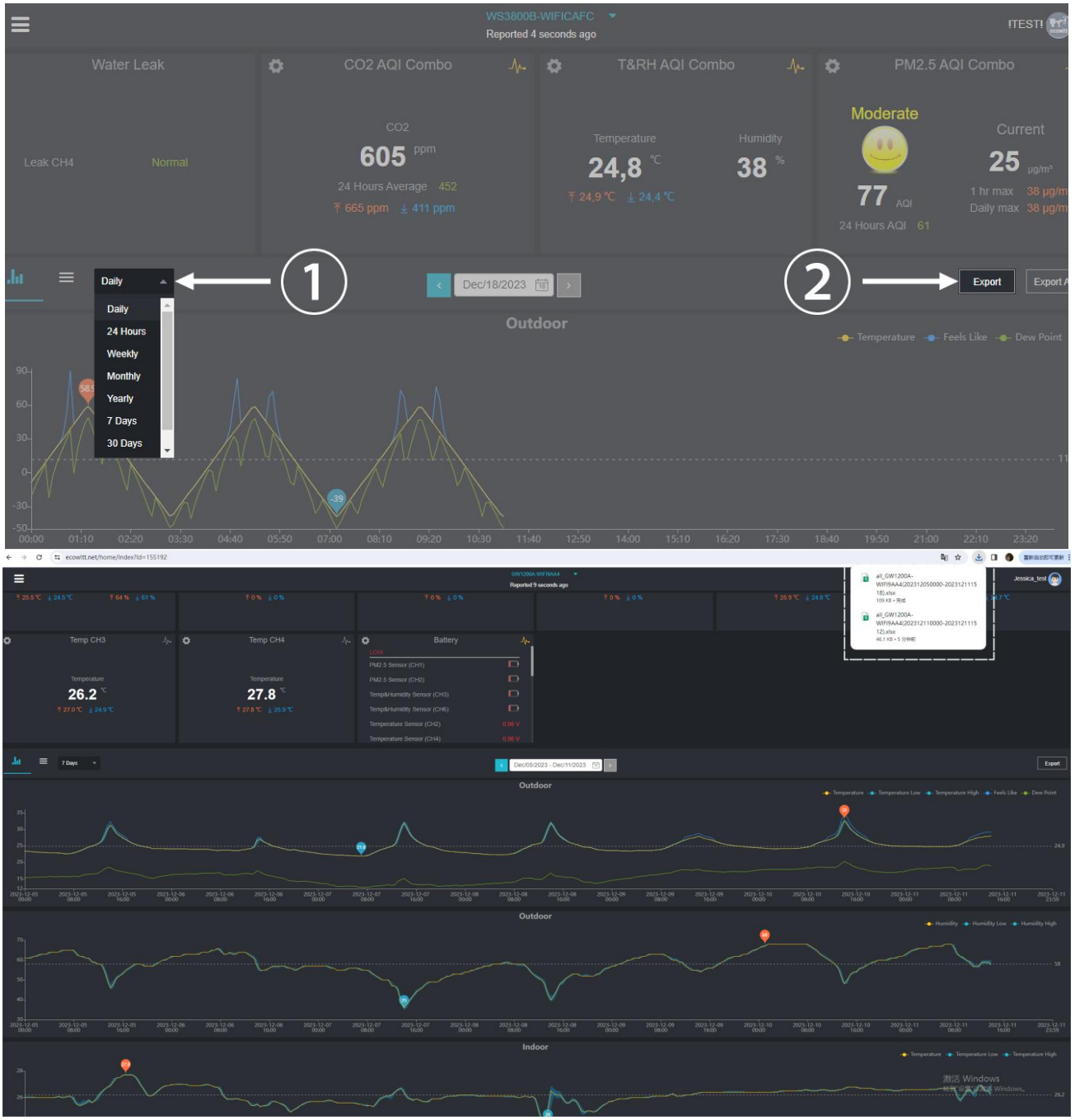


Figure 23 Export History Data

Note:
Data with a query period of days/24 hours is retained for 3 months.
Data with a weekly query period is retained for 1 year.
Data with a monthly query period is retained for 2 years.
Data with a yearly query period is retained for 4 years.

4.2 Clear History Data

Under "menu" - "devices" - "..." button to clear history data.

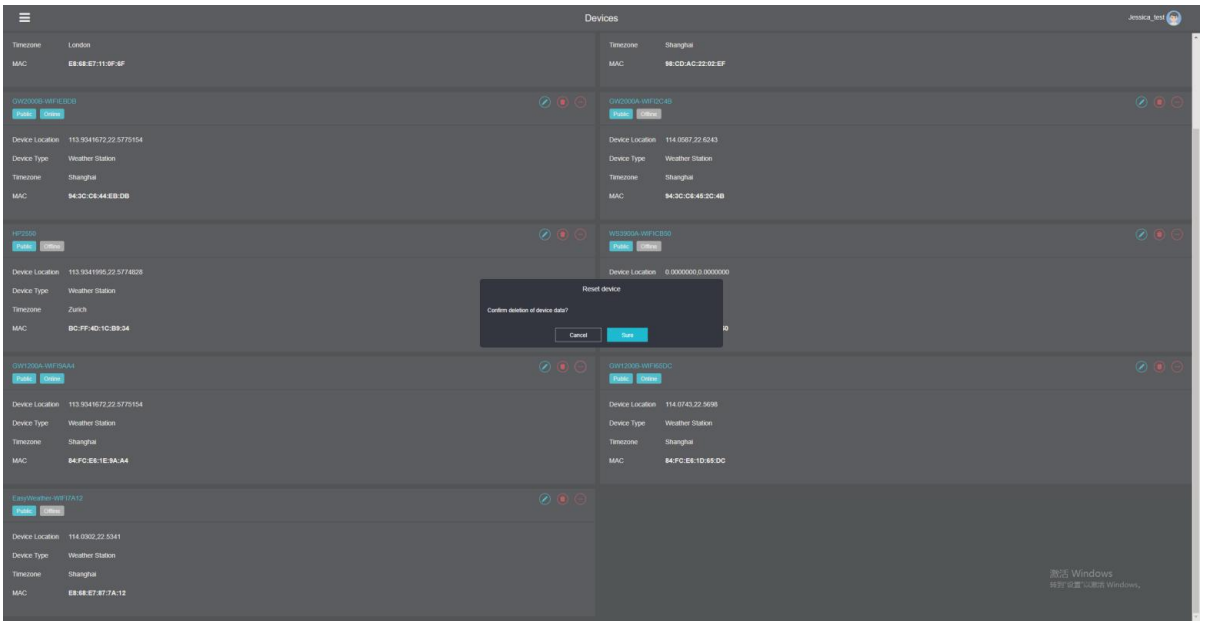


Figure 24 Clear History Data

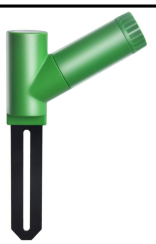
5 Optional Sensors

The RF reception function will always be turned on to receive data from multiple sensors at any time.

5.1 Sensors

When powered on, the device supports these sensors as below. The following sensors can be purchased separately. For more information, please visit our website: http://www.ecowitt.com. Make sure to select the model of the units with the same RF frequency as your gateway (the frequency is different for various countries because of regulations).

Sensor Model	QTY	Picture	Functions
WS90	1		Outdoor temperature & humidity, light, UV, wind speed/direction, rainfall
WS80	1		Outdoor temperature & humidity, light, UV, wind speed/direction
WS69	1		Outdoor temperature & humidity, light, UV, wind speed/direction, rainfall
WS68	1		Light, UV, wind speed/ direction,
WH40	1		Rainfall
WN32	1		Outdoor temperature and humidity

WH45/ WH46	1		WH45: CO2, PM2.5, PM10, temperature and humidity WH46: CO2, PM1.0, PM2.5, PM4.0, PM10, temperature and humidity
WN31/ WN30/ WN36	8		WN31: Temperature and humidity WN30: Temperature WN36: Pool temperature
WH57	1		Lightning detection
WH41/ WH43	4		PM2.5
WH55	4		Water leak detection
WH51	8		Soil moisture

WN34L /S/D	8		Soil/liquid temperature
WN35	8		Leaf wetness

Table 3 Optional sensors

5.2 IoT Device

Sensor Model	QTY	Picture	Functions
WFC01/ AC1100	16		Smart water timer/Smart plug

Table 4 IoT device

6 Calibration

If you have data from a relatively accurate weather station. You can use the data to do the calibration.

1. Make sure your mobile device is connected to the same Wi-Fi network.
2. Click "…" on top right corner and choose "Calibration".
3. For a certain parameter(Use Indoor temperature as an illustration in the Figure 22). Calculate the offset of data from accurate weather station and ecowitt sensor.
4. Fill in the offset got from step3, click Save.

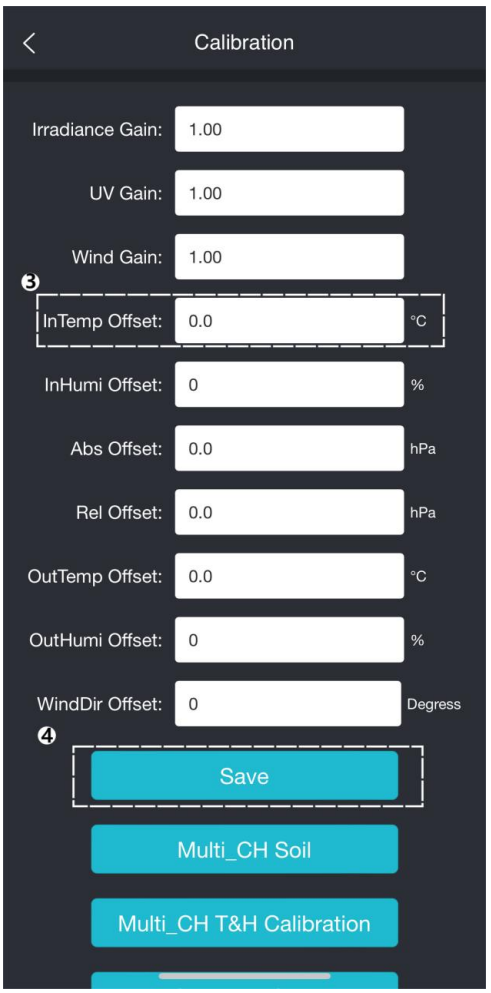


Figure 24 Calibration

7 Rain Settings

7.1 Rainfall Data Priority Setting

If you have multiple rainfall sensors, you can set the priority to display the data from one of them. You can choose between a Traditional Rain Gauge or a Piezoelectric Rain Gauge.

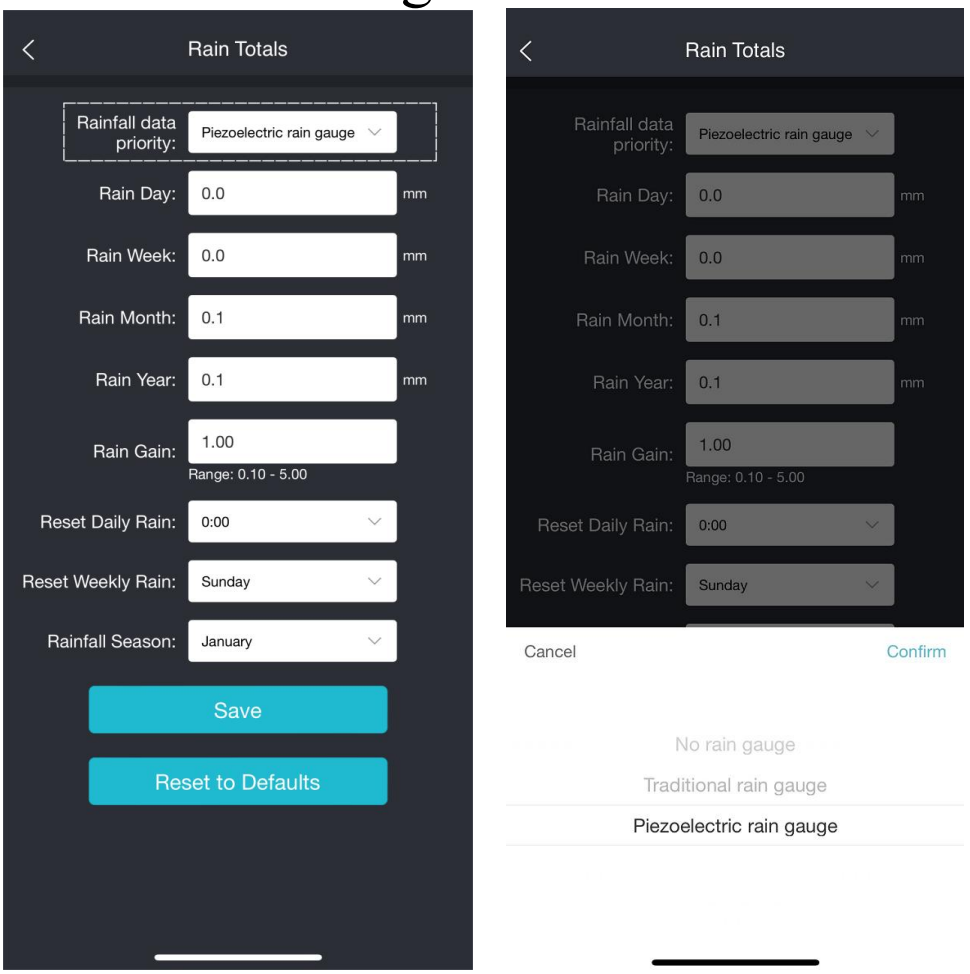
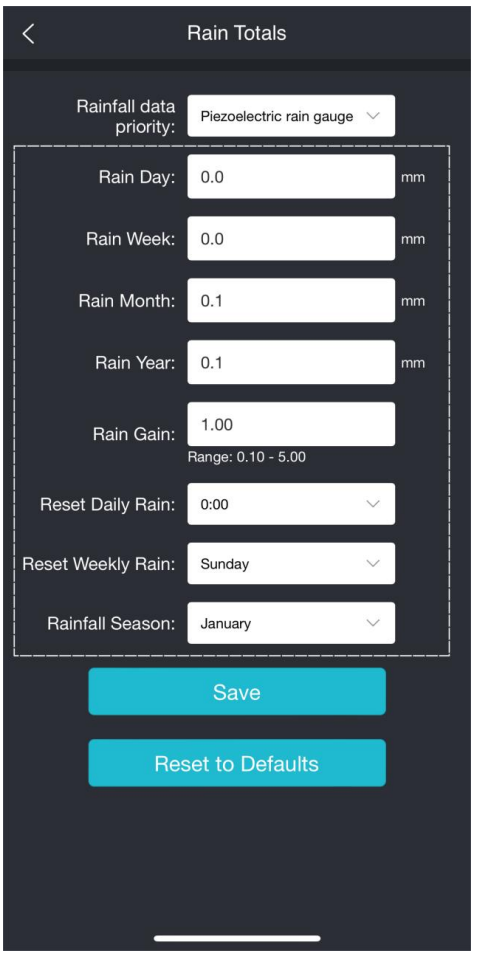


Figure 25 Rainfall Data Priority Setting

7.2 Rain Totals Initial Value

Users can set the Rain for the current year, month, or week starting values. This is useful when you start using this system instead of another one that has accumulated data, or simply if you know the values to be incorrect.

1. Make sure your mobile device is connected to the same Wi-Fi network.
2. Click " ··· " on top right corner and choose "Rain Totals".
3. Fill in the correct Rainfall value, click Save.



8 Unit and other Settings

Click Settings, select the units for different parameters you want. You can see some more settings on this interface.

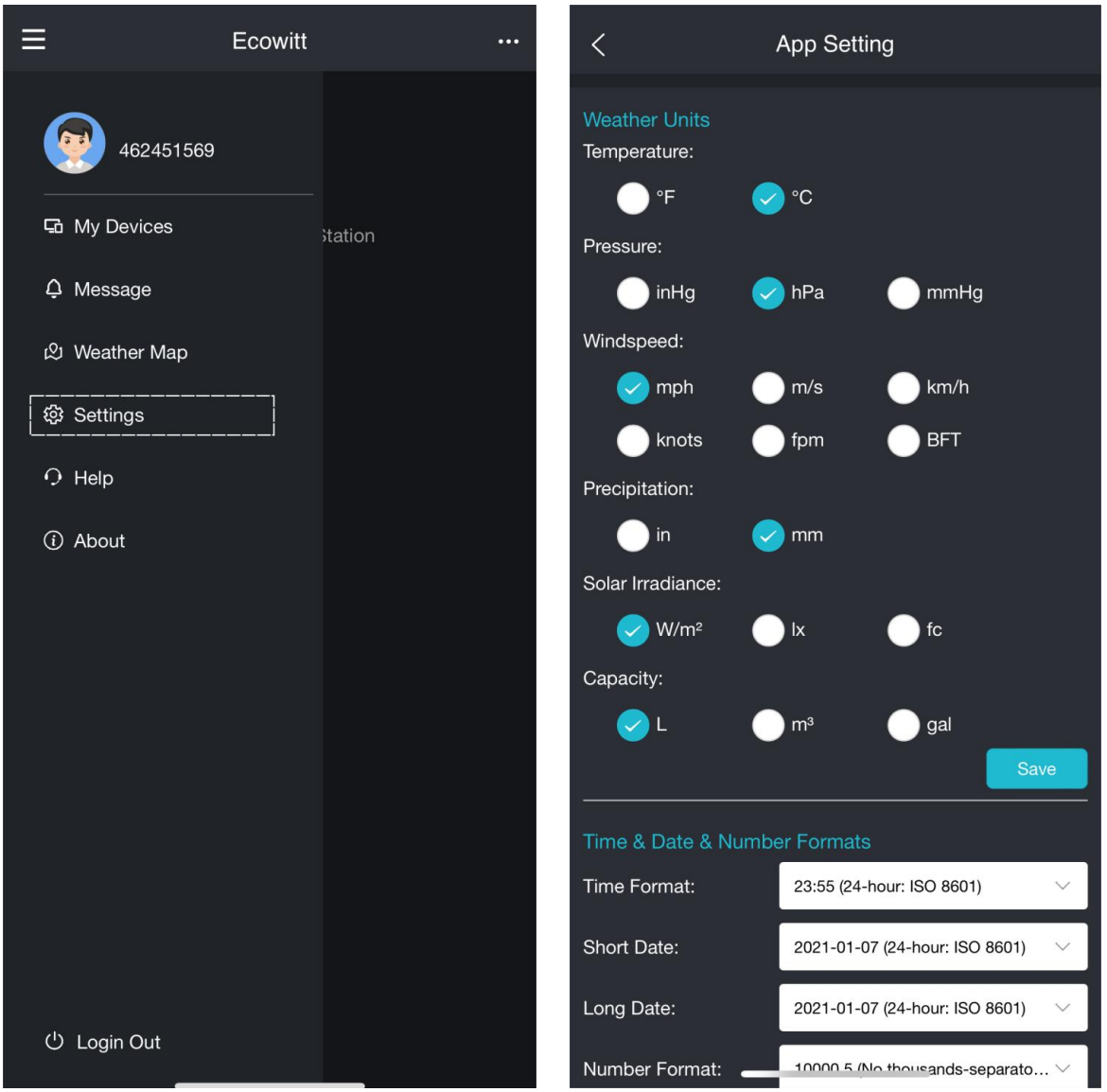


Figure 26 App Setting

9 Firmware Upgrade

9.1 Via Web Page

If you choose "Automatically upgrade firmware" on the web page 192.168.4.1, GW1200 will reboot automatically every time when there is a new firmware. (Automatic update interval is 24 hours).

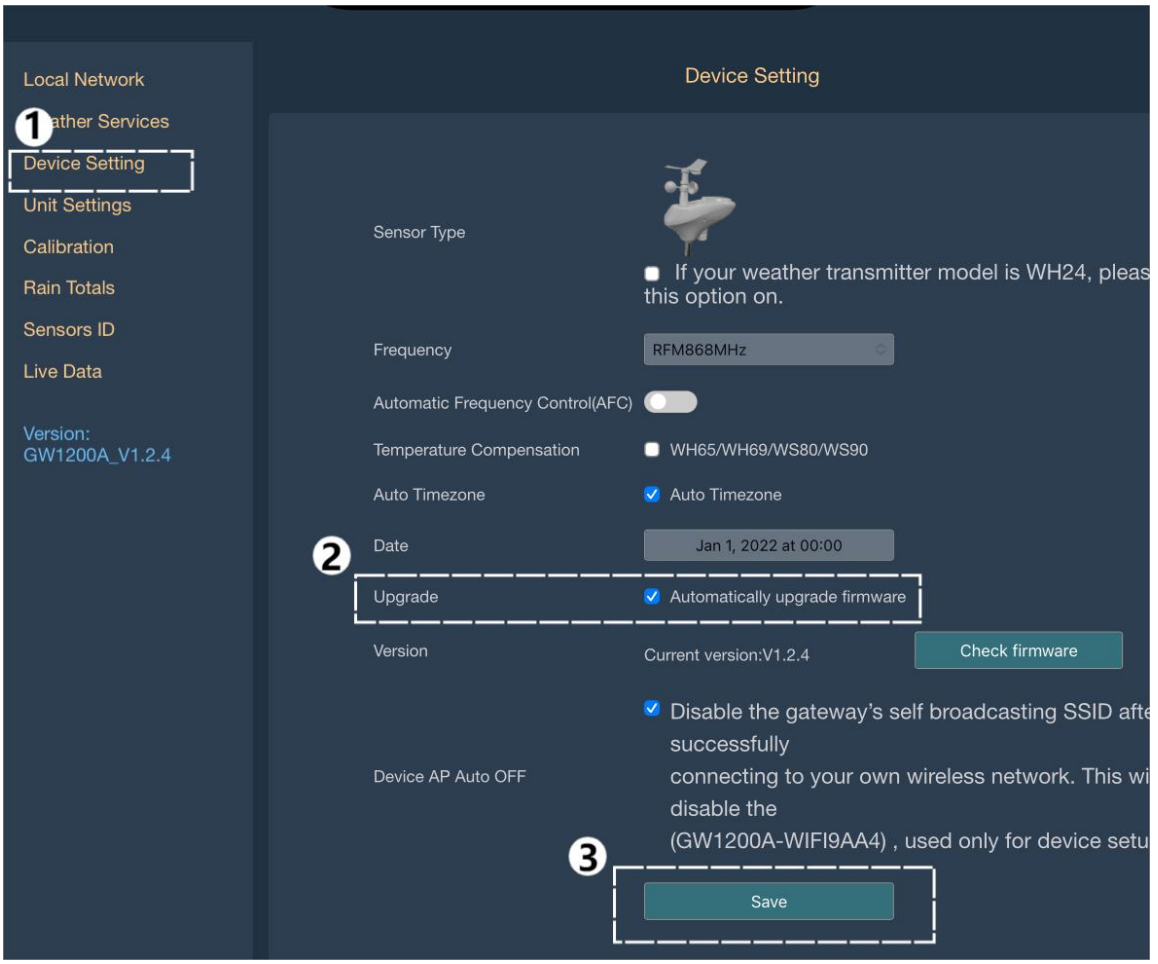


Figure 27 Firmware Upgrade Via Web Page

9.2 Via Ecowitt App

Open Ecowitt App – Weather Station – "…" (Open the edit gateway page) – Tap the firmware version number to upgrade if there is a new version available. When the upgrade is complete, the GW1200 will reboot into the latest version.

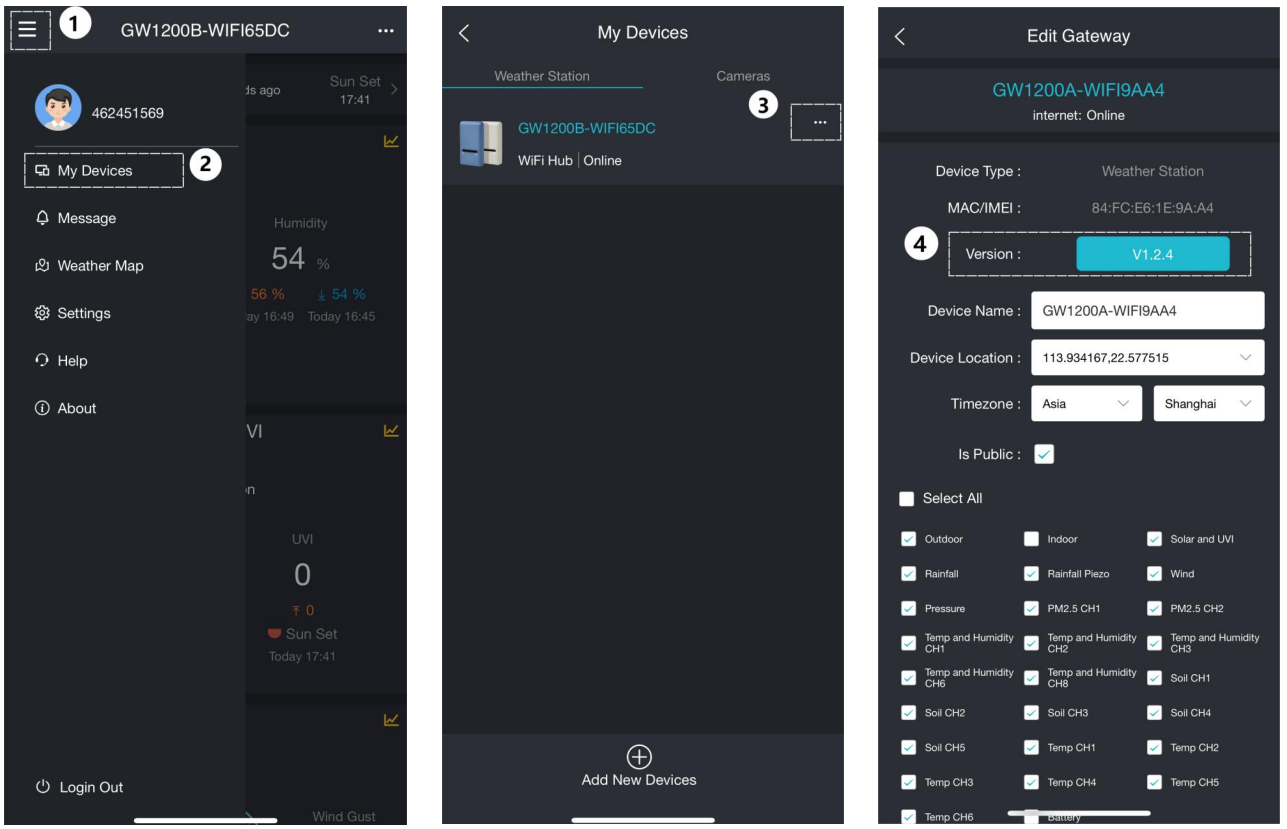


Figure 28 Firmware Upgrade Via Ecowitt App

10 Troubleshooting Guide

Look through the following table and locate an issue or problem you are experiencing in the left column and read possible solutions in the right column.

Problem	Solution
Relative pressure does not agree with the official reporting station	• Relative pressure refers to sea-level equivalent temperature and should generally agree closely with the official station. If there is a disagreement, make sure you are not looking at absolute pressure, in particular, if your station is not near sea level. Also check at different times due to occasional delays in updates to the official station. • Redo the pressure calibration procedure. • The barometer is only accurate to + 0.09 inHg (3hPa) within the following relative pressure range: 8.86 to 32.48 inHg (300-1,100 hPa), which cottesponds to an altirude of 29,527 ft. (9,000m) down to 2,500 ft. (750m) below sea level.Athigher altitudes, you should expect a possible lesser accuracy and non-linearity effects in the error (the calibration offset only allows for a partially linear correction).
Time is incorrect	• Make sure your time zone and DST(daylight savings time) setting is correct .
Data not	• Confirm your station ID is correct. The

reporting to Wunderground.com	station ID is all caps, and the most common issue is substituting a capital letter O for a 0 (zero) or vice versa. Please note the digit 0 can only occur in the last part of the station ID (which is a station number in a city). Example, KAZPHOEN11, not KAZPH0EN11. • Confirm that your password (also called: key) is correct. It is the password wunderground.com generated for your station ID. You can also verify it by logging in to wunderground.com and looking it up under "My Profile-My Devices." • If there's a number "1" on the station key, try to input the lower case of the letter "L" to replace it on the app. • Make sure the date, time, and time zone are correct in the Device Setting. If it is incorrect, you may be reporting data for a point in the past or future and you may not see it where you expect it. • Check your router firewall settings. The gateway sends data via port 80. If you can access other web sites using "http" (not to be confused with "https") this setting will be OK.
No Wi-Fi connection, or gateway configuration	• Check for Wi-Fi light on the gateway. If wireless connectivity is operational, the Wi-Fi light will be steady. Make sure you configured the correct SSID and password.

failed	Repeat the procedure as necessary to verify. • The gateway does not support so-called “captive Wi-Fi” networks. These are typically “guest” type networks where users have to agree to terms and conditions before being connected. • Make sure your Wi-Fi supports 2.4 GHz signals (801 type B or G, or N) because Wi-Fi that uses the 5 GHz spectrum is not supported. For router with dual band, please disable the 5GHz band. • Turn off your mobile data/ cellular data. • Ensure the DHCP mode is open Try alternative methods. • Method 1: • Power off the gateway. • Power on the gateway. • Open the Wi-Fi network on your phone or computer, and connect to the hotspot of GW1200 -WIFIXXXX. • Open your browser, type 192.168.4.1 in the browser address search bar and enter - login - Local Network - enter your Router SSID and Password - Live Data. • Method 2: • Reset your router or reset the gateway to factory mode and then try the configuration again. • Method 3:

	• Try to set your router password to none and then do the configuration again. If successfully, you may set your router password back and configure the gateway again. • Method 4: • Try the configuration using a different mobile device.

Table 5 Troubleshooting Guide

11 Specifications

Note: Out of range values will be displayed using "**---**"

USB gateway built-in sensor	Specification
Dimensions	35×24.9×62(mm)
Weight	25(g)
Material of plastic casing	ABS
Temperature range	-10°C to 60°C (14°F to 140°F)
Temperature accuracy	±0.2°C (±0.4°F)
Temperature resolution	0.1°C (±0.2°F)
Humidity range	1% to 99%
Humidity accuracy	±2%
Humidity resolution	1%

Barometric pressure range	300 to 1,100 hPa (8.85 to 32.5 inHg)
Barometric pressure accuracy	± 3 hPa(700 to 1,100 hPa)
Barometric pressure resolution	0.1 hPa (0.01 inHg)
Reading update interval	About 1 minute
RF connection frequency	920/915/868/433MHz (Depending on local regulations)
RF wireless range	Over 100 meters (in open areas)
WLAN	802.11 b/g/n 2.4 GHz (802.11n, Max 150 Mbps)
WLAN ranges	Over 30 meters (in open areas)
Operating temperature	-10°C to 60°C (14°F to 140°F)

Table 6 USB gateway built-in sensor specification

Power	Specification
USB gateway	5V DC 1A

Table 7 Power specification

Frequency: 915/868/433MHz (Depending on location)

North American: 915MHz;
Europe: 868MHz;
Other areas: 433MHz.

12 Warranty

We disclaim any responsibility for any technical error or printing error or the consequences thereof.
All trademarks and patents are recognized.
We provide a 1-year limited warranty on this product against manufacturing defects or defects in materials and workmanship.
This limited warranty begins on the original date of purchase, is valid only on products purchased, and only to the original purchaser of this product. To receive warranty service, the purchaser must contact us for problem determination and service procedures.
This limited warranty covers only actual defects within the product itself and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, or claims based on

misrepresentation by the seller, or performance variations resulting from installation-related circumstances.

Manufacture: ShenZhenShi OuSaiTeDianZi YouXianGongSi
Address: Shajingjiedao, Xihuanlu, Minzhujiujiugongyecheng AQu, C Dong 4 Ceng A, Shenzhen Baoanqu Guangdong 518101 CN

13 Contact Us

13.1 After-sales Service

Order Issues:

If you encounter any missing or incorrect shipments of Ecowitt products purchased, please reach out to the respective platform's customer service from the store where you bought the product for assistance.

Usage Inquiries:

For any issues related to product usage, feel free to contact our customer support team at support@ecowitt.com. We are committed to providing assistance and resolving any concerns you may have.

13.2 Stay in Touch

Ask questions, watch setup videos, and provide feedback on our social media outlets. Follow Ecowitt on Discord, YouTube, Facebook and Twitter.

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