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> [ECOWITT WS6210 Weather Station Gateway User Manual](#)

## ECOWITT WS6210BU

# ECOWITT WS6210 Weather Station Gateway User Manual

Model: WS6210BU

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## 1. INTRODUCTION

The ECOWITT WS6210 Weather Station Gateway is a versatile wireless communication device designed for collecting and transmitting meteorological data from various outdoor and indoor sensors. It supports both Wi-Fi and 4G network connections, prioritizing Wi-Fi for data upload to the weather station server. This gateway is an integral part of the Ecowitt ecosystem, allowing users to monitor environmental conditions via a web interface and the Ecowitt App.

This manual provides detailed instructions for the setup, operation, maintenance, and troubleshooting of your WS6210 Gateway to ensure optimal performance and longevity.



Figure 1.1: ECOWITT WS6210 Weather Station Gateway with attached solar panel, ready for outdoor installation.

## 2. SAFETY INFORMATION

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Do not expose the device to extreme temperatures, direct sunlight for prolonged periods without proper ventilation, or excessive moisture.
- Ensure proper grounding if connecting to external power sources.
- Use only specified batteries (8\*AA rechargeable NiMH batteries) and ensure correct polarity during installation.
- Keep the device away from strong magnetic fields.
- Do not attempt to disassemble or repair the device yourself. Refer all servicing to qualified personnel.
- When installing outdoors, ensure the support pole is stable and securely mounted to prevent falling.
- Verify SIM card compatibility with your local service provider before use.

## 3. PACKAGE CONTENTS

Carefully unpack the box and ensure all items listed below are present and in good condition. If any items are missing or damaged, please contact customer support.



Figure 3.1: All components included in the ECOWITT WS6210 Weather Station Gateway package.

- ECOWITT WS6210 Gateway Unit
- Solar Panel
- Mounting Bracket and U-bolts (for pole mounting)
- Screws and Nuts
- USB Cable
- Instruction Manual (this document)
- 8 x AA Rechargeable NiMH Batteries (pre-installed or included)
- 1 x Micro SD Card (8GB, pre-installed or included)
- 1 x Nano-SIM Card (pre-installed or included, regional availability may vary)

## 4. PRODUCT OVERVIEW

The WS6210 Gateway is designed for robust outdoor and indoor use, featuring a durable casing and

integrated solar charging. Understanding its components is crucial for proper setup and operation.

# ecowitt®

# Gateway

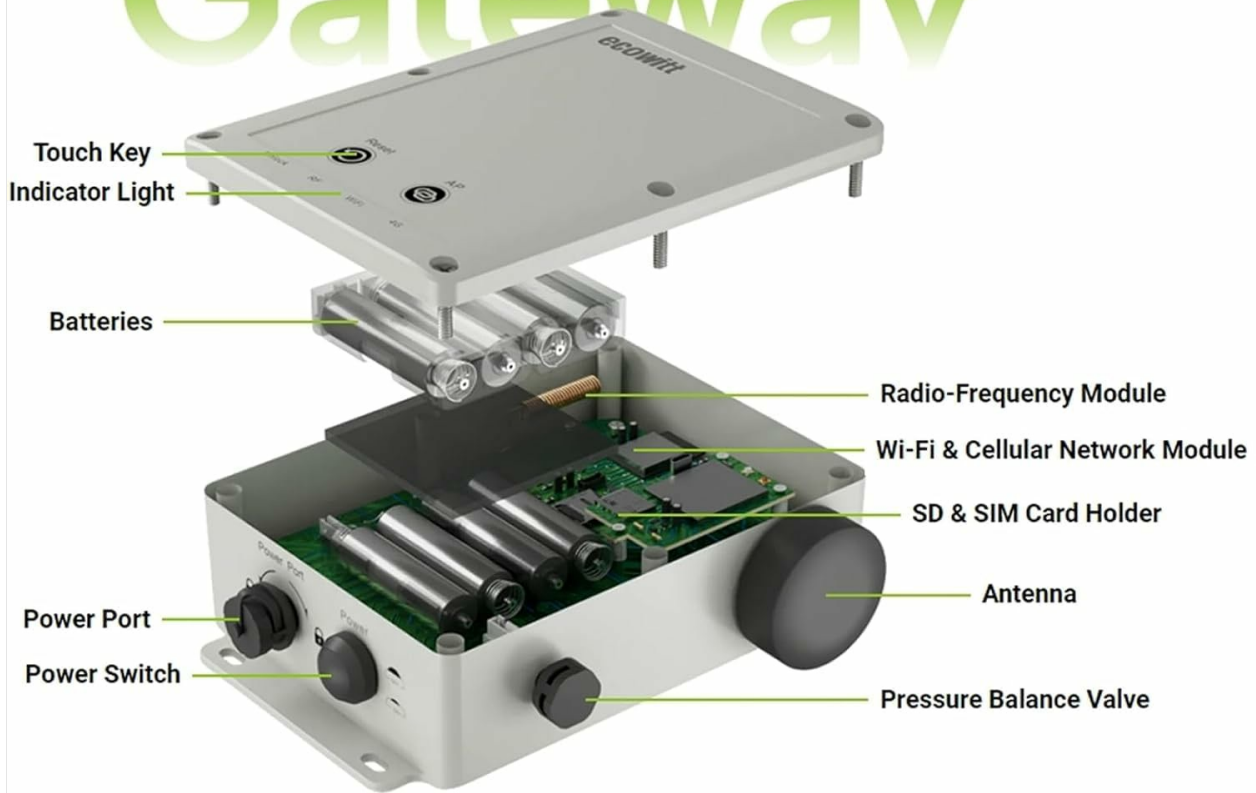


Figure 4.1: Exploded view of the WS6210 Gateway, highlighting key internal and external components.

## 4.1 Gateway Components

- **Touch Key / Indicator Light:** Used for unlocking and status indication.
- **Batteries:** Houses 8 AA rechargeable NiMH batteries for power.
- **Radio-Frequency Module:** Receives data from Ecowitt sensors.
- **Wi-Fi & Cellular Network Module:** Manages network connectivity (Wi-Fi and 4G).
- **SD & SIM Card Holder:** Slots for Micro SD card and Nano-SIM card.
- **Antenna:** For wireless communication.
- **Pressure Balance Valve:** Helps equalize internal and external pressure.
- **Power Switch:** To turn the device on/off.
- **Power Port:** For connecting the solar panel or external power.

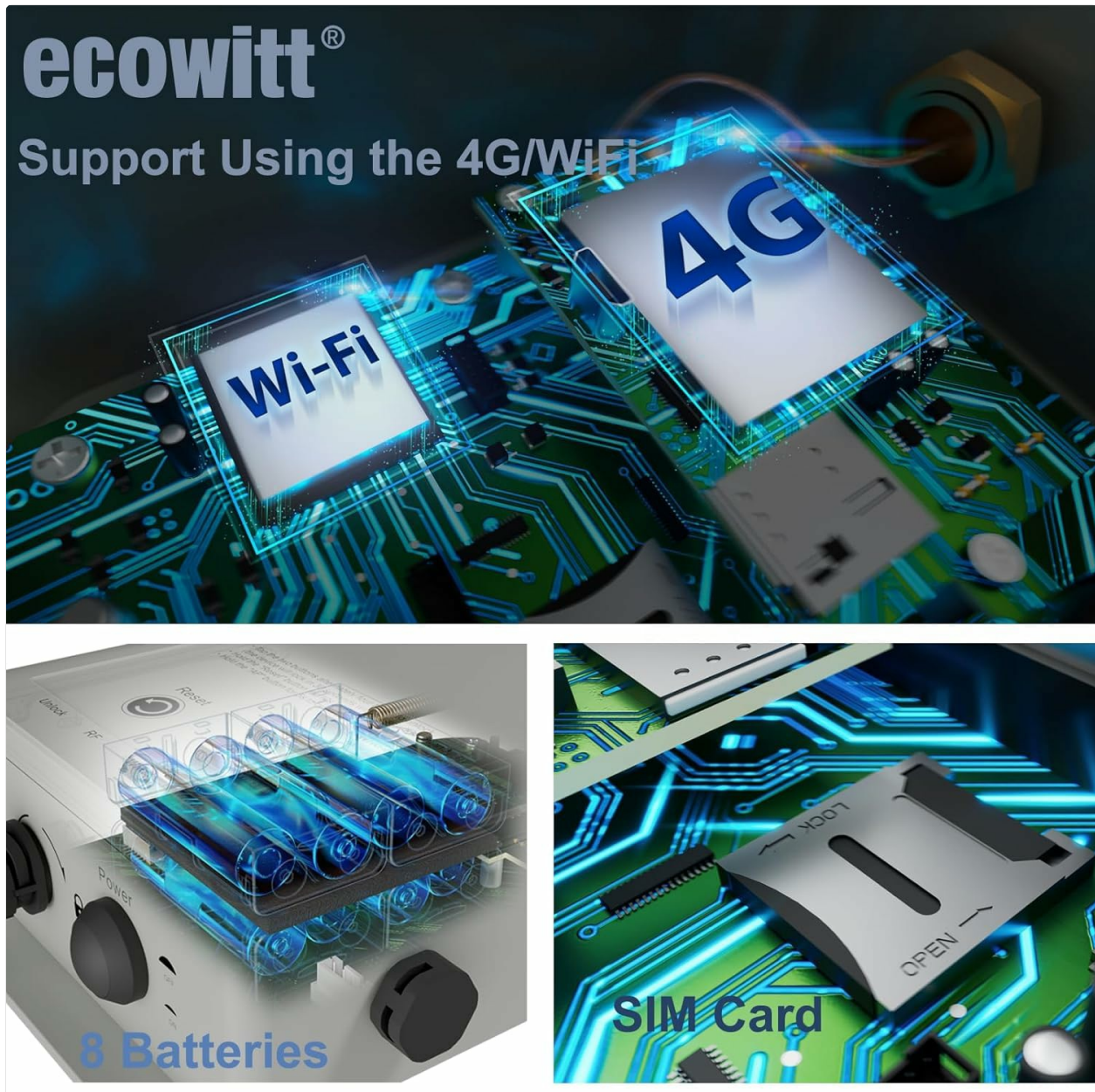


Figure 4.2: Detailed view of the gateway's internal battery arrangement and SIM card slot.

## 4.2 Dimensions

Understanding the dimensions of the gateway and solar panel is important for planning installation.



Figure 4.3: Dimensions of the WS6210 Gateway unit.

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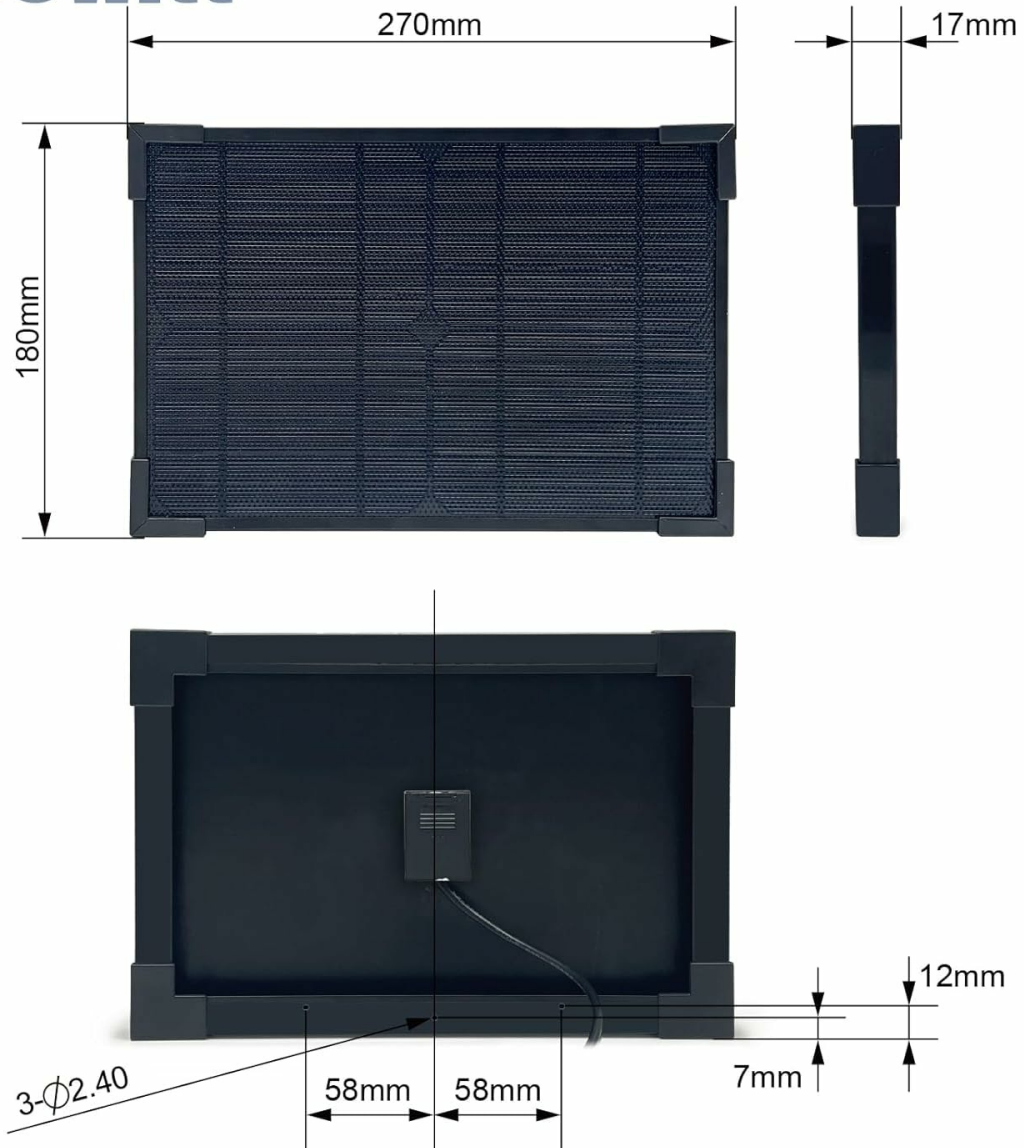


Figure 4.4: Dimensions of the accompanying solar panel.

## 5. SETUP GUIDE

Follow these steps to set up your ECOWITT WS6210 Weather Station Gateway.

### Easy for first-time use



#### Scan QR Code for Network Configuration

Just follow the instructions in the app to set up the network.



#### Nano-SIM and Micro-SD card ready

We offer a free SIM with 300MB in 90 days and a free 8GB SD card.



#### Batteries ready

Built-in 8 NiMH rechargeable batteries.



## 5.1 Battery and SIM/SD Card Installation

The gateway comes with pre-installed 8 AA rechargeable NiMH batteries, an 8GB Micro SD card, and a Nano-SIM card. Verify their presence and proper seating.

- **Batteries:** Ensure the 8 AA rechargeable NiMH batteries are correctly inserted into their compartment with the correct polarity.
- **Micro SD Card:** The 8GB Micro SD card should be in its slot. The system supports FAT32 format. For cards larger than 32GB, use the Rufus tool to format to FAT32.
- **Nano-SIM Card:** Confirm the Nano-SIM card is inserted. Ensure the SIM card is compatible with your local operating service provider. If the built-in SIM is not supported in your region, you may need to replace it with a compatible one.

## 5.2 Physical Installation and Solar Panel Connection

The WS6210 Gateway is designed for outdoor installation. Choose a location with adequate lighting for the solar panel and strong 4G cellular signal if using cellular data.

- **Support Pole:** Prepare a support pole with a diameter of 1.8-2.75 inches (45.72 mm-69.85 mm).
- **Mounting:** Use the provided mounting bracket and U-bolts to securely attach the gateway to the support pole.
- **Solar Panel:** Connect the solar panel to the gateway's power port. Position the solar panel to maximize sun exposure throughout the day for optimal charging of the internal batteries.



Figure 5.2: Example of the WS6210 Gateway installed on a pole in an outdoor environment.

### 5.3 Network Connection (Wi-Fi & 4G)

The gateway supports both Wi-Fi and 4G network connections for data upload. Wi-Fi is prioritized when available.

- **Wi-Fi Configuration:**

- a. Download the Ecowitt App from your device's app store.
- b. Follow the in-app instructions to scan the QR code for network configuration.
- c. The app will guide you through connecting the gateway to your Wi-Fi network.
- d. Alternatively, you can configure Wi-Fi via the device's local web interface (192.168.4.1) when in AP mode.

- **4G Connection:**

- Ensure the Nano-SIM card is properly inserted and activated with a data plan.
- The gateway will automatically attempt to connect to the 4G network if Wi-Fi is unavailable or not configured.
- A free SIM card with 100MB/month of data is provided for three months in supported regions.

Users in unsupported regions must purchase a SIM card independently.

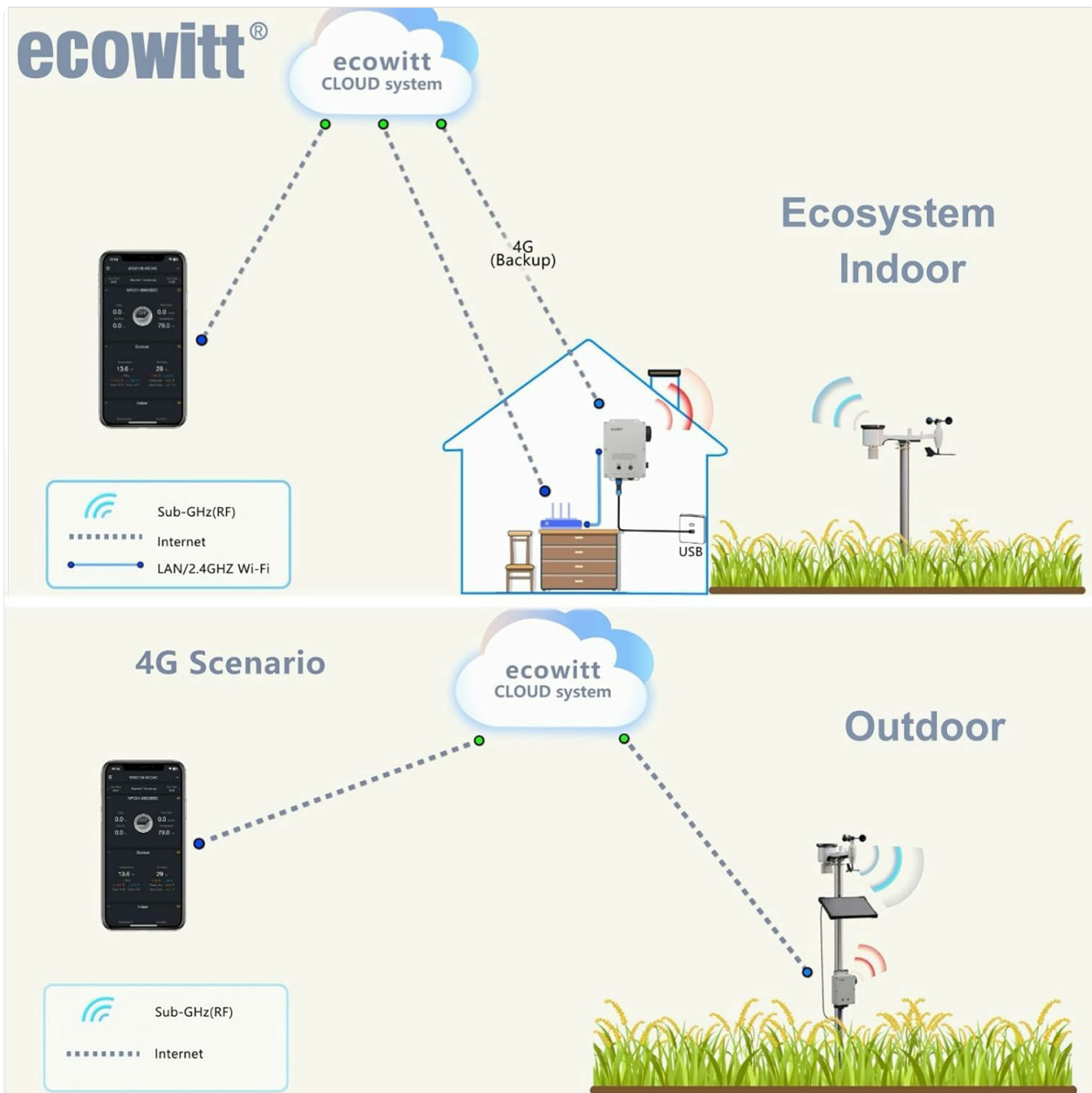


Figure 5.3: Network connectivity scenarios for the Ecowitt ecosystem.

#### 5.4 Connecting Ecowitt Sensors (Sold Separately)

The WS6210 Gateway receives data from almost all Ecowitt sensors. These sensors are sold separately and are essential for collecting weather data.

- Compatible sensors include, but are not limited to: WH65/WS69 (all-in-one), WN32+WS68+WH40 (multi-sensor), WS80+WH40 (multi-sensor), WN31/30/36 (8 channels), WH41A, WH51A (16 channels), WH41/43 (4 channels), WH55 (4 channels), WH57, WN34 (8 channels), WN35 (8 channels).
- The gateway is also compatible with IoT devices like 16\*WFC01/AC1100.
- Refer to the individual sensor manuals for specific pairing instructions. The gateway will automatically detect and receive data from compatible sensors within range.

## 6. OPERATING INSTRUCTIONS

Once set up, the WS6210 Gateway operates largely autonomously, collecting and uploading data. You can interact with it via the Ecowitt App or web interface.

## 6.1 Ecowitt App and Web Interface Functions

The Ecowitt App and web interface provide comprehensive control and monitoring capabilities:

- **Web Configuration:** Access settings and configurations through a web browser.
- **Sensor Data Viewing:** View real-time and historical data from all connected sensors.
- **Server Settings:** Configure data upload servers.
- **Calibration Parameters:** Adjust calibration for sensors if needed.
- **Sensor ID Settings:** Manage and identify connected sensors.
- **Automatic Time/Timezone:** The Ecowitt App automatically acquires timezone and network time settings when connected to the network.

*Note: Calibration operations can only be performed when the device is in Wi-Fi network mode or via the local IP address (192.168.4.1).*

## 6.2 SD Card Management

The gateway utilizes an SD card for data storage and configuration retention.

- Settings changed via the web interface are saved immediately to the SD card and retained even if power is lost.
- The system monitors the SD card's status.
- The SD card can be inserted or removed without requiring a device restart.

## 7. MAINTENANCE

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Regular maintenance ensures the longevity and accuracy of your WS6210 Gateway.

- **Cleaning:** Periodically wipe the exterior of the gateway and solar panel with a soft, damp cloth to remove dust and debris. Do not use abrasive cleaners or solvents.
- **Battery Check:** While the solar panel charges the batteries, it's advisable to periodically check the battery health via the Ecowitt App. Replace batteries if they no longer hold a charge effectively.
- **Firmware Updates:** Check the Ecowitt website or app for available firmware updates to ensure your device has the latest features and bug fixes.
- **Physical Inspection:** Annually inspect the mounting hardware and cables for any signs of wear, corrosion, or damage. Tighten any loose connections.

## 8. TROUBLESHOOTING

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This section addresses common issues you might encounter with your WS6210 Gateway.

### 8.1 No Data Appearing on App/Web Interface

- **Check Network Connection:** Verify that the gateway is connected to Wi-Fi or has a strong 4G signal. Check the indicator lights on the gateway.
- **Sensor Connectivity:** Ensure all connected sensors are powered on and within range of the gateway. Check their individual status indicators.
- **App/Web Interface Refresh:** Try refreshing the Ecowitt App or web page.
- **Gateway Restart:** Turn the gateway off and then on again using the power switch.

### 8.2 Wi-Fi Connection Issues

- **Incorrect Password:** Double-check your Wi-Fi password during configuration.
- **Router Range:** Ensure the gateway is within range of your Wi-Fi router. Consider using a Wi-Fi extender if necessary.
- **Router Settings:** Ensure your router is broadcasting a 2.4GHz Wi-Fi signal, as the gateway may not support 5GHz.
- **Firewall/Security:** Temporarily disable any strict firewall settings on your router that might be blocking the gateway's connection.

### 8.3 4G Connection Issues

- **SIM Card Activation:** Confirm your Nano-SIM card is activated and has an active data plan.
- **Signal Strength:** Relocate the gateway to an area with stronger 4G cellular signal.
- **SIM Card Compatibility:** Verify that the SIM card is compatible with the operating service provider in your country.

### 8.4 Device Unresponsive / Factory Reset

- If the device becomes unresponsive, tap the two buttons (Unlock and AP) alternately four times to unlock it. The device will lock in 30 seconds without any operation.
- To perform a factory reset, hold the "Reset" button for 10 seconds. This will revert all settings to their default values.

## 9. SPECIFICATIONS

Feature	Specification
Model Number	WS6210BU
Brand	ECOWITT
Connectivity Technology	4G, Wi-Fi (915 MHz frequency for sensors)
Power Source	Battery Powered (8*AA rechargeable NiMH) or Solar Powered
Included Components	Instruction Manual, Gateway Unit, Solar Panel, Mounting Hardware, USB Cable, Batteries, Micro SD Card, Nano-SIM Card
Item Dimensions (Gateway)	160mm (H) x 120mm (W) x 55mm (D)
Solar Panel Dimensions	270mm (W) x 180mm (H) x 17mm (D)
Weight	Approximately 4.85 Pounds (Package Weight)
SD Card Format Support	FAT32 (for cards >32GB, use Rufus tool)
Operating Temperature	(Not specified in input)
Humidity Range	(Not specified in input)

## 10. WARRANTY AND SUPPORT

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ECOWITT products come with a standard manufacturer's warranty. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official ECOWITT website. For technical support, troubleshooting assistance, or to inquire about compatible sensors and accessories, please contact ECOWITT customer service through their official website or the contact information provided in your product packaging.

**Online Resources:**

- [ECOWITT Official Website](#)
- [Ecowitt.net Platform](#)