

# Manual for Indoor LoRaWAN Gateway - GWIND



Thank you very much for choosing Daviteq Wireless Sensors. We are the leading wireless sensor manufacturer in the World. We have a wide range of wireless sensors which support different connectivity like LoRaWAN, Sigfox, Sub-GHz, NB-IoT...Please find out more information at [this link](#).

**This manual is applied to the following products**

Item code	HW Version	Firmware Version	Remarks
GWIND-9	1.0	1.0	

To use this product, please refer step by step to the below instructions.

## 1. Quick Guide

*Reading time: 10 minutes*

- i** Finish this part so you can understand and put the sensor in operation with the default configuration from the factory.

### 1.1 What is the GWIND ?

GWIND is a LoRaWAN Gateway designed for indoor installation, used in projects such as Smart Factory, Smart Agriculture, Smart Building, Smart Residential Area, Smart City... It supports simultaneously 8 connection channels to help receive a large number of packets from surrounding LoRaWAN sensors. The connection distance to the LoRaWAN sensors is up to 10 Km (depending on the environment and sensor types). It supports common communications such as Ethernet, LTE, WiFi. LoRa frequency support 863~870 MHz / 902~928 MHz.

This LoRaWAN Gateway is widely used in applications such as reading water meters, electricity meters, gas meter, environmental monitoring, smart farms, smart factories...

### 1.2 What's in the package?

**The package includes:**

- i** 01 x LoraWAN Gateway
- 01 x Lora Antenna
- 01 x LTE Antenna
- 01 x Adapter



## 1.3 Product Overview

### 1.3.1 I/O Ports



## Back Panel



### 1.3.2 LED Functions

LED Functions	Constant	Flashing	Off
Power	Power On	Booting /OTA	OFF
Internet	Internet Available	Checking Internet	RFU
Service	LNS Connected	RFU	LNS Not Connected
LoRa	LoRa Working	Initializing	LoRa Not Working

### 1.3.3 Reset Button

- Reboot:  
By pressing and holding the RESET Button, the Power LED will start flashing. The “reboot” procedure will be triggered when the RESET Button is released while the Power LED light is flashing.
- Restore to Default:  
By pressing and holding the RESET Button, the Power LED will start flashing. The “restore to default” procedure will be triggered when the RESET Button released after the Power LED light becomes constant.

## 1.4 Installation

Startup the LoraWAN Gateway through the following steps

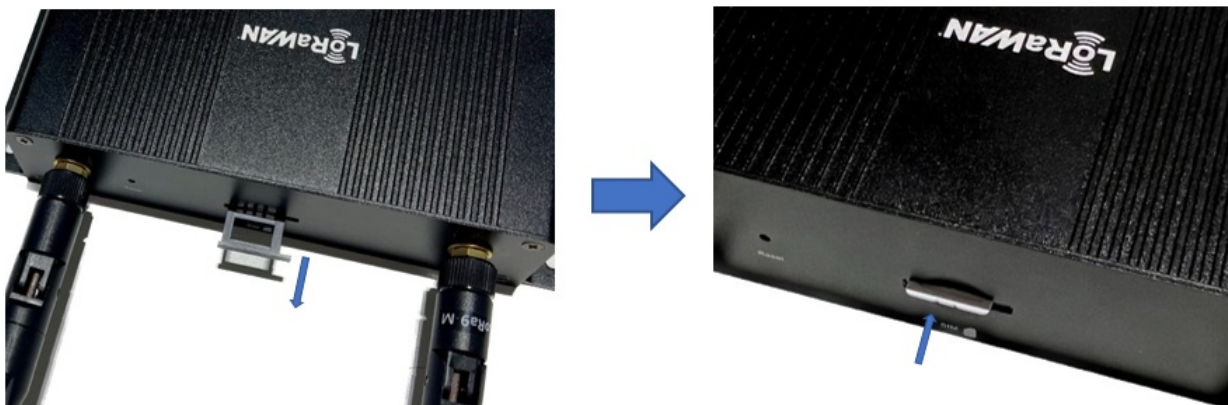
### Step 1: Install the antennas of the LoRaWAN Gateway

Install the antennas in the correct position. Make sure the antennas and Gateway are tightly connected.



## Step 2: Insert the SIM card into the LoRaWAN Gateway

Remove the plastic plate in the SIM socket, then insert the SIM card into the socket with correct SIM direction.



⚠ Pay attention to the direction of the SIM

⚠ Note: If the gateway use only Ethernet port to connect to Network Sever, skip step 2

## Step 3: Connect the Ethernet cable and power up the Gateway

Connect the Ethernet cable into RJ45 port. After that, Connect the power adapter provided to the DC jack In. The gateway will automatically turn on after powering up.



## 1.5 Configure the LoRaWAN Gateway

### 1.5.1 GUI Access

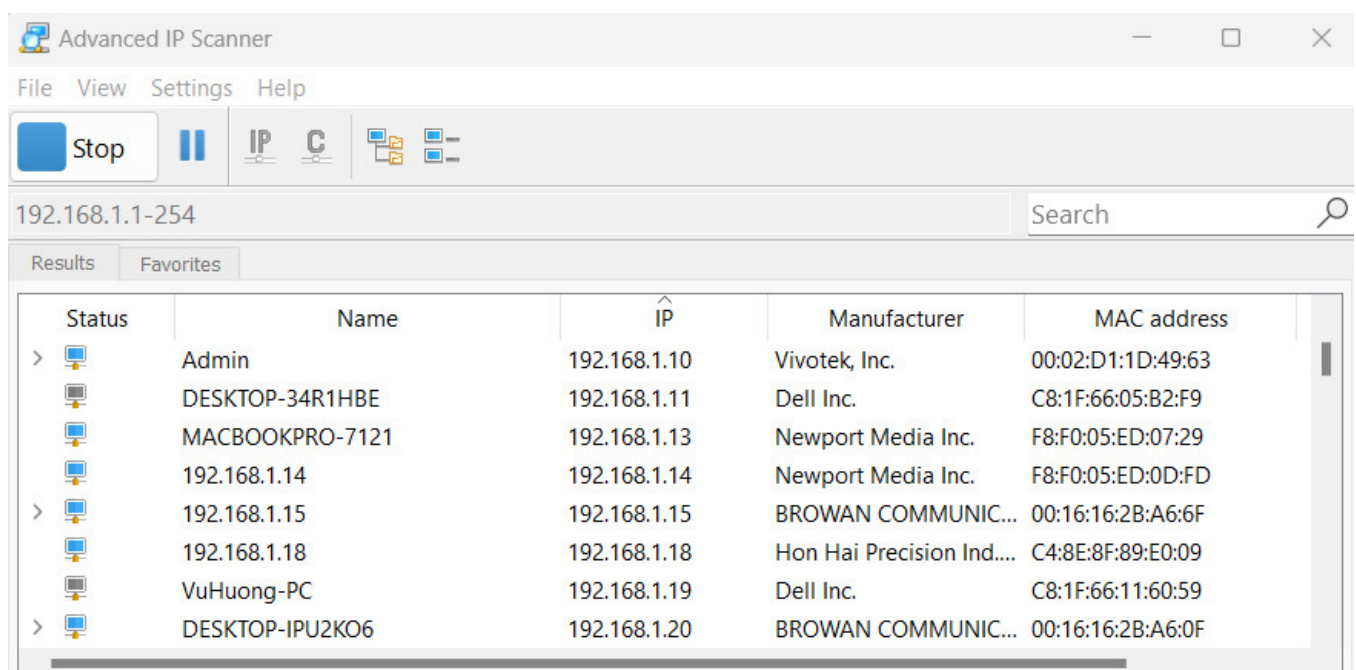
Default mode of Daviteq Gateway is DHCP. Once gateway is turned on through plugging in the DC adapter, it will automatically link to available servers. Gateway's IP address can be found from the DHCP server. Access Gateway Web UI via the DHCP IP on browser. The default username is "admin", and the password can be found on the back label.

To access the GUI, follow these steps:

**Step 1:** Use a computer to connect to the network that the gateway is connected. The computer can connect to that network via WiFi or Ethernet.

**Step 2:** Use the IP scanning software to find the IP address of the gateway based on its Mac address that can be found on the back label.

 Access [this link](#) to get a free IP scanning software on the internet



Status	Name	IP	Manufacturer	MAC address
>	Admin	192.168.1.10	Vivotek, Inc.	00:02:D1:1D:49:63
	DESKTOP-34R1HBE	192.168.1.11	Dell Inc.	C8:1F:66:05:B2:F9
	MACBOOKPRO-7121	192.168.1.13	Newport Media Inc.	F8:F0:05:ED:07:29
	192.168.1.14	192.168.1.14	Newport Media Inc.	F8:F0:05:ED:0D:FD
>	192.168.1.15	192.168.1.15	BROWAN COMMUNIC...	00:16:16:2B:A6:6F
	192.168.1.18	192.168.1.18	Hon Hai Precision Ind....	C4:8E:8F:89:E0:09
	VuHuong-PC	192.168.1.19	Dell Inc.	C8:1F:66:11:60:59
>	DESKTOP-IPU2KO6	192.168.1.20	BROWAN COMMUNIC...	00:16:16:2B:A6:0F

**Step 3:** Enter the IP address of the gateway in the web browser to access the configuration interface.



For example, If the IP address of the Gateway is 192.168.1.15 , you should enter exactly that information in web browser, then the GUI will be displayed.

# Authorization Required

Please enter your username and password.

Username

admin

Password

.....

LOGIN

### 1.5.2 WAN configuration

The purpose of this category is to view current WAN settings. This category is further divided into three sectors: WAN Status, Wan Settings and 3G/4G LTE Log.

- WAN Status

The current network status will be shown on this page.

System

LoRa

Network

**WAN**

VPN

Diagnostics

Logout

WAN Status

WAN Settings

3G/4G LTE Log

## WAN Status

Ethernet WAN	Status
	<b>MAC-Address:</b> 00:16:16:2B:A6:6F
	<b>IPv4 Address:</b> 192.168.1.15
<b>WAN</b>	<b>Subnet Mask:</b> 255.255.255.0
	<b>Gateway:</b> 192.168.1.1
eth0	<b>DNS Server:</b> 203.113.131.6; 203.113.131.5

3G/4G LTE	Status ( main outgoing interface )
	<b>SIM card status:</b> Detected
	<b>IMEI:</b> 866989053378540
	<b>IMSI:</b> 452040381601815
<b>WAN</b>	<b>Module Info:</b> Quectel, Product:EC25, Revision:EC25AUFAR06A06M4G
	<b>Network Info:</b> LTE BAND 3
sim card	<b>APN:</b> v-internet
	<b>IP:</b> 11.157.89.176
	<b>Network Status:</b> Connected

- WAN Settings

Daviteq Gateway supports three WAN Modes: Ethernet WAN, 3G/4G LTE and Dual WAN (Ethernet+3G/4G). Default mode of Daviteq Gateway is Dual WAN.

System
WAN Status
WAN Settings
3G/4G LTE Log

LoRa
Network
WAN
VPN
Diagnostics
Logout

## WAN Settings

System will reboot if settings are applied successfully.

WAN Mode: Dual WAN (Ethernet + 3G/4G)

Network priority: Ethernet WAN (Specify which WAN is Primary, the other one will be backup.)

## Ethernet WAN

WAN Type: DHCP Client

**Note: Configure "APN" information according to mobile service provider requirements.**

### 1.5.3 Lora Settings

The LoRa menu consists of the following categories: Mode Selection, Channel Scan and Log. Configure some basic fields for the gateway operation.

- Mode selection**

At the field, choose the "Packet Forwarder" option and click the "APPLY" button to Enable the Packet Forwarder mode. After applying the setting, the "Packet Forwarder" field can be found on the left menu.

System
Mode Selection

LoRa
Mode Selection
Packet Forwarder
Whitelist Filter
Config Restore
Channel Scan
Logs
Network
Logout

## LoRa Mode Selection

Mode: Packet Forwarder

APPLY

- Packet Forwarder configuration**

Select Packet Forwarder in the left menu, then choose Gateway Info. This page is for setting up the LoRa configuration including Gateway ID, Server Address, Server Uplink Port, Server Downlink Port, Keep-Alive Interval, Statistics Display Interval, and Push Timeout.

System
Gateway Info
Gain
Radio and Channel Settings
LBT Settings

LoRa
Mode Selection
Packet Forwarder
Whitelist Filter
Config Restore
Channel Scan
Logs
Network
Logout

## Gateway Info

Gateway ID: 5813D3FFE229312

Server Address: au1.cloud.thethings.network

Server Uplink Port: 1700 (1~65535)

Server Downlink Port: 1700 (1~65535)

Keep Alive Interval: 10 (seconds)

Statistics display Interval: 30 (seconds)

Push Timeout: 100 (milliseconds)

APPLY

**Need to properly configure the Server Address, Server Uplink Port, and Server Downlink Port fields. These information depend on the Network server.**

- **Radio and Channel Settings**

This page is for configuring the radio 0 and radio 1 configurations of Lora, including Central Frequency, Channel Status, and Center frequency offset. The frequencies and channels are regulated by the lora-alliance, region and the network server. Below is an example of the configuration of the frequency AS923-2.

Gateway Info

Gain

Radio and Channel Settings

LBT Settings

### Radio Settings

Here you can modify Central frequency of Radio 0 or Radio 1 to change channel frequencies.

Radio 0

Central Frequency: 921400000 (Hz)

RSSI Offset: -166 (dBm)

Radio 1

Central Frequency: 922000000 (Hz)

RSSI Offset: -166 (dBm)

### Channel Assignment

CH 0 Status: Enable ▾	Radio Interface: 0 ▾	CenterFreqOffset: -400000 (-400000~+400000)
CH 1 Status: Enable ▾	Radio Interface: 0 ▾	CenterFreqOffset: -200000 (-400000~+400000)
CH 2 Status: Enable ▾	Radio Interface: 0 ▾	CenterFreqOffset: 0 (-400000~+400000)
CH 3 Status: Enable ▾	Radio Interface: 0 ▾	CenterFreqOffset: 200000 (-400000~+400000)
CH 4 Status: Enable ▾	Radio Interface: 1 ▾	CenterFreqOffset: -300000 (-400000~+400000)
CH 5 Status: Enable ▾	Radio Interface: 1 ▾	CenterFreqOffset: -100000 (-400000~+400000)
CH 6 Status: Enable ▾	Radio Interface: 1 ▾	CenterFreqOffset: 100000 (-400000~+400000)
CH 7 Status: Enable ▾	Radio Interface: 1 ▾	CenterFreqOffset: 300000 (-400000~+400000)
CH 8 Status: Enable ▾	Radio Interface: 0 ▾	CenterFreqOffset: 300000 (-300000~+300000)

Channel Bandwidth: 500K

APPLY

## 1.6 Add the LoraWAN Gateway to Network Server

To give an example, please follow the instructions in [this link](#) to add LoraWAN gateway to The things Stack network server.

## 2. Product specification

LoRaWAN Specification	LoRaWAN 1.0.3
Frequency Band	Select 863~870 MHz / 902~928 MHz
Number of Channels	Up to 8 concurrent channels for LoRa transmission
LoRa Transmit Power	0.5W (up to 27 dBm)
LoRa Receive Sensitivity	Down to -142 dBm (conducted)
LoRa Software	Standard and LRR Actility



Operating Temperature	-10°C ~ 55°C
Storage Temperature	-20°C ~ 60°C
Power Supply	DC 12 V/1.5 A-Power Adaptor / DC 10~30 V 3-Pin Connector Power supply / Passive PoE 10~30 V
4G LTE	LTE Cat 4 or Cat M1/NB2
Interfaces	1 WAN RJ45 10/100Mbps (w/ passive PoE capability), 1 SIM card slot (2FF), 1 DC jack in / 1 terminal block
Antenna Type	1 x external LoRa antenna, 1 x External antenna for LTE
Dimensions	L:120 x W:136 x H:35mm
Weight	0.4 kg
Vietnam Type Approval	pending

### 3. Warranty and Support

For warranty terms and support procedures, please refer to [this link](#).

### 4. References

Use-cases:

Case studies:

White-papers:

**END.**

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