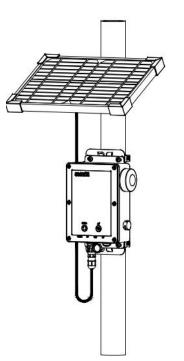
# **ecowitt**<sup>®</sup>



4G & Wi-Fi Weather Station Mobile Gateway Model: WS6210



https://s.ecowitt.com/D33XUA

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# 1.Package

QTY	Item
1	WS6210 (4G & Wi-Fi Weather Station Mobile Gateway)
6	Hose Clamp
	(3 * Fits pipe diameter: 46-70mm & 3 * Fits pipe
	diameter: 21-38mm. Choose according to the need)
2	Hose Clamp Brackets
4	M5*8 Screws
1	SD13 to USB power cable, length 50cm(19.7 inch)
1	Solar panel with cable, length 70cm(27.6 inch)
1	Galvanized Bracket for solar panel
3	Screws for solar panel
1	User Manual
1	Quick Start

#### Table 1 Central WS6210 unit and accessories

QTY	Item
8	AA rechargeable NiMH batteries
1	Nano-SIM card
1	Micro SD card 8G

#### Table 2Accessories list (included)

# 2. Construction & Layout

# 2.1 Multiple Views and Size

#### 1. WS6210 Size

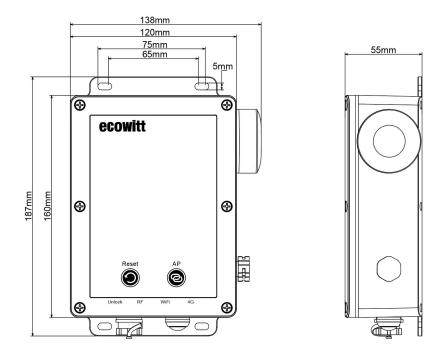
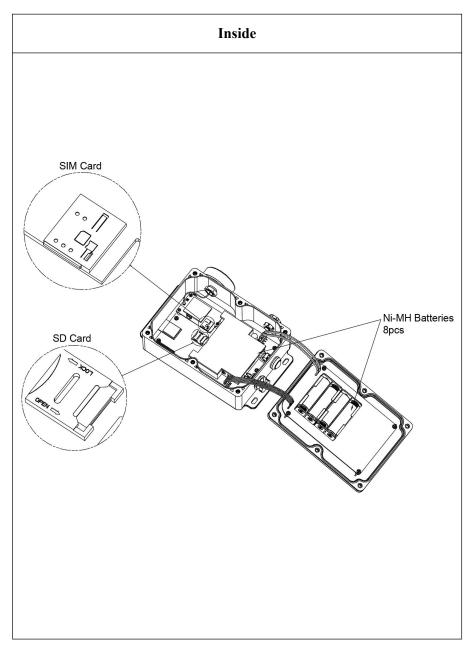


Figure 1

# 2.2 Layout



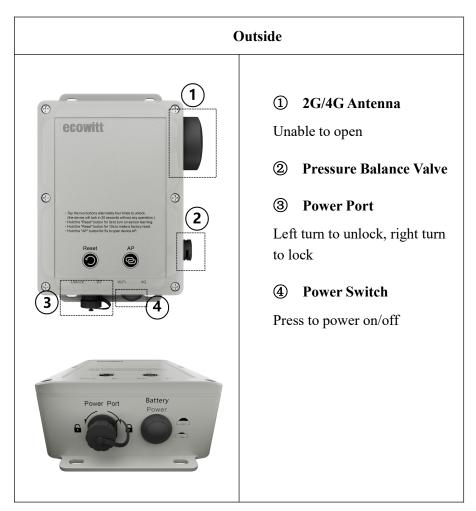


Table 3

# 2.3 Light Indicators

Reset AP					
Light	Indicators				
Unlock	• Off: Locked – key operation is prohibited				
	• <b>On:</b> Unlocked – key operation is possible.				
• Flashes regularly: Sensor Learning					
	• Blinking Once: A successful reception of sensor signal.				
	• Continuous blinking: AP on.				
	• Off: Wi-Fi de-activated.				
Wi-Fi	• Fast blinking: In Wi-Fi provisioning mode				
	• Slow blinking: Wi-Fi connected without internet				
	• Steady on: Wi-Fi connected with internet access				
	• Off: Module is not recognized				
4G	• Flashes quickly: The module is under-recognizing				
	• Blinks slowly: When registering with the network				
	• Flashes once every 5 seconds: Successful network connection				

## Table 4

## 2.4 Touch Button

The device has two touch buttons: **Reset** and **AP**.

Tap Reset & AP Button alternatively four times (tap interval < 1.5s) to unlock the WS6210. The below button works when in the unlocked state.



## Reset Button

Press and hold the button for:

**3 seconds**: it will turn on the receiver and will be in **sensor learning mode**. The RF LED will flash two times per second for 3 minutes until the learning process is completed.

**10 seconds**: The gateway reboots to factory default settings. The four LEDs flash two times per second three times, then the device will reboot.

## **AP** Button

Hold for 5 seconds:

Turn on the onboard Wi-Fi AP for 5 minutes. The device can be connected via IP address 192.168.4.1and SSID WS6210x-WIFIxxxx.

## **3. Brief Introduction**

Thank you for purchasing the Ecowitt WS6210 weather station mobile receiver and transmitter. The WS6210 is a versatile wireless communication device supporting various wireless communication protocols. It is suitable for meteorological data collection and transmission. The product supports Wi-Fi and 4G connections for receiving and processing multiple sensor data types.

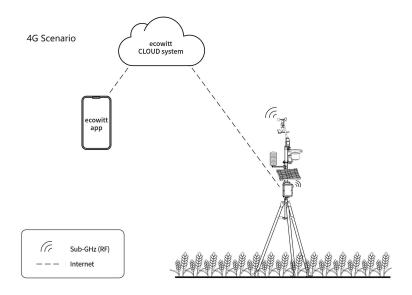


Figure 2 4G Scenario

#### **Outdoor Use:**

The product can use 4G for data transmission when used outdoors without power supply from the grid and without WLAN connectivity.

It can also be used outdoors via an available WLAN connection when permanent power supply via the electricity grid or other means (powerstation) is available.

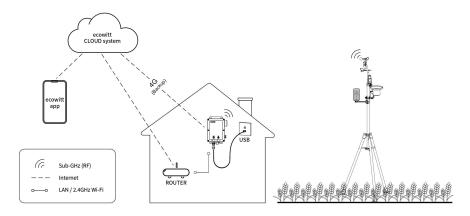


Figure 3 WIFI + 4G Scenario

#### Indoor Use:

When used indoors and WLAN connection is available, the product prioritizes Wi-Fi for data transmission. If Wi-Fi disconnects, it switches to 4G to maintain continuous data flow. (This is a configuration option, see chapter 4.3)

The WS6210 is technically speaking a gateway, a display-less console, which needs to be used with optional sensors to obtain weather or other environment related data and is not a standalone product.

The following user guide provides step-by-step instructions for installation and operation. Use this manual to become familiar with your weather station and save it for future reference.

### General Terms Used in the Manual:

Weather Station: Includes the console and sensors (or sensor array).

**Gateway:** Also known as a hub, it is a Displayless console. Here, refer to the WS6210 device.

Transmitter: Refers to the sensor.

Receiver: Refers to the console.

**RF:** Radio frequency. It refers to the ISM and SRD SUBG (Industrial, Scientific and Medical and Short Range Devices frequency bands below 1 GHz) for communicating between the gateway and its sensors. This frequency is not the same as the 4G modem or Wi-Fi working frequency. ISM/SRD bands are kept separate from 4G frequencies by national regulations to avoid interferences. Typical ISM/SRD frequencies are 915 (Americas), 868 (Europe), 433 (worldwide), 920 (Japan, Korea).

**4G:** A mobile data network standard (LTE): Long Term Evolution or 4th generation. WS6210 has a built-in 4G modem that can be configured to upload data via a 4G network. It needs a SIM card and the 4G service provider covers the area where you want the WS6210 to be installed.

# 4. First Use

#### 4.1 Power on

1. Press the physical Power button to power it on. Four lights will turn on for 3s when powered on successfully. As illustrated below:





2. When first used, please charge the WS6210 using the included USB cable. The batteries will be fully charged in 10 hours.

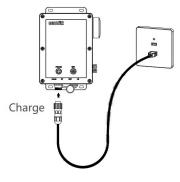


Figure 5

Note:

1. You can also use an external charger, Do not use normal, non-rechargeable

batteries ! This could result in battery leakage and will damage the device

2. Reboot the device will need to unplug the USB cable, then press the physical Power button twice.

#### 4.2 Install the APP

1. Scan the QR code on the body of WS6210 to download the app.

Assure you have the location and Wi-Fi service enabled for this Ecowitt APP.





 $2\,{}_{\smallsetminus}\,$  Run the "ecowitt" APP and register your account

3, Open the APP, tap on "menu" – "device" – "+add a new device"- choose the model of ws6210 from the product listing

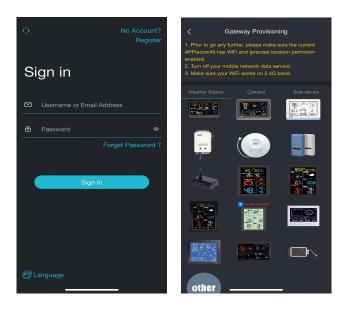


Figure 7

## 4.3 Working Mode

WS6210 has three working modes available for uploading the data to weather services, like <u>www.ecowitt.net</u>, weather underground, wow, weather cloud, and custom server is possible too.

- Ecowitt SIM: The device comes with a SIM card pre-installed in the factory. You can use the SIM card to upload data. The default package includes a prepaid 90-day (300MB) service. If you want to use this for data uploading, please refer to section 4.3.1 for the activation. You may extend the cellular data service by going through the SIM card renewal process on the "ecowitt" app before the data service expires.
- User SIM: Open the housing of WS6210, remove the pre-installed SIM card, and replace it with your SIM card. Please refer to section 4.3.2 for the setup.

3. **Wi-Fi:** If your location has Wi-Fi and USB power access, you may refer to **section 4.3.3** for the setup.

Cellular Service and Wi-Fi can both be set at the same time. When both connections are present, the Wi-Fi connection has higher priority, and it will only switch using the SIM cellular connection when the Wi-Fi connection is unavailable. Select the mode that is appropriate for you.

## 4.3.1 Ecowitt SIM

Ensure the provided Ecowitt SIM card is compatible with the operating service provider in your country. If the built-in SIM card is not supported in your region, replace the SIM card with yours. Refers to **Section 4.3.2** 

Country/Region	Operator		Country/Region	Operator
Albania	Vodafone		Macau, China	H3G
Australia	Vodafone	Vodafone		Celcom/Mi3G-U Mobile
Austria	H3G		Malta	Vodafone
Brazil	Telefonica		Mozambique	Vodafone
Cambodia	Smart		Myanmar	MPT
Canada	Rogers		Netherlands	Vodafone
China	ChinaMobile/Unico m		New Zealand	OneNZ
CongoDR	Vodafone		Philippines	Smart

Czech Republic	Vodafone	Portugal	Vodafone
Denmark	H3G	Romania	Vodafone
France	Bouygues Telecom/Orange	Russian Federation	MTS
Germany	Vodafone	Saudi Arabia	STC
Ghana	Vodafone	Singapore	Starhub
Greece	Vodafone	South Africa	Vodafone
Hong Kong, China	H3G	South Korea	SKTelecom
Hungary	Vodafone	Spain	Vodafone
Indonesia	Indosat	Sweden	H3G
Ireland	H3G/Vodafone	Taiwan, China	CHT/FET
Israel	Partner/Pelephone	Tanzania	Vodafone
Italy	Italy H3G/Vodafone		AIS/Truemove
Japan	KDDI AU	Turkey	Vodafone-Telsim
Lesotho	Vodafone	UAE	Etisalat
Vitenam	Vitenam Mobile		

Table 6 Regions where the built-in SIM card service is supported

**1.** Tap on "menu" – "device" – "+add a new device"- choose the model of ws6210 from the product listing.

2. Tap on the button marked with "Ecowitt SIM Card."

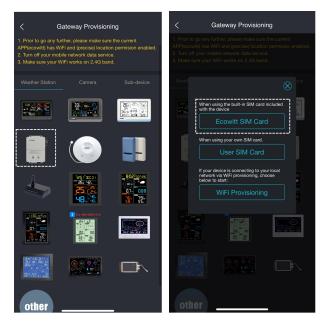


Figure 8

3. Scan the QR code on the device and bind it simultaneously.

< album	< Gateway Provisioning	C Gateway Provisioning
	Device Name : WS6210B-0AF804	Device Name : WS6210B-0AF804
	Save	Allow "Ecowitt" to use your location? Configure Device need to get Wi-Fi information
No. of Concession, No. of Conces		Precise: On     Avanage     ECO Park
light low?		時主惑公園 「日本語公園 「日本語の日本語の日本語の日本語の日本語の日本語の日本語の日本語の日本語の日本語の
		Allow Once Allow While Using App
The QR code cannot be found or lost?		Don't Allow



4. Select the country or region for the SIM card usage.

(\* Note: that it cannot be changed once activated)

<	SIM card Register		<	SIM card Register
Note that it Country(rep First-time Si days of free After that, yo	Et the countrylegion) you want to act cannot be changed once activated grow) : ChangChang-Chandkoble	n 90 ns to	Note that it canno Country(region) First-time SIM ca days of free mobi After that, you ca	rd registration includes 300MB in 90
	Please select Burma)-MPT I(Canada)-Rogers		+ 720 Days + 2400 MB Price: \$35.99	
L Chile(Cl	hile)-Entel			
China(C	China)-ChinaMobile/Unicom	~		Save
Czech F	Republic(Czech Republic)-Vodafone			
Democra of Congr	atic Republic of Congo(Democratic R o)-Vodafone	epublic		
Denmar	rk(Denmark)-H3G			
France(	France)-Bouygues Telecom/Orange			

Figure 10

5. Reboot the WS6210, then wait approximately 30-60 minutes for the data to upload.

You can see the battery level on dashboard.

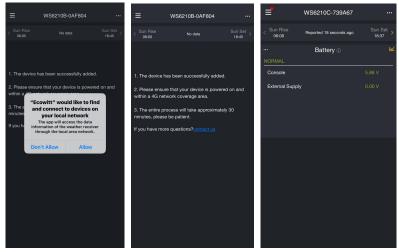


Figure 11

**Note:** If there is no data for more than 60 minutes, go to the **8.9** interface for detailed analysis.

## 4.3.2 User's SIM Card

**4.3.2.1**. Replace the SIM Card (Note: Please refer to **section11.1** for specific operations)

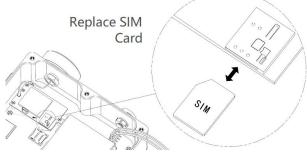


Figure 12

4.3.2.2. Tap on the cell marked with "User SIM Card"



Figure 13

4.3.2.3. Fill out APN Settings and wait for the data to be uploaded.APN: Access Point Name, used for data communication and can be edited. Correct APN settings are necessary for proper use if using a custom SIM card.

You can see the battery level on dashboard.

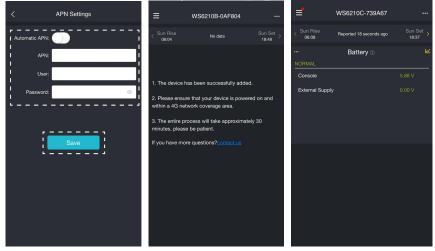


Figure 14

## 4.3.3 Wi-Fi Provisioning

- **Note1:** Using Wi-Fi for data uploading consumes much power and requires the WS6210 console to be powered by connecting to a USB power socket instead of a solar panel.
  - **Note2**: Disabling your phone's mobile data service will help avoid many unknown problem during the registration of the gateway with your network router. (As shown in the figure below)



Figure 15

#### 4.3.3.1. Turn on the WS6210's AP

Make sure WS6210 is unlocked. Holding the AP Button for 5 seconds will turn on WS6210's Wi-Fi AP for 5 minutes.



Figure 16

#### 4.3.3.2. AP: access point.

The WS6210 has a built-in WiFi access point (SSID WS6210x-WIFInnnn) which can be used to access the device for configuration and data viewing (IP address 192.168.4.1).

It can also be used to connect the device to a local wireless network (WLAN) by providing the router login credentials (SSID, password) and via that to the internet. The connection to the local network once established will also be maintained when the AP is switched off.

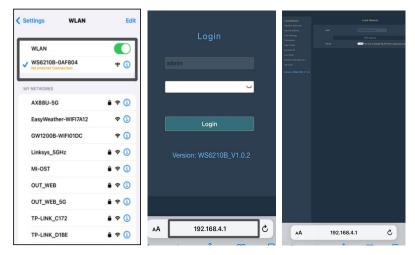


Figure 17

#### 4.3.3.3.

Tap on "menu"-"device"-"+add a new device"-choose the model of WS6210 from the Product listing.

Tap on the cell marked with "WIFI provisioning".

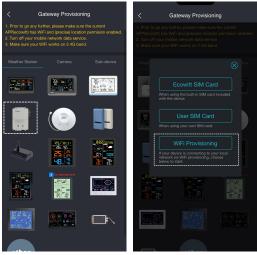


Figure 18

## 4.3.3.4. Connect to WS6210's AP

In the wireless network list of your device (PC, tablet, Smartphone) select the SSID of the WS6210 (WS6210x-WIFIxxxx). Keep the Wi-Fi connection even without an internet connection.

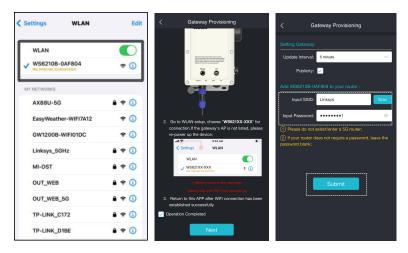


Figure 19

4.3.3.5. Switch the cellphone's WIFI to the same one as the WS6210.

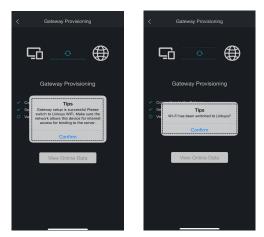


Figure 20

## 4.3.3.6. Wait for the data to be uploaded

You can see the battery level on dashboard.

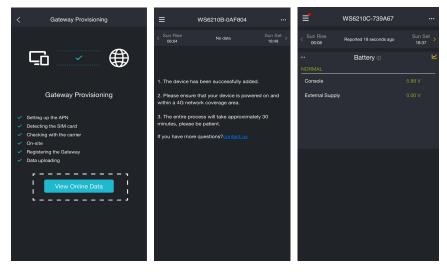


Figure 21

## 4.4 How to delete and reset WS6210

Long press the WS6210 till the delete icon appears, press it, then choose Delete or Reset.

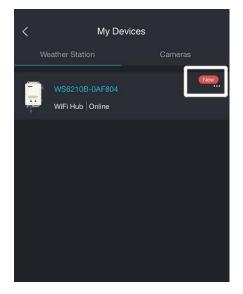


Figure 22

# 5. General Setting and Checkup

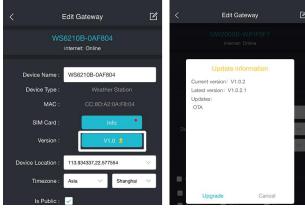
After completing the Network configuration, you can set the device for its' device name, location, Time zone, DST (Daylight Saving Time), and Data public settings.

- 1. Tap on Menu and then click on "My Devices".
- 2. Click the "... with a red new" icon to open the editing page.



#### Figure 23

**Version**: The current firmware version is displayed here. If an update is available, a "yellow arrow" will appear next to the version number. Tap on the version button to start the upgrade.





**Device Name**: You can edit your device name here if the default name needs to be changed.

Device Location: Your device's weather map location is determined by

its coordinates. You can change its location by tapping the location cell to open the weather map. You can drag and drop your WS6210 gateway on the map; its coordinates will be updated automatically.

<	Edit Gateway	C <	Мар	
WS	S6210B-0AF804 internet: Online	E		
Device Name :	WS6210B-0AF804		Hug Hon Brazes	Buiken Cooke St
Device Type :		de Recreio		"Me St
MAC :	CC:8D:A2:0A:F8:04	Gascoigne	Rg The Hong Kong Polytechnic	in States
SIM Card :	Info	un Club Hill	s Marg	NanRd
Version :	V1.0.2	Barracks	The Hong Kong Polytechnic University	Creeng Wan Rd
Device Location :	113.934337,22.577554	HILL	5	
Timezone :	Asia 🗸 Shanghai	< Chatha	Hong Choose Hong Salisbury Rd	Hung Hom Stabling Sidings
Is Public :		Hong M	History	ong Kong toliseum
Select All			Hotel ICON	B
Outdoor	📃 Indoor 🛛 🗹 Solar and UV	n	Hotel ICON Py Kings (Pg	Hung Hong
Sainfall	🖂 Rainfall Piezo 🛛 🔽 Wind		5	
Pressure	🖌 Lightning 📃 CO2 AQI Con	mbo		
PM2.5 AQI Combo	PM10 AQI Combo PM1 AQI Con	mbo	að	
PM4 AQI Combo	📃 T&RH AQI Combo 🖌 Leaking		Saliabuy Rd	
	Save	Contrate of	obox	0

Figure 25

**Note 1**: After the above device setting is completed, return to the dashboard. If the network connection is successful, the dashboard will display as follows:



#### Figure 26 Connection is Succeed

**Note 2**: The above dashboard should appear immediately with a Wi-Fi connection, and a cellular connection will be activated within 60 minutes. If the device shows an offline status, please refer to **section 8.9** for more details.



Figure 27 Connection is failed

# 6. Sensor start up

#### 1. Ensure the gateway is in sensor learning mode.

Hold the Reset button for 3 seconds will turn on the receiver and will be in sensor learning mode. The RF LED will flash two times per second for 3 minutes until the learning process is completed.

#### 2. Power up the sensor.

Power up your sensor array, and the Web-UI dashboard should be able to show up the sensor data on the dashboard immediately after registration .

If all data looks normal, you can temporarily store the gateway and sensor to ensure the system works. Then, refer to **section 7** and complete the installation in its permanent location.

For sensor mounting, you may refer to the specific sensor instruction manual.

#### 3. Sensor ID confirmation

Ensure that the sensor ID from which the receiver is receiving data matches the sensor ID on the label of the sensor array body.

You can check sensor ID on the Web-UI dashboard. Reference to **Section 8.7** for detailed instructions.

# 7. Mounting

## 7.1 Solar Panel Size

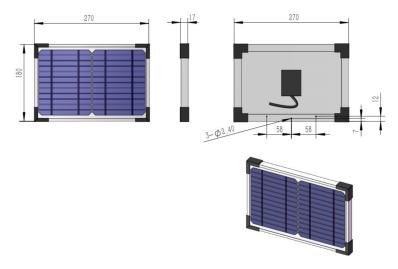


Figure 28

## 7.2 Mounting

Before installation, please ensure that the product has been set up correctly. You may skip this part until the setup is completed.

The accessory supports two range of pole widths. Prepare a support pole with a diameter of 1.8-2.75 inches (46mm-70mm) or 0.83-1.50 inches (21mm-38mm) in an open field with adequate lighting. Ensure the outdoor environment's 4G cell phone signal is sufficiently strong.

**Tip:** It is recommended to fully charge the device via USB cable before mounting.

#### 1. Mount the Solar Panel onto the pole

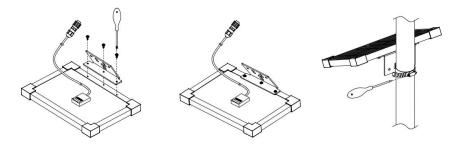


Figure 29

2. Tighten the screws to secure the enclosure

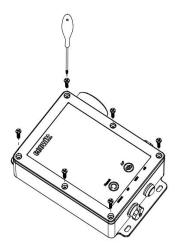
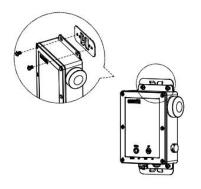


Figure 30

The enclosure is closed by default. If you need to replace the SD card or SIM card, you will need to open it. Otherwise, it should remain closed.

#### 3. Mount the WS6210 onto the pole



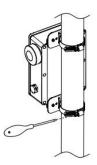


Figure 31

4. Mounting completed

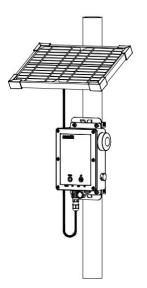


Figure 32

# 8. Web UI On WS6210

The Web UI is an essential tool for managing the device. You can use it to check the network connection status, set up weather services (WU, WOW, Weather Cloud, custom server), view live data, manage sensors, make calibrations, manage SD card files, and more.

How to Access the Web UI:

Make sure WS6210 is unlocked. Holding the AP Button for 5 seconds will turn on its Wi-Fi AP for 5 minutes. Connect to the WS6210's AP. Enter 192.168.4.1 in the browser. Log in with the default username and password, which are blank.

If your gateway is connected to a local network, the WebUI can also be reached via the IP address the gateway has received or has been configured:

```
http://IP-address-of-the-gateway (e.g. http://192.168.1.123)
```

Settings changes, such as registered Sensor IDs, are saved three minutes after power-up. However, changes made via the web interface are saved immediately and retained even if power is lost.

## 8.1 Local Network

This page supports viewing or setting:

(1) MAC address

(2) WLAN: WLAN is the function of the gateway's Wi-Fi connection router, which is disabled by default

**Note:** Make sure to deactivate the WLAN when the system is powered up by the solar panel.

(3) IP Address Mode: Receive Automatically (DHCP) or Static

Local Network		Local Network
Weather Services		
Device Setting	MAC	64:E8:33:44:51:88
Unit Settings		WIFI Network
Calibration		
Rain Totals	WLAN	WiFi activation accelerates battery depletion.Better use a power source.
Sensors ID	Router SSID	AX88U Scan Router
Live Data	WIFI Password If you router is dual-band, make sure you connect to the router's 2.4GHz ban	
Modem Management		If you router is dual-band, make sure you connect to the router's 2.4GHz band.
SD Card	IP Address Mode	Receive Automatically(DHCP)
Version: WS6210C_V1.0.1.1	Static IP Address	192.168.30.201
	Static Subnet Mask	255.255.255.0
	Static Gateway	192.168.30.1
	Static DNS Server	205.171.3.65
		Арру

Figure 33

#### 8.2 Weather Services

After the Network 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. one Customized server of your choice

		Weather Services	
Weather Services			
	Interval ( minutes )	5 <b>v</b>	
	MAC	64:E8:33:44:51:88	
		Wunderground	
	Station ID		
	Station Key		
	Station Rey		
		Weathercloud	
WS6210C_V1.0.1.1	Weathercloud ID		
	Weathercloud Key		
		WeatherObservationsWebsite	
	Station ID		
	Station Key		
	Customized	💿 Disable 🛛 🔵 Enat	he
	Protocol Type Same As	🔍 Ecowitt 🛛 💿 Wun	derground
	Server IP / Hostname		
	Path	/data/report/	
		80	
	Upload Interval	60	Seconds
		Save	

Figure 34

### **8.3 Device Setting**

This page supports viewing or setting:

(1) Device sensor reception frequency (view only)

(2) Automatic Frequency Control (AFC): turn this option on when your location is busy on the sensor radio spectrum to improve signal reception.

(3) Temperature Compensation: Turn on this option to minimize sun light influence on outdoor temperature measurement if the outdoor temperature and humidity sensor installation site is not ideal. This option works with sensor arrays like WS69, WS80, WS90 and WS85. (4) Auto Time zone: Your time zone setting on ecowitt.net will be applied here.

(5) Automatic firmware upgrade

(6) Device AP Auto OFF: Enabled by default, the AP automatically shuts down when no terminals are connected; disabling this option keeps the AP continuously running. If using the system only solar-powered, do not disable this setting.

(7) Login & AP Password

(8) Restore default: During factory Reset, all indicators will flash 3 times (ON: 500ms; OFF: 500ms), followed by an automatic restart upon completion.

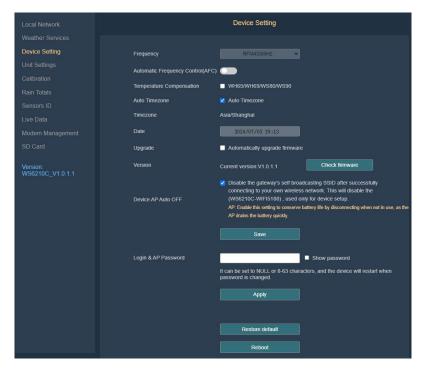


Figure 35

### 8.4 Unit Settings

Supports the following unit settings:

(1) Temperature: °C,°F

- (2) Pressure: hPa, inHg, mmHg
- (3) Wind: m/s, km/h, mph, knots

Note: Lightning distance units are the same as wind speed units:

Wind Speed Unit	Lightning Distance Unit
m/s, km/h, BFT(BFT can only be set in App/ website)	km
knots	nmi
mph, fpm(fpm can only be set in App/website)	mi

#### Table 7

(4) Rain: mm, in

(5) Solar Irradiance: Klux, W/m<sup>2</sup>, Kfc

Local Network		Unit Settings	
	Temperature	°C ✓	
Unit Settings		12	
Calibration	Pressure	hPa 🗸	
	Wind	m/s 🗸	
	Rain	mm 🗸	
Live Data			
Modem Management	Irradiance	<u>W/m²                                    </u>	
Version: WS6210C_V1.0.1.1		Save	



### 8.5 Calibration

This page supports the following data calibration:

- (1) Solar Irradiance
- (2) UV
- (3) Wind Speed
- (4) Indoor Temperature
- (5) Indoor Humidity
- (6) Absolute Pressure
- (7) Relative Pressure
- (8) Outdoor Temperature
- (9) Outdoor Humidity
- (10) Wind Direction

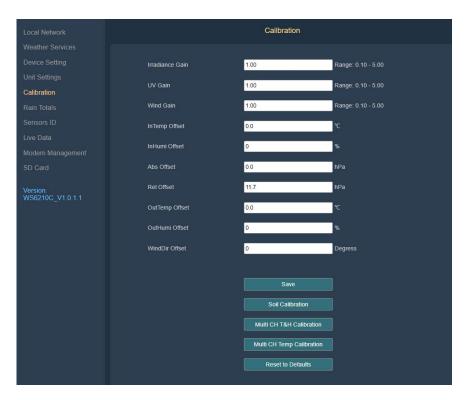


Figure 37

#### As well as:

#### (11) Soil Moisture

- (12) Multi-Channel Temperature & Humidity
- (13) Multi-Channel Temperature

Local Network		So	pil AD	
	Soil	ID	AD	Customize
	301		AD	Customize
	CH1 Soil 0%	0xE720	Now AD 49 0% AD	Customize
	0%		100% AD	320
	CH2 Soil	0xE31D	Now AD 31	Customize
	0%	UALS TO	0% AD	170
			100% AD	320
			Save	
Version: WS6210C_V1.0.1.1			Reset	

#### Figure 38

Local Network			Multi CH T&H Calibra	tion		
		ID: 0x42	Temp Offset 0.0	°C	Humi Offset 0	%
		ID: 0x93	Temp Offset 0.0	°€	Humi Offset 0	%
	СНЗ	ID: 0x9A	Temp Offset 0.0	°C	Humi Offset 0	%
	Сна	ID. UX9A	Temp Oliset 0.0			%
		ID: 0x71	Temp Offset 0.0	°C	Humi Offset 0	%
			Save			
			Reset to Defaults			
Version: WS6210C_V1.0.1.1						

Figure 39

Local Network		Multi CH Temp Calit	pration
	CH1	ID: 0x2CBD	Temp Offset 0.0 °C
Unit Settings	CH2	ID: 0x2CB5	Temp Offset 0.0 ℃
		10. 002000	
		Save	
		Reset to Defau	ilts
Version: WS6210C_V1.0.1.1			



### 8.6 Rain Totals

This page supports settings such as:

(1) Choose traditional or piezoelectric rain gauge data to be uploaded to the WU server, as only one rain gauge data can be accepted when you have both our haptic rain gauge and tipping bucket type rain gauge.

(2) Rainfall calibration

(3) Rain reset time for Daily Rain/Weekly Rain/Rainfall Season

(4) For Piezo Rain1~5 Gain calibration

Piezoelectric rain gauge working principle: raindrops fall on the sensor's surface so that the monitoring panel produces small mechanical vibration, the vibration of the mechanical stress, and the sensor produces a voltage difference corresponding to the amount of rainfall.

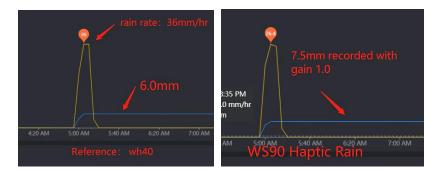
In practice, the measurement of precipitation by piezoelectric rain gauges is influenced by environmental factors such as wind, terrain, and debris. In the case of large rainfall intensity, rainfall intensity can be measured by the piezoelectric rain gauge, but the raindrops landing may have two impacts on the monitoring panel so that the measured rainfall value is larger; for minimal rainfall intensity, due to the vertical momentum is too small, so that the measured rainfall value is small. Therefore, it is necessary to calibrate the piezoelectric sensors for different rainfall intensities depending on the environment in which they are located.

WS90 and WS85 are weather stations equipped with piezoelectric rain gauges. To make your rain data more accurate, you can calibrate the rain sensor accuracy by yourself:

1. A reference is needed to record the rainfall value, and it is also important to be able to record the rain rate. Our WH40 rain sensor can be used for this purpose.

2. You can set five rain gain parameters: Piezo Rain1: Rain5. We usually leave Rain1 as it is unless you can confirm it consistently produces the same result, and then you can adjust this.

3. Please ensure that you record rain data as follows: set rain4 gain to 6/7.5, which equals 0.8. For easier management, set rain2, rain3, and rain5 all to 0.8 for now. Only when different rain rates are recorded, divide the ws90 rain by 0.8 to get 1.0 rain, and then recalculate (reference/ws90/0.8) to precisely adjust the corresponding rain gain setting.



Local Network		Rain Totals
Weather Services		
Device Setting		Piezoelectric rain gauge
- Unit Settings	Rainfall data priority	Choose which rain gauge data upload to server and display.
Calibration		
Rain Totals	Rain Day	0.0 mm
Sensors ID	Rain Week	0.0 mm
Live Data	Rain Month	0.0 mm
Modem Management		
SD Card	Rain Year	0.0 mm
Version: WS6210C_V1.0.1.1	Rain Gain	1.00 Range: 0.10 - 5.00
	Piezo Daily Rain	0.0 mm
	Piezo Weekly Rain	0.0 mm
	Piezo Monthly Rain	0.0 mm
	Piezo Yearly Rain	0.0 mm
	Piezo Rain1 Gain	1.00 When rain rate less than 4 mm/h, Range: 0.10 - 5.00
	Piezo Rain2 Gain	1.00 When rain rate less than 10 mm/h, Range: 0.10 - 5.00
	Piezo Rain3 Gain	1.00 When rain rate less than 30 mm/h, Range: 0.10 - 5.00
	Piezo Rain4 Gain	1.00 When rain rate less than 60 mm/h, Range: 0.10 - 5.00
	Piezo Rain5 Gain	1.00 When rain rate more than 60 mm/h, Range: 0.10 - 5.00
	Reset Daily Rain at	0.00 🗸
	Reset Weekly Rain at	Sunday 🗸
	Rainfall Season	January 🗸
		Reset Save

# Figure 41

### 8.7 Sensors ID

(1) Supports viewing and registering sensor ID.

(2) Viewing battery status and signal quality.

(3) By entering the "Edit" sub-page of a particular sensor, you may register the sensor by entering the sensor ID so that this sensor can be mandatorily assigned. You can also choose to disable the sensor.

It is good practice to disable all sensor ID slots of sensors which you don't have or don't use with your console/gateway in order to avoid the reception of "ghost" sensors from other weather stations in your neighbourhood.

(4) By entering the "Re-register," the gateway will learn the sensor again to ensure its presence. If a new sensor is discovered, it will be displayed here with its sensor ID updated.

Local Network			Sensors ID			
Weather Services						
Device Setting	Name		Battery	Signal	Re-register	Operating
Unit Settings	Manie				кечеунает	
Calibration	Wind & Rain	0x27EF		T	Re-register	Edit
Rain Totals	Temp & Humidity & Solar & Wind & Rain	0x598C		Lat	Re-register	Edit
Sensors ID	- **					
Live Data	Solar & Wind & Rain		Normal	2.11	Re-register	Edit
Modem Management	Solar & Wind	Learning		Ť	Re-register	Edit
SD Card	•					
Version WS6210C_V1.0.1.1	Rain	0x185C2	Normal	Lat	Re-register	Edit
W30210C_V1.0.1.1	Temp & Humidity & Pressure	0x7F		Ť.	Re-register	Edit
				•		50
	Temp & Humidity	Learning		Ť	Re-register	Edit
	Temp & Humidity & Solar & Wind	Learning		۲	Re-register	Edit
	Lightning	0x12A83		Tal	Re-register	Edit
					roregiaer	
	PM25 & PM10 & CO2	2 Learning		۲	Re-register	Edit
	PM25 & PM10 & CO2	Learning		Ŧ	Re-register	Edit
	PM2.5 CH2	Learning		Ť	Re-register	Edit
	PM2.5 CH3	Learning		Ť	Re-register	Edit
				-		
	PM2.5 CH4	Learning		Ŧ	Re-register	Edit
	Leak CH1	0xCED7		1.0	Re-register	Edit
				Y	Re-register	Edit
	Leak CH2	Learning			Кечедные	
	Leak CH3	Learning		Ť	Re register	Edit
	Leak CH4	Learning		Ť	Re-register	Edit
	Temp & Humidity CH		Normal	Lat	Re-register	Edit
	Temp & Humidily CH2	2 0x93	Normal	₹.ul	Re-register	Edit
	Temp & Humidity CH3	3 0x9A	Normal	¥.ul	Re-register	Edit
	Temp & Humidity CH4	4 Learning		Ť	Re-register	Edit
					Demili	
	Temp & Humidity CH	5 Learning		Ť	Re register	Edit
	Temp & Humidity CH6		Normal	1.al	Re-register	Edit

Figure 42

	Temp & Humidity CH7	Leaming		Ť	Re-register	Edit
	Temp & Humidity CH8	Learning		Ť	Re-register	Edit
7	Soil moisture CH1	0xE720	Normal	<b>7.</b> 1	Re-register	Edit
7	Soil moisture CH2	0xE31D	Normal	1.al	Re-register	Edit
7	Soil moisture CH3	Learning		Ť	Re-register	Edit
7	Soil moisture CH4	Learning		Ť	Re-register	Edit
7	Soil moisture CH5	Learning		Ť	Re-register	
7	Soil moisture CH6	Learning		Ť	Re-register	
T	Soil moisture CH7	Learning		Ÿ	Re-register	Edit
1	Soll moisture CH8	Learning		Ť	Re-register	Edit
Ļ	Temp CH1	0x2CBD	m	<b>1</b> .11	Re-register	Edit
Ų.	Temp CH2	0x2CB5	•	<b>7.</b> 11	Re-register	Edit
Į.	Temp CH3	Learning		Ť	Re-register	Edit
Ļ	Temp CH4	Leaming		Ÿ	Re-register	Edit
Į.	Temp CH5	Learning		Y	Re-register	Edit
Ţ	Temp CH6	Learning		Ť	Re-register	Edit
	Temp CH7	Leaming		Ť	Re-register	Edit
	Temp CH8	Learning		Ť	Re-register	Edit
-5	Leaf Wetness CH1	0x3013	•	<b>1</b> .11	Re-register	Edit
-5	Leaf Wetness CH2	0x3031		ħal	Re-register	Edit
-5	Leaf Wetness CH3	Learning		Ť	Re-register	Edit
-0	Leaf Wetness CH4	Learning		¥	Re-register	Edit
	Leaf Wetness CH5	Learning		Ŧ	Re-register	Edit
	Leaf Wetness CH6	Learning		Ť	Re-register	Edit
	Leaf Wetness CH7	Learning		Ť	Re-register	Edit
-5.	Leaf Wetness CH8	Learning		Ť	Re-register	Edit

Figure 43

### 8.8 Live Data

(1) Display connected sensor data.

(2) Show WS6210's battery voltage and solar charging power supply voltage.

(3) You can edit the sensor name by clicking the pencil icon. This name is only reflected on this device, it will not update your dashboard tile name at ecowitt.net.

Weather Services       Outdoor Temperature       Outdoor Humidity       Feels Like         Devices Setting       Dew Point       Wind Speed       Gust Speed         Calitration       14.9 °C       0.0 m/s       Outdoor Mumidity       Feels Like         Sensors ID       Day Wind Max       Solar Irradiance       UV-Index       0.0 m/s         Sonsors ID       Day Wind Max       Solar Irradiance       UV-Index       0         Sonsors ID       Day Wind Max       Solar Irradiance       UV-Index       0         Sonsors ID       Day Wind Max       Solar Irradiance       UV-Index       0         Sol Card       203 *       Solar Irradiance       UV-Index       0         Version       Solar Irradiance       0.00 m/m       0.00 m/m       0         Sol Card       Solar Irradiance       0.00 m/m       0.00 m/m       0         Wessol Coc_VI 0.11       Battery Voltage       External Power Voltage       Piezo Ran       Piezo Ran<	Local Network				Ļ	ive Data	ŝ			
Device Setting       26.4 °C       49%       26.4 °C         Unit Settings       Dew Point       Wind Spaed       Gust Speed         Catbration       14.9 °C       0.0 m/s       0.0 m/s         Rain Totals       Day Wind Max       Solar Irradiance       UV.Index         Sensors ID       0.0 m/s       0.00 W/m²       0         Modein Management       Wind Direction       203 *       0.00 W/m²       0         SD Card       23 *       Indeer Humidhy       Absolute Pressure       Relative Pressure       0         Version       24.8 °C       55%       1008.4 hPa       1020.1 hPa       #         Rain Event       0.0 mm       Rain Event       0.0 mm       # </td <td>Weather Services</td> <td>Outdoor Terr</td> <td>nerature</td> <td>0</td> <td>tdoor</td> <td>Humidity</td> <td></td> <td>Fool</td> <td>stiko</td> <td></td>	Weather Services	Outdoor Terr	nerature	0	tdoor	Humidity		Fool	stiko	
Unit Satings:       Dow Point       0.0 m/s       0.0 m/s         Rain Totals:       Day Wind Max       Solar Irradiance       0.0 m/s         Sensors: ID       Day Wind Max       0.00 Winf       0         Modelm Management       Wind Direction       0.00 Winf       0         Solar Irradiance       0.00 Winf       0       0         Version:       Battery Voltage       External Power Voltage       0.38 V         Version:       Indoor Temperature       indoor Humidity       Absolute Pressure       Relative Pressure       0         Version:       Rain Event       0.0 mm       10000: Humidity       Absolute Pressure       Plezo Rain	Device Setting									
Dew Pont     Wind Speed     Gust Speed       Rain Totals     Day Wind Max     Solar triadiance     UV/Index       Sonsors ID     Day Wind Max     Solar triadiance     UV/Index       Live Data     0.0 m/s     0.00 W/mt     0       Modem Managoment     203 *     0.00 W/mt     0       SD Card     203 *     0.00 mm     0       Version     Battery Voltage     External Power Voltage     Notale       Sto Card     0.00 mm     Rain Event     0.00 mm       Rain Event     0.0 mm     Rain Event     0.00 mm       Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event										
Rain Totals     Day Wind Max     Solar Instance     UV-Index       Lvo Data     0.0 m/s     Solar Instance     UV-Index       Modern Management     203 *     0.0 m/s     0.0 W/m'     0       SD Card     203 *     Indoor Humidity     Absolute Pressure     Notestant       WSS210C_V10.11     Battery Voltage     External Power Voltage     Indoor Humidity     Absolute Pressure     Relative Pressure       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event     0.0 mm     Rain Event     0.0 mm     Rain Event     0.0 mm       Rain Event <t< td=""><td>AND DO DO DO DO DO</td><td>Dew P</td><td>pint</td><td></td><td>Wind</td><td>Speed</td><td></td><td></td><td>Speed</td><td></td></t<>	AND DO DO DO DO DO	Dew P	pint		Wind	Speed			Speed	
Day Wind Max 0.0 m/s       Solar Irradiance 0.00 W/m <sup>1</sup> UV-Index 0         Modern Management SD Card       Wind Direction 203*       Wind Direction 203*         Version: WiS0210C_V1.0.1.1       Battery Voltage 5.10 V       Console External Power Voltage 0.38 V       Image: Console 0.38 V         Indoor Temperature Rain Event Rain Event Rain Event Rain Event Rain Event Rain Week       Indoor Temperature 0.00 mm       Absolute Pressure 1020.1 hPa       Relative Pressure 1020.1 hPa         Rain Event Rain Event Rain Event Rain Week       0.0 mm       Rain Event 0.00 mm       0.00 mm         Rain Event Rain Week       0.0 mm       Rain Event 0.00 mm       0.00 mm         Rain Week       0.0 mm       Rain Veel 0.0 mm       0.0 mm         Indoor Temperature Rain Week       0.0 mm       Rain Xeent Rain Veel 0.0 mm       0.0 mm         Rain Week       0.0 mm       Rain Veel 0.0 mm       0.0 mm       Rain Veel 0.0 mm         Indoor Temperature Rain Veel 0.0 mm       CH1 Leak       Normal       Image: CH2 1000 mm       Harridhy 28.1 °C       Nore         Indoor Temperature 28.9 °C       CH3 45%       UV-Index 0.0 mm       CH2 1000 mm       Nore	Calibration	14.9								
Live Data       0.0 m/s       0.00 W/mt <sup>4</sup> 0         Modern Management       203 °       203 °         SD Card       203 °       10000 Humidity       Absolute Pressure       Relative Pressure       0         Version:       Undoor Temperature       Indoor Humidity       Absolute Pressure       Relative Pressure       0         Rain       0 mm <sup>+</sup> Rain Event       0.0 mm <sup>+</sup> Rain Rate       0.0 mm       1000.1 hPa       1	Rain Totals									
Live Data         Modern Management         SD Card         Version:         WS0210C_V1.0.1.1         Battery Voltage         External Power Voltage         5.10 V       0.38 V         Indoor Temperature       Indoor Humidity         24.8 °C       55%         1008.4 hPa       1002.1 hPa         Rain Event       0.0 mm         Rain Rate       0.0 mm         Rain North       0.0 mm         Rain North       0.0 mm         Rain North       0.0 mm         Rain Week       0.0 mm         Rain North       0.0 mm         Rain Week       0.0 mm         Rain W	Sensors ID			50						
SD Card       203 *         Version: WSS210C_V1.0.1.1       Battery Voltage 5.10 V       Console External Power Voltage 0.38 V       Indoor Furmidity 0.38 V       Absolute Pressure 1002.1 hPa       Relative Pressure 1002.1 hPa         Rain Rain Event Rain Event Rain Day 00 mm Rain Week       Indoor Furmidity 24.8 °C       Absolute Pressure 1002.1 hPa       Pecco Rain Rain Event 00 mm Rain Rain 200 mm Rain Week       Pecco Rain Rain Event 00 mm Rain Week       Pecco Rain Rain W	Live Data									
SD Gard       Console         Version:       Battery Voltage         External Power Voltage       S.10 V         1ndoor Temperature       Indoor Humidity         24.8 °C       55%         1008.4 hPa       1002.1 hPa         Piezo Rain       Piezo Rain         Rain Event       0.0 mm         Rain Rate       0.0 mm         Rain Roteth       0.0 mm         Rain Roteth       0.0 mm         Rain North       0.0 mm         Rain Workh       0.0 mm	Modem Management	Wind Dire	ection							
Version: WSS210C_V1.0.1.1       Console Battery Voltage 5.10 V       Console External Power Voltage 0.38 V         Indoor Temperature 24.8 °C       Indoor Temperature 55%       Absolute Pressure 1008.4 hPa       Rataleve Pressure 1008.4 hPa       Rataleve Pressure 1000.1 hPa         Rain Rain Event Rain Date 0.0 mm       0.0 mm       Rain Event Rain Rate 0.0 mm       Piezo Rain Rain Neek 0.0 mm       Piezo Rain Rain Neek 0.0 mm       Piezo Rain Rain Neek 0.0 mm         Rain Date Rain Neek       0.0 mm       Rain Neek 0.0 mm       0.0 mm       Rain Neek 0.0 mm       0.0 mm         Indoor Temperature Rain Month       0.0 mm       Rain Neek 0.0 mm       0.0 mm       Rain Neek 0.0 mm       0.0 mm         Indoor Class Uters       Indoor Temperature Indoor Class Uters       Daty Count Indoor Class Interestang       Piezo Rain Rain Neek 0.0 mm       Piezo Rain Rain Neek 0.0 mm       Rain Neek 0.0 mm         Indoor Temperature Indoor Class Uters       Indoor Temperature Solve       Piezo Rain Rain Neek 0.0 mm       Rain Neek 0.0 mm       Rain Neek 0.0 mm         Indoor Temperature Indoor Class Interestang       Daty Count Indoor Class Interestang       Piezo Rain Rain Neek 0.0 mm       Piezo Rain Rain Neek 0.0 mm       Piezo Rain Rain Neek 0.0 mm         Indoor Temperature Indoor Class Interestang       Chii None       Piezo Rain Rain Neek None       Piezo Rain Rain Neek None       Piezo Rain Rain Neek None       Piezo Rain Rain Neek None </td <td>SD Card</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	SD Card									
Wissourdo V1.0.1.1       Battery Voltage       External Power Voltage         5.10 V       0.38 V         Indoor Temperature       Indoor Humidity       Absolute Pressure       Relative Pressure         Rain       0.0 mm       755%       Absolute Pressure       1020.1 hPa         Rain       Event       0.0 mm/H       7480 Absolute Pressure       1020.1 hPa         Rain Event       0.0 mm/H       Rain Rate       0.0 mm/H       7481 Rate       0.0 mm         Rain Week       0.0 mm       Rain North       0.0 mm       7481 North       769 North       7881 North	CO GUID									
5.10 V     0.38 V       Indcor Temperature     Indcor Temperature       24.8 °C     55%       None       Rain       Normal       Image: CH1       Image: CH2       CH3       Tomporature       CH3       CH4       Tomporature       Hamsthy       28 9°C	Version:									
Indoor Temperature       Indoor Humidity       Absolute Pressure       Relative Pressure       Indoor Image         Rain       24.8 °C       55%       1008.4 hPa       1020.1 hPa       Indoor Image         Rain Event       0.0 mm       Rain Rate       0.0 mm/Hi       Rain Rate       0.0 mm/Hi         Rain Rate       0.0 mm       Rain Rate       0.0 mm/Hi       Rain Rate       0.0 mm/Hi         Rain Month       0.0 mm       Rain Month       0.0 mm       Rain Month       0.0 mm         Rain Month       0.0 mm       Rain Month       0.0 mm       Rain Month       0.0 mm         Rain Month       0.0 mm       Rain Month       0.0 mm       Rain Month       0.0 mm         Rain Month       0.0 mm       Rain Month       0.0 mm       Rain Month       0.0 mm         Rain Month       0.0 mm       Rain Month       0.0 mm       Rain Month       0.0 mm         *       CH1 Leak       Normal       *       *       *       *         *       CH1 Leak       Normal       *       *       *       *         *       CH3       Nore       *       *       *       *       *         *       CH3       0%       *       <	WS6210C_V1.0.1.1									
Rain     24.8 °C     55%     1008.4 hP3     1020.1 hP3       Rain     Rain     0.0 mm/Hi     Rain Rate     0.0 mm/Hi       Rain Day     0.0 mm     Rain Rate     0.0 mm/Hi       Rain Day     0.0 mm     Rain Rate     0.0 mm       Rain Day     0.0 mm     Rain Rate     0.0 mm       Rain Week     0.0 mm     Rain Neek     0.0 mm       Rain Week     0.0 mm     Rain Week     0.0 mm       Rain Year     0.0 mm     Rain Week     0.0 mm       CH1 Leak     Normal     Image: State Stat		5.10 V		30 V						
Rain     24.8 °C     55%     1008.4 hP3     1020.1 hP3       Rain     Rain     0.0 mm/Hi     Rain Rate     0.0 mm/Hi       Rain Day     0.0 mm     Rain Rate     0.0 mm/Hi       Rain Day     0.0 mm     Rain Rate     0.0 mm       Rain Day     0.0 mm     Rain Rate     0.0 mm       Rain Week     0.0 mm     Rain Neek     0.0 mm       Rain Week     0.0 mm     Rain Week     0.0 mm       Rain Year     0.0 mm     Rain Week     0.0 mm       CH1 Leak     Normal     Image: State Stat		Indoor Tomooral	uro Indoo	r Humidity		Abcoluto	Droccuro	Dolativo Dr	Seuro	
Rain       Rain       0.0 mm       Rain       Rain       0.0 mm         Rain       Rain       0.0 mm       Rain										
Rain Event       0.0 mm         Rain Rate       0.0 mm/Hr         Rain Day       0.0 mm         Rain Day       0.0 mm         Rain Rate       0.0 mm/Hr         Rain Day       0.0 mm         Rain Week       0.0 mm         CH1 Leak       Normal         CH1 Leak       Normal         CH1       Temperature         CH3       Temperature         Z6.1 °C       None         CH3       CH3         Temperature       Humidity         28.9 °C       45%         CH2 Soil       0%         CH3 Temperature       24.8 °C         CH3 Temperature       25.3 °C										
Rain Rate       0.0 mm/Ht       Rain Centa							ain			
Rain Daty     0.0 mm       Rain Daty     0.0 mm       Rain Month     0.0 mm       Rain Month     0.0 mm       Rain Year     0.0 mm       Rain Year     0.0 mm       A Last Dictance     Last Timestamp       I Last Dictance     Last Timestamp       I CH1 Leak     Normal       I Temperature     Humidity       25.1 °C     None       I CH1 Soll     0%       I CH1 Tempenature     24.8 °C										
Rain Week     0.0 mm     Rain Week     0.0 mm       Rain Month     0.0 mm     Rain Week     0.0 mm       Rain Month     0.0 mm     Rain Week     0.0 mm       Rain Year     0.0 mm     Rain Week     0.0 mm       1     Last Distance     Last Timestamp     Daily Count     Pain       1       0     Pain       2     CH1 Leak     Normal     Pain       1     Temperature     Humidity       25.1 °C     None       26.9 °C     45%       26.9 °C     45%       26.4 °C     None       1     CH1 Soil     0%       2     CH1 Temperature     24.8 °C		2								
Rain Month     0.0 mm       Rain Year     0.0 mm       Rain Year     0.0 mm       Ain Year     0.0 mm       4     Last Distance     Last Timestamp     Daily Count       5     CH1 Leak     Normal       1     CH1     Last Timestamp       2     CH1     Humidity       2     CH1       2     CH1       2     CH3       Temperature     CH3       2     CH1       2     CH3       2     CH1       2     CH1       2     CH3       Temperature     CH6       1     CH1       2     CH2        2     CH2										
Rain Year       0.0 mm       Rain Year       0.0 mm         1       Last Distance       Last Timestamp       Daily Count       D         1       Last Distance       Last Timestamp       Daily Count       D         1       CH1 Leak       Normal       D         1       CH1 Leak       Normal       D         1       CH1       Humdity       Temperature         25.1 °C       CH3       Humdity       Z6.1 °C         1       CH3       Humdity       Z8.9 °C       Humidity         28.9 °C       45%       O%       O%       O%         2       CH1 Temperature       24.8 °C       CH2 Temperature       25.3 °C								1000		
CH1 Leak     Normal       CH1 Leak     Normal       CH1 Temperature     Humidity       25.1 °C     None       CH3     Humidity       Temperature     CH3       Temperature     CH3       Temperature     CH3       Temperature     CH3       Temperature     CH3       Temperature     CH4       CH3     CH4       Temperature     CH4       CH3     CH4       CH4     CH4       CH4     CH4       CH4     O%       CH1 Soll     O%       CH2 Temperature     25.3 °C		Rain Year	0.0 mm			Rain Yea	ar	0.0 mm		
CH1 Leak     Normal       CH1 Leak     Normal       CH1 Temperature     Humidity       25.1 °C     None       CH3     Humidity       Temperature     CH3       Temperature     CH3       Temperature     CH3       Temperature     CH3       Temperature     CH3       Temperature     CH4       CH3     CH4       Temperature     CH4       CH3     CH4       CH4     CH4       CH4     CH4       CH4     O%       CH1 Soll     O%       CH2 Temperature     25.3 °C		A Last Distance	Last Timastamo	Daily Count	-					
CH1     CH2       Temperature     Humidity       25.1 °C     None       CH3     CH3       Temperature     CH6       Temperature     Humidity       28.9 °C     45%       CH1 Sol     0%       CH1 Temperature     24.8 °C										
CH1     CH2       Temperature     Humidity       25.1 °C     None       CH3     CH3       Temperature     CH6       Temperature     Humidity       28.9 °C     45%       CH1 Sol     0%       CH1 Temperature     24.8 °C										
CH1     CH2       Temperature     Humidity       25.1 °C     None       CH3     CH3       Temperature     CH6       Temperature     Humidity       28.9 °C     45%       CH1 Sol     0%       CH1 Temperature     24.8 °C		Chillesk								
Temperature 25.1 °C     Humidity None     Temperature 26.1 °C     Humidity None       CH3 Temperature 28.9 °C     Humidity 45%     CH6 Temperature 28.4 °C     Humidity None       CH4 Sol     0%     CH2 Sol     0%       CH1 Temperature     24.8 °C     CH2 Temperature     25.3 °C		GITLEAK								
25.1 °C     None     28.1 °C     None       CH3     CH3     CH6       Temperature     Humidity     28.4 °C     None       CH1 Sol     0%     CH2 Sol     0%       CH1 Temperature     24.8 °C     CH2 Temperature     25.3 °C										
CH3       CH3       CH6         Tomporature       Humidity       Tomporature       Humidity         26.9 °C       45%       28.4 °C       None         CH1 Solt       0%       CH2 Solt       0%         CH1 Tempenature       24.8 °C       CH2 Tempenature       25.3 °C       0%										
Temperature 28.9 °C     Humidity 45%     Temperature 28.4 °C     Humidity None       CH1 Sol     0%     CH2 Sol     0%       CH1 Temperature     24.8 °C     CH2 Temperature     25.3 °C		25.1 °C					26.1 °C			
28.9 °C         45%         28.4 °C         None           CH1 Soil         0%         CH2 Soil         0%           CH1 Temperature         24.8 °C         24.8 °C         CH2 Temperature         25.3 °C		1	СНЗ			1		CH6		
CH1 Soil         0%         CH2 Soil         0%           CH1 Temperature         24.8 °C         III         CH2 Temperature         25.3 °C         IIII							Temperature		Humidity	
n CH1 Temperature 24.8 °C 💿 n CH2 Temperature 25.3 °C 💷										
n CH1 Temperature 24.8 °C 💿 n CH2 Temperature 25.3 °C 💷		CH1 Sol				120	CH2 Soil			
		Cirroou				-				
/ CH1 Lear 0% 📑 / CH2 Lear 0% 🗖		CH1 Temper	ature				CH2 Temperati			
CHI Lear 0% 🛄 🖊 CH2 Lear 0% 🛄										
		CH1 Leaf			-	1	CH2 Leaf			

Figure 44

### 8.9 Modem Management

7.9.1 Management Page Description

(1) Display basic information of the Modem:

1 SIM Card: Inserted or Not Inserted

2 **RSSI:** Signal strength, used to measure signal quality

③ IMSI: International Mobile Subscriber Identity, used to identify a SIM card uniquely

(4) IMEI: International Mobile Equipment Identity, used to identify a 4G module uniquely

<sup>(5)</sup> **ICCID:** Integrated Circuit Card Identifier, a unique identifier for the SIM card

6 IP address: Currently assigned local area network IP address

 $\bigcirc$  Registered Operator: The operator with which the device is registered

8 Network Standard: Network protocol and frequency bands supported by the device

(9) APN: Access Point Name, used for data communication and can be edited. Correct APN settings are necessary for proper use if using a custom SIM card

(1) Modem Model: Model of the 4G module

(1) Modem Version: Firmware version of the 4G module

(2) Support real-time display of Modem Log

(3) Support downloading Modem Log to local storage

Local Network	Mode	em Management
Weather Services		RSSI
Device Setting	SIM Card : Not Inserted	RSSI:T
Unit Settings		IMEL. IP:0.0.0.0
Calibration	Registered Operator :	Network Standard
Rain Totals	APN : Edit	Modem Model :
Sensors ID	Modem Version :	
Live Data		
Modem Management	Log :	
SD Card	2024-01-01 00:00:04 -> AT 2024-01-01 00:00:04 -> AT 2024-01-01 00:00:04 -> AT 2024-01-01 00:00:04 -> AT 2024-01-01 00:00:04 -< AT	
Version: WS6210C_V1.0.1.1	2024-01-01 00:00.04 ~ OK 2024-01-01 00:00.04 ~ ATE0 2024-01-01 00:00.04 ~ ATE0 2024-01-01 00:00.06 ~ OK 2024-01-01 00:00.06 ~ OK 2024-01-01 00:00.06 ~ Manufacturer: ArtM2M Model: Ar795UG Revision: AnMM: Air795UG (V401880 LTE AT ATVer: 294754330bbc9607003593c32040e01a1aae9a0 HWYer: A11 Buildlime: Nov 21 2023 16:36:18 IMEL: 800549070030908 ICCID: MSI: 2024-01-01 00:00.06 ~ OK 2024-01-01 00:00.06 ~ CK 2024-01-01 00:00.06 ~ CCRDMODE: 255 2024-01-01 00:00.06 ~ + CCPIN: SIN REMOVED 2024-01-01 00:00.06 ~ + ATCPIN? 2024-01-03 17:24:59 ~ AT 2024-07-03 17:25:00 ~ ATE0 2024-07:03 17:25:00 ~ ATE0 2024-07:03 17:25:00 ~ ATE0	3d

#### Figure 45

Check the top section to see if it was successful.

Click "Download" to download the SIM card data log.

The log file reveals the cellular network connection status in detail. It is useful when you need to investigate the connection in detail. Thus, downloading the log and sending it to customer support is quite useful when you seek help.

# 8.9.2 Troubleshooting Modem Issues

(1) Communication Issue with 4G Module

**Symptom**: On the Modem Management page of the WebUI, SIM Card status shows "Not Inserted" and the Log only displays "-> AT".

	Modem Management
SIM Card : Not Inserted	RSSI:
IMSI :	IMEI :
ICCID :	IP : 0.0.0.0
Registered Operator :	Network Standard :
APN: Edit	Modem Model :
Modem Version :	
Log :	
2024-01-01 00:00:03 -> AT 2024-01-01 00:00:03 -> AT	
2024-01-01 00:00:04 -> AT 2024-01-01 00:00:04 -> AT	
2024-01-01 00:00:05 -> AT	
2024-01-01 00:00:05 -> AT 2024-01-01 00:00:06 -> AT	
2024-01-01 00:00:06 -> AT 2024-01-01 00:00:07 -> AT	
2024-01-01 00:00:08 -> AT	
2024-01-01 00:00:08 -> AT 2024-01-01 00:00:09 -> AT	
2024-01-01 00:00:09 -> AT 2024-01-01 00:00:10 -> AT	
2024-01-01 00:00:10 -> AT	
2024-01-01 00:00:11 -> AT 2024-01-01 00:00:11 -> AT	
2024-01-01 00:00:12 -> AT 2024-01-01 00:00:12 -> AT	
2024-01-01 00:00:12 -> AT	
download	

Figure 46

**Analysis**: Failure in communication between the main control and the module.

**Solution**: Try power cycling the device. If the issue persists, the 4G module may be damaged or there could be a circuitry issue, requiring replacement of the 4G module board.

(2) SIM Card Not Detected

**Symptom**: On the Modem Management page of the WEB UI, SIM Card status shows "Not Inserted" and the Log shows "-> AT+CPIN?" followed by "<- +CME ERROR: 10".

	Modem Management	
SIM Card : Not Inserted IMSI : ICCID : Registered Operator : APN : Edit Modem Version :	RSSI IMEI : IP : 0.0.0.0 Network Standard : Modem Model :	
Log: 2024-01-01 00:00:03 -> AT 2024-01-01 00:00:03 -> AT 2024-01-01 00:00:04 -> AT 2024-01-01 00:00:04 -> AT 20224-01-01 00:00:04 -> CK 20224-01-01 00:00:06 -> CK 20224-01-01 00:00:07 -> AT+CPINY 20224-01-01 00:00:07 -> CK-0KE ERFOR: 10 2024-01-01 00:00:07 -> CK-0KE ERFOR: 1	ucen	

Figure 47

**Analysis**: Possible reasons include SIM card not inserted properly, loose SIM card, damaged SIM card, or faulty 4G module board.

**Solution**: Verify SIM card readiness, replace SIM card if necessary, or replace the 4G module board.

(3) Poor Network Signal Strength

**Symptom**: On the Modem Management page of the WEB UI, SIM Card status shows "Inserted" and the Log repeatedly shows "-> AT+CSQ" followed by "<- +CSQ: 99,99".

SIM Card : Inserted	RSSI	
IMSI :	IMEI :	
ICCID :	IP : 0.0.0.0	
Registered Operator :	Network Standard :	
APN: Edit	Modem Model :	
Modem Version :		
-		
Log :		
2024-01-01 00:20:19 -> AT+CSQ 2024-01-01 00:20:19 <- +CSQ: 99,99		<u>^</u>
2024-01-01 00:20:19 <- OK		
2024-01-01 00:20:21 -> AT+CSQ 2024-01-01 00:20:21 <- +CSQ: 99:99		
2024-01-01 00:20:21 <- OK 2024-01-01 00:20:23 -> AT+CSQ		
2024-01-01 00:20:23 <- +CSQ: 99,99 2024-01-01 00:20:23 <- OK		
2024-01-01 00:20:25 -> AT+CSQ 2024-01-01 00:20:25 <- +CSQ: 99,99		
2024-01-01 00:20:25 <- OK		
2024-01-01 00:20:27 -> AT+CSQ 2024-01-01 00:20:27 <- +CSQ: 99.99		
2024-01-01 00:20:27 <- OK 2024-01-01 00:20:29 -> AT+CSQ		
2024-01-01 00:20:29 <- +CSQ: 99,99		
2024-01-01 00:20:29 <- OK		
		×
download		

Figure 48

**Analysis**: Repeated occurrences of "-> AT+CSQ" and "<- +CSQ: 99,99" indicate poor network signal quality.

Solution: Check the antenna connection and verify SIM card quality.

(4) SIM Card Attach to Network Failure

**Symptom**: On the Modem Management page of the WEB UI, SIM Card status shows "Inserted" and the Log shows multiple occurrences of "<+CREG: 0,5", "<- +CREG: 0,1", and "<- +CGATT: 0".

SIM Card : Inserted IMSI : 234500055115447 ICCID : 89883030000057338532 Registered Operator : APN : Edit Modem Version : AirM2M_Air795UG_V401881_LTE_AT	RSSI: <b>ไ. II</b> IMEI : 860549070032094 IP : 0.0.0.0 Network Standard : Modem Model : Air795UG
Log : 2024-01-01 00:46:08 -> AT+CREG? 2024-01-01 00:46:08 -> CREG: 0.5 2024-01-01 00:46:09 -> AT+CGATT? 2024-01-01 00:46:09 -> CGATT 0 2024-01-01 00:46:09 -> CGATT 0 2024-01-01 00:46:11 -> AT+CREG? 2024-01-01 00:46:11 -> CREG: 0.5 2024-01-01 00:46:12 -> CATT? 2024-01-01 00:46:12 -> AT+CGATT? 2024-01-01 00:46:12 -> CGATT 0 2024-01-01 00:46:12 -> CGATT 0 2024-01-01 00:46:14 -> AT+CREG? 2024-01-01 00:46:14 -> CREG: 0.5 2024-01-01 00:46:15 -> CK	

Figure 49

**Analysis**: "<- +CREG: 0,5" and "<- +CREG: 0,1" indicate successful registration, while "<- +CGATT: 0" indicates failure to attach to the network. This could be due to SIM card being tied to a specific IMEI or running out of data.

**Solution**: Check SIM card status (payment, validity) or replace SIM card if necessary.

(5) SIM Card Internet Connection Issue

**Symptom**: On the Modem Management page of the WebUI, SIM Card status shows "Inserted" and the 4G module obtains an IP address, but the Log displays "<- +CDNSGIP: 0,8".

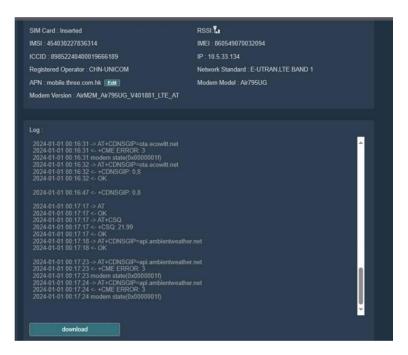


Figure 50

Analysis: Indicates a problem with the SIM card.

**Solution**: Check SIM card status (payment, validity) or replace SIM card if necessary.

### 8.10 SD Card Management

(1) **SD card file system format**: Only FAT32 is supported. For cards larger than 32GB, use the Rufus tool to format the SD card to FAT32. Download the tool from <u>https://rufus.ie/en/</u>.

**Tip:** When replacing with a higher-capacity card, please be mindful of the memory card's maximum read/write cycles and lifespan.

(2) **Real-time status display and hot-swap support**: The system monitors the SD card's status in real-time and allows for its insertion or removal without restarting the device.

(3) **SD card information display**: The interface shows detailed SD card information, including storage capacity and read/write frequency.

(4) **Multi-level directory management**: The system adopts a multi-level directory structure for easy file categorization and management by users.

(5) **Sensor data storage**: Data collected by sensors is saved in .csv format in the root directory of the SD card, facilitating direct access and analysis of data.

(6) **Log file management**: The system generates new log files daily, saved in .txt format. All log files are automatically categorized and stored in respective folders by month, facilitating retrieval and management of historical data.

(7) **File filtering mechanism**: The system automatically filters out non-gateway-generated files, ensuring storage space is allocated for important data and avoiding unnecessary data redundancy.

(8) **File operations support**: Users can download and delete individual files, providing flexible file management capabilities.

(9) **Customizable save intervals**: The system allows users to adjust save intervals for data and log files according to specific recording needs.

#### SD Card

Name : SZYL	Type : SDHC/
Speed : 20 MHz	Size : 7580 M

#### Current directory, root director

File Name	Size (Bytes)	Operation
log		
202407C.csv		Download Delete
202407Allsensors_C.csv	1586	Download Delete
202401A.csv	4924	Download Delete
202401Alisensors_A.csv	15234	Download Delete
202401B.csv	3843	Download Delete
202401Allsensors B.csv	12436	Download Delete

Sensor data is saved in the root directory. The 'log' folder stores operational logs of re-product.

Downloading	SD Card 3 Download in progress		Download progre	ss 🗎	202407058_log (2).txt 105 KB • Resuming	^
Name : SZYL				B	202407058_log (1).txt 866 K8 • Done	
Speed : 20 MHz	Size : 7580 MB				20240707A log (2).txt	
Interval : 5 minutes Edit				B	697 K8 • 22 minutes ago	
Current access participation	th 2 Dov	vnload file button		B	20240707A_log (1).txt 697 KB + 23 minutes ago	
Path: /log/202407 File Name	Size (Bytes)	Opera	ation		20240708A_log (1).txt 748 K8 • 23 minutes ago	
20240703A_log.txt	88743	Download	Delete			
20240704A_log txt	249995	Download	Delete	E	202407098_log (2).txt 13.3 KB + 23 minutes ago	
20240704B_log.txt	51116	Download	Delete			
20240705B_log.txt	887188	Download	Delete		202407098_log (1).txt 13.3 KB • 23 minutes ago	
20240705A_log.txt	372719	Download	Delete	B	20240709A log.txt	
20240706A_log.txt	714059	Download	Delete		318 KB • 23 minutes ago	
20240707A_log.txt	714134	Download	Delete		20240708A lon.txt	~
20240708A_log.txt	766253	Download	Delete	Full	download history	ß
20240709A_log.txt	326086	Download	Delete			
202407098_log.txt	13666	Download	Delete			
20240709C log.txt	11811	Download	Delete			

Figure 51

### 8.11 Firmware updates

Firmware Automatic Upgrade: If automatic firmware update is enabled on the web interface and new firmware is detected, the product will enter OTA (over the air, here: WiFi or 4G) mode and automatically restart upon completion. (Automatic update check interval is 24 hours)

Manual Upgrade: Access the local web page (either via the gateway AP 192.168.1.4 or via the local network http://IP-address-of-the-gateway, navigate to the device settings page, click on 'Check Version,' and if a new version is found, click "Upgrade Version."

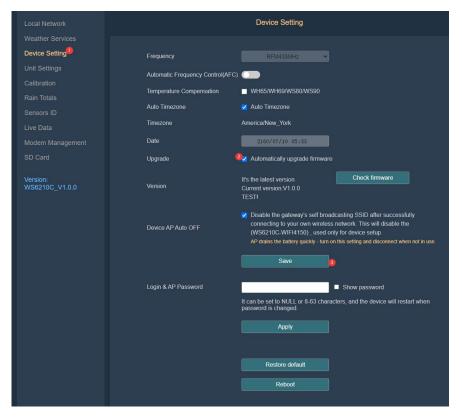


Figure 52

### 9. Product Features

- Networking: Supports Wi-Fi and 4G, prioritizing Wi-Fi for data upload to the weather station server if available.
- Sensor Support: Receives data from almost all ecowitt sensors, viewable via a web interface and Ecowitt app.
- Web Functions: Supports web configuration, sensor data viewing, server settings, calibration parameters, and Sensor ID settings.
- IoT Functionality: Compatible with IoT devices: WFC01 and AC1100.
- Automation: Automatic time zone and network time acquisition, unit settings.
- Models for 433MHz, 868MHz, 915MHz (and 920.9MHz) available.
- Integrated SD card data management: no extra APP or tools needed.

## **10.** Specifications

Model	WS6210	
Name	4G & Wi-Fi Weather Station Receiver Mobile Gateway	
Dimensions	187*138*55(mm) L*W*H	
Weight	694.5g (8 batteries involved) 457g (WS6210 only)	
Material of Plastic Casing	PC	
Sim card	Nano-SIM	
SD card	8G Micro SD	

Cellular and Wireless	Support LTE 3GPP Rel.13 technology, support 4G network
Supported Brand	4G LTE-FDD B1/B2/B3/B4/B5/B7/B8/B12/B13/B17/B18/B19/B20/B25/B 26/B28/B66
Diana	4G LTE-TDD B34/B38/B39/B40/B41 2G GSM 850/900/1800/1900
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 Wireless Range	Over 30 meters (in open areas)
	12V solar panel
Power Supply	(or DC power supply with USB connector, input 5-15V, not included)
Indicator Light	Unlock, RF, Wi-Fi, 4G
Button	Touch button: Reset, AP Physical button: Power
Operating Temperature	-20 to 60°C (-4 to 140°F)
Port Material	2-core waterproof aviation connector
Battery Capacity	4800 mAh @5V
Pattery Life	20 days (5-minute upload interval, AP off, not connected to IoT Sub device)
Battery Life	10 days (5-minute upload interval, AP off, connected to IoT Sub device)

Power Consumption	<ul> <li>0.06W, 10mA (AP off, not connected to IoT)</li> <li>0.12W, 20mA (AP off, connected to IoT)</li> <li>0.9W, 150mA (AP on, connected to Wi-Fi, not connected to IoT)</li> <li>0.96W, 160mA (AP on, connected to Wi-Fi, connected to IoT)</li> <li>0.8W, 133mA(AP off, connected to WiFi, not connected to IoT)</li> <li>0.85W, 142mA (AP off, connected to WiFi, connected to IoT)</li> <li>While in a 5-minute upload interval</li> </ul>
USB charging	5V, 1A
Solar Panel charging power	7W
Solar Panel Size	270*180*17(mm)L*W*H
Posting intervals	By default: 5 minutes The setting range is "off, 1, 2, 3, 4, 5, 10 minutes." Shortening the posting interval will increase power consumption
SD13 to USB power cable	Length 50cm(19.7 inch)
Solar panel cable	Length 70cm(27.6 inch)

#### Table 8

# 11. Miscellaneous

# 11.1 Replacing the SD/SIM Card

<b>1. Locate the SD/SIM Card</b> <b>Slot</b> Open the device casing with a Phillips screwdriver as per the manual's instructions	SIM Card
2. Access the SD/SIM Card	Press down on the cover and pry it open
Slot	gently, using a fingernail or a similar tool.
3. Install the SD/SIM Card	Insert the SD/SIM card into the slot with the
	metal contacts facing down. Ensure it aligns
	correctly.
4. Close the SD/SIM Card	Push the cover back in place gently. Ensure
Slot Cover	it closes tightly; if not, recheck the card's
	placement.
5. Verify Proper Installation	Check if the SD/SIM card is functioning
	properly after installation.
6. Secure the Device Casing	Reattach the device casing securely.
7.Enter the correct APN.	To configure a new SIM card, please refer to
	Section <b>8.9</b> for instructions.

#### Table 9

### 11.2 Manually Adding

For users who have already set up the network, follow these steps to manually add the WS6210 device.

Instructions	Illustration		
1.Obtaining MAC Address *The MAC address can be found on the label of the device or via Embedded Web Page.			
	Local Network		
	MAC B018590 A4 C7 04 WIFT Network		
	WLAN WiFi drains the battery fast, better plug it in for power.		
	Router SSID cisco 8088 Scan Router		
	WIFI Password = show password If you router is dual-band, make sure you connect to the router's 2 IIP Address Mode Receive Automatically(DHCP)  v		
	IV Address Mode Receive Automaticaly(DHCP)  Static IP Address 192 168 1 111		
	Embedded Web Page		

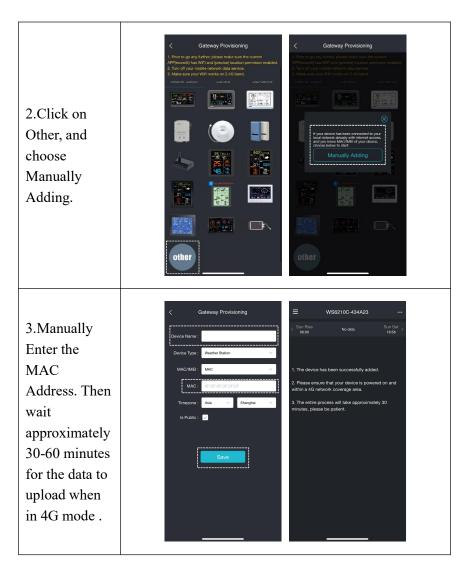
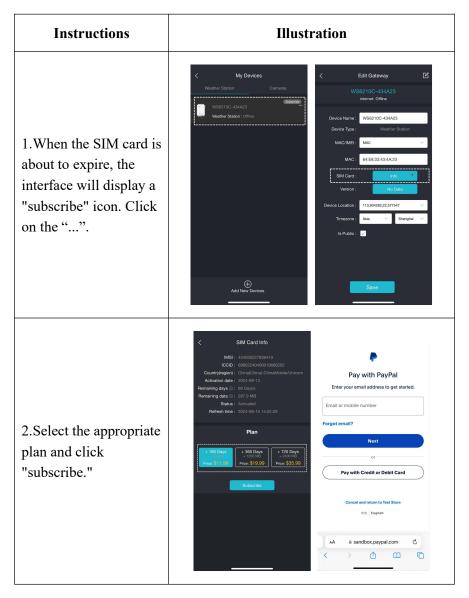


Table 10

### 11.3 SIM Card Renewal



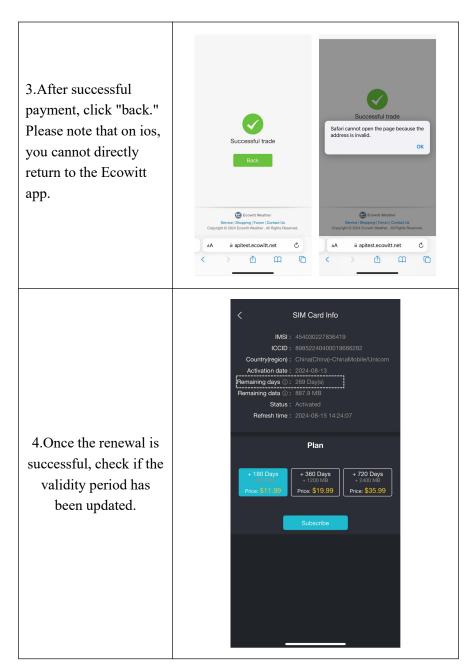


Table 11

# 12. Optional Sensors

The product supports receiving data from various sensors, which can be used with the Ecowitt server for enhanced data services. The RF reception function will always be turned on to receive data from all registered sensors anytime.

### 12.1 Sensor Data Reception Priority

Please note that data processing is prioritized when there is more than one sensor array or a rainfall sensor for outdoor temperature, wind, rain and solar data where applicable registered in the gateway (sensor hierarchy).

Sensor Array Priority:WS85>WS90>WS80>WS68>WS69.

Piezo rainfall priority: WS85>WS90

Traditional rainfall Priority: WH40>WS69.

### 12.2 Sensors

The following sensors can be purchased separately. For more information, please visit our website: http://www.ecowitt.com. Select the model of the units with the same RF frequency as your gateway or display (the frequency is different for various countries because of regulations).

Notes:

(1) The max QTY in the following table indicates the maximum number of the same sensor model or type that can be connected to the WS6210.

(2) Theoretically all the different sensor arrays (WS68, 69, 80, 85, 90) could be connected to one gateway at the same time, but due to the sensor hierarchy (see above) this would only make sense in a few special cases (e.g. WS85 + WS68 (get solar data from WS68). WS85 or WS90 + WS69 (get traditional rain data from the WS69).

Sensor Model	Max QTY	Picture	Functions
WS90	1		Outdoor temperature & humidity, light, UV, wind speed/direction, rainfall
WS85	1		Wind speed/direction, rainfall
WS80	1		Outdoor temperature & humidity, light, UV, wind speed/direction
WS69	1	<b>*</b>	Outdoor temperature & humidity, light, UV, wind speed/direction, rainfall
WS68	1	Ä	Light, UV, wind speed/ direction
WH40	1		Rainfall
WN32P	1		Indoor temperature, humidity, and pressure
WN32	1		Outdoor temperature and humidity
WH45/(WH46)	1		WH45: CO <sub>2</sub> , PM2.5, PM10, temperature and humidity WH46: CO <sub>2</sub> , PM1.0, PM2.5, PM4.0, PM10, temperature and humidity

WN31			Temperature and humidity
WN30	8*	2	Temperature
WN36		T	Pool temperature
WH57	1		Lightning detection
WH41/WH43	4		PM2.5
WH55	4	$( \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	Water leak detection
WH51L	16*	O	Soil moisture
WH51	10		Soil moisture
WN34L/S/D	8	6	Temperature
WN35	8		Leaf wetness

#### **Table 12 Optional sensors**

\*—Refers to the maximum number of sensors in this group. Any combin ation that sums up to the number mentioned is possible.

### 12.3 IoT Device

Sensor Model	Max QTY	Picture	Functions
WFC01	1.54	ļ	Smart water timer
AC1100	16*	01(5)	Smart plug

Table 13 IoT device

\*—See Above

# 13. 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 2-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.

Manufacturer: Shenzhen Fine Offset Electronics Co., Ltd. Address: 4/F, Block C, JiuJiu Industrial City, Shajing Town, Baoan District, Shenzhen City, China

# 14. FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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. 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.

To maintain compliance with RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

### IC Caution:

English:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.

2. This device must accept any interference, including interference that may cause undesired operation of the device.

French:

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;

2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

# 15. Care and Maintenance

When batteries of different brand or type are used together, or new and old batteries are used together, some batteries may be over-discharged due to a difference of voltage or capacity. This can result in venting, leakage, and rupture and may cause personal injury.

• Do not mix Alkaline, Lithium, standard, or rechargeable batteries.

• Always purchase the correct size and grade of battery most suitable for the intended use.

• Always replace the whole set of batteries at one time, taking care not to mix old and new ones, or batteries of different types.

• Clean the battery contacts and also those of the device prior to battery installation.

• Ensure the batteries are installed correctly with regard to polarity (+ and -).

• Remove batteries from product during periods of non-use. Battery leakage can cause corrosion and damage to this product.

• Remove used batteries promptly.

• For recycling and disposal of batteries, and to protect the environment, please check the internet or your local phone directory for local recycling centers and/or follow local government regulations

# 16. Contact Us

### 16.1 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:**

Our product is continuously changing and improving, particularly online services and associated applications. To download the latest manual, and additional help, and for any issues related to product usage feel free to contact our customer support team at <u>support@ecowitt.com</u>. We are committed to providing assistance and resolving any concerns you may have.

### 16.2 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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