

Manual for PINEX Outdoor LoRaWAN Gateway - PINEX | FW6

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1. GENERAL INFORMATION

Thank you very much for choosing Daviteq LoRaWAN gateway. 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
PINEX-E9-SINGLE	4H	6F0404	
PINEX-E8-SINGLE	4H	6F0404	
GWODR-8-WET-RN	4H	6F0404	

2. QUICK GUIDE

Reading time: 15 minutes

- 1 Finish this part so you can understand and put the device in operation with the default configuration from the factory.

2.1. What is the PINEX?

PineX is an industrial-grade outdoor LoRaWAN® Gateway, designed to operate reliably in the harshest environments—from scorching deserts to freezing Arctic conditions, and even hurricane-force winds up to 200 km/h. With IP67-rated waterproof and dustproof protection, an extended temperature range of -40°C to +70°C, and Dual LoRa Antennas for extended coverage, PineX ensures uninterrupted, long-range connectivity even in extreme weather conditions. Supporting all global LoRaWAN frequency bands, PineX integrates a built-in Network Server, Node-RED, and VPN security, enabling fast, cost-efficient, and secure IoT deployments. Designed for Smart Cities, Industrial Facilities, Smart Agriculture, and remote IoT applications, PineX is the ultimate rugged, high-performance LoRaWAN Gateway for mission-critical operations.

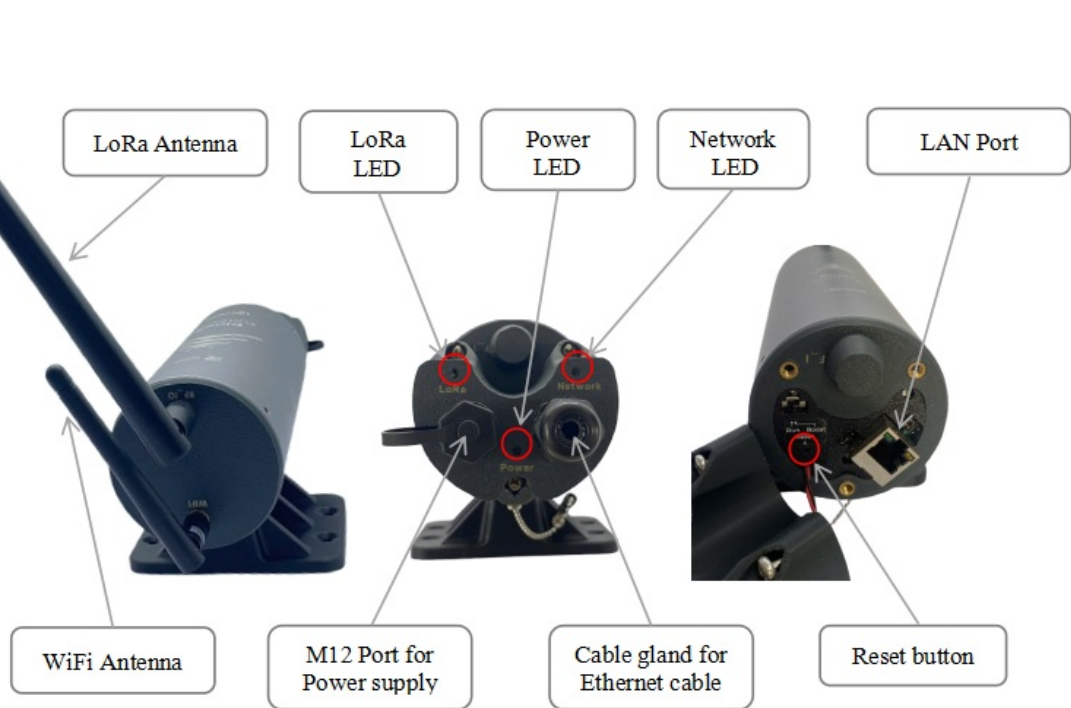
2.2. What's in the package?



The package includes:

- 01 x LoraWAN PINEX Gateway
- 01 x Lora Antenna
- 01 x WiFi Antenna (optional)
- 01 x Power Adapter
- 01 x Converter cable
- 01 x PoE Injector
- 01 x Mounting Accessories

2.3. Product Overview



• **LED Functions**

LED Functions	Constant	Flashing	Off
Power	Power On	None	OFF
Network	Initializing	Internet Available	Disconnected
LoRa	LoRa Working	Initializing	LoRa Not Working

• **RESET Button**

The button is deactivated in firmware 4

2.4. Installation

Startup the LoraWAN Gateway through the following steps

Step 1: Install the antenna of the LoRaWAN Gateway

Install the Lora antenna and WiFi antenna in the correct position. Make sure the antenna and Gateway are tightly connected.

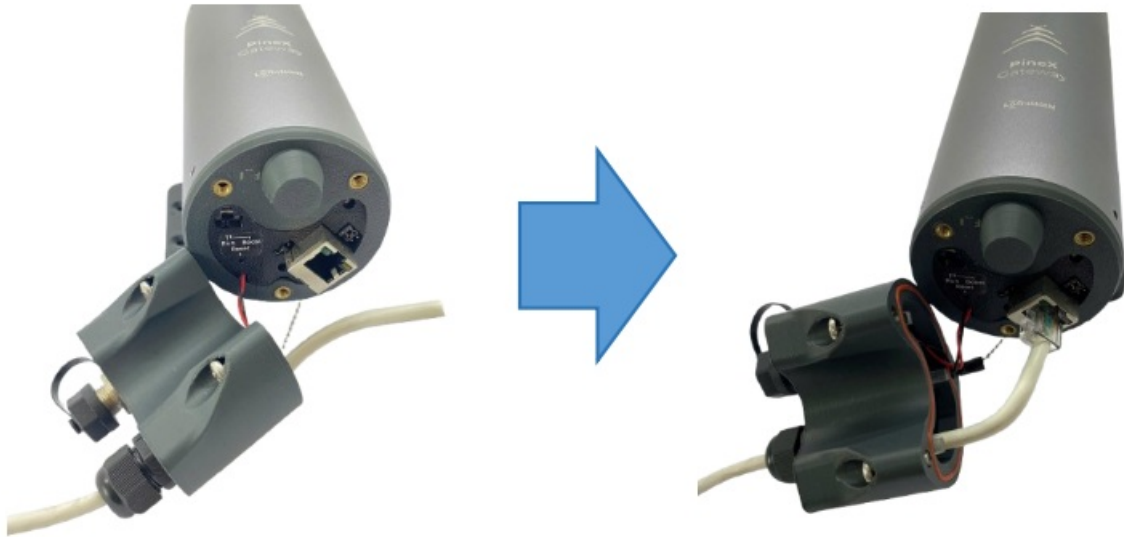


Step 2 : Use the screw driver to remove the three screws, then open the gateway cover.



Step 3: Connect the Ethernet cable to the Gateway

Connect the Ethernet cable into LAN port.



Step 4 : Close the gateway's cover, then use the screw driver to lock the 3 screws.

Step 5 : Power up the Gateway through M12 port



2.5. Mounting

Step 1: Select the installation location. The surface must be flat.

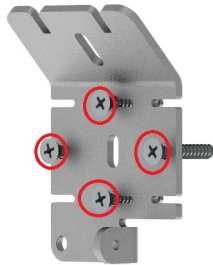
Step 2: Based on the dimensions of the gateway's base, drill four holes into the wall. Then, insert wall anchors into the drilled holes.

Step 3:

For economy gateway version, use screws to secure the gateway onto the drilled surface as below



For standard gateway version, install the bottom frame to the wall/structure first by using 4 provided screws.




Then insert the device to the slot then fix by a screw




2.6. Configure the LoRaWAN Gateway


2.6.1 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 is "public"

 By default, the gateway is configured to use DHCP. Therefore, it must be connected to a network with an active DHCP server in order to access the Web GUI.

 If the gateway is to be used in a static IP network without DHCP, it must firstly be connected to another active DHCP server to access the configuration interface to configure static IP for the gateway. Once the initial configuration is complete, the gateway can then be moved to the static IP network. Details of static IP configuration for the gateway are in sub-section of **WAN SETTINGS** in section of **2.2.6.2 Network WAN**

configuration

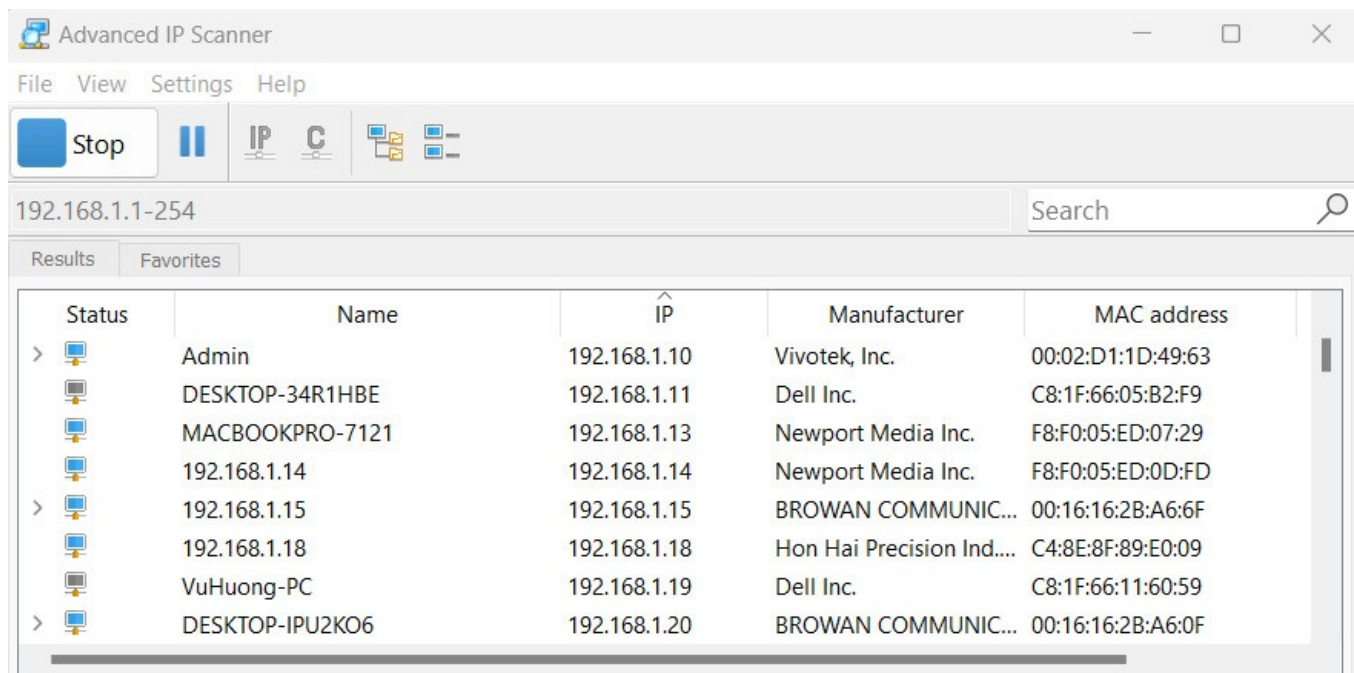
 In some company with strict IT regulations, the gateway MAC address must be added to company network white list for proper connection.

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



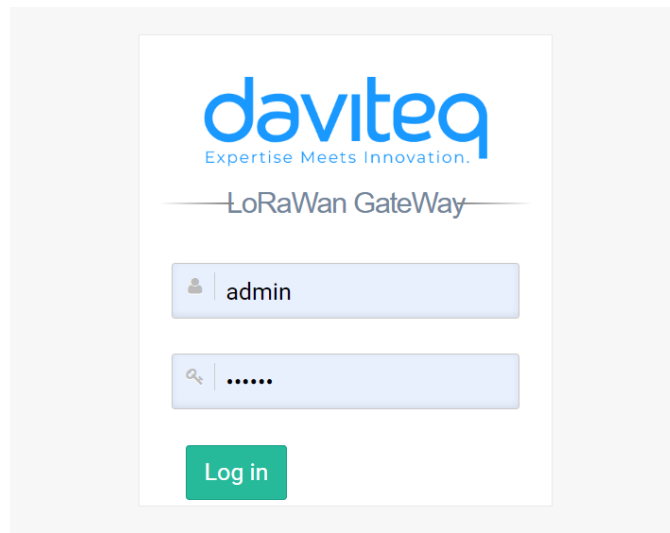
The screenshot shows the 'Advanced IP Scanner' application window. The title bar reads 'Advanced IP Scanner'. Below the title bar is a menu bar with 'File', 'View', 'Settings', and 'Help'. A toolbar contains a 'Stop' button, a pause icon, and icons for IP scanning and configuration. The main area shows a search range of '192.168.1.1-254' and a search input field. Below this are tabs for 'Results' and 'Favorites'. The 'Results' tab is active, displaying a table of discovered devices.

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

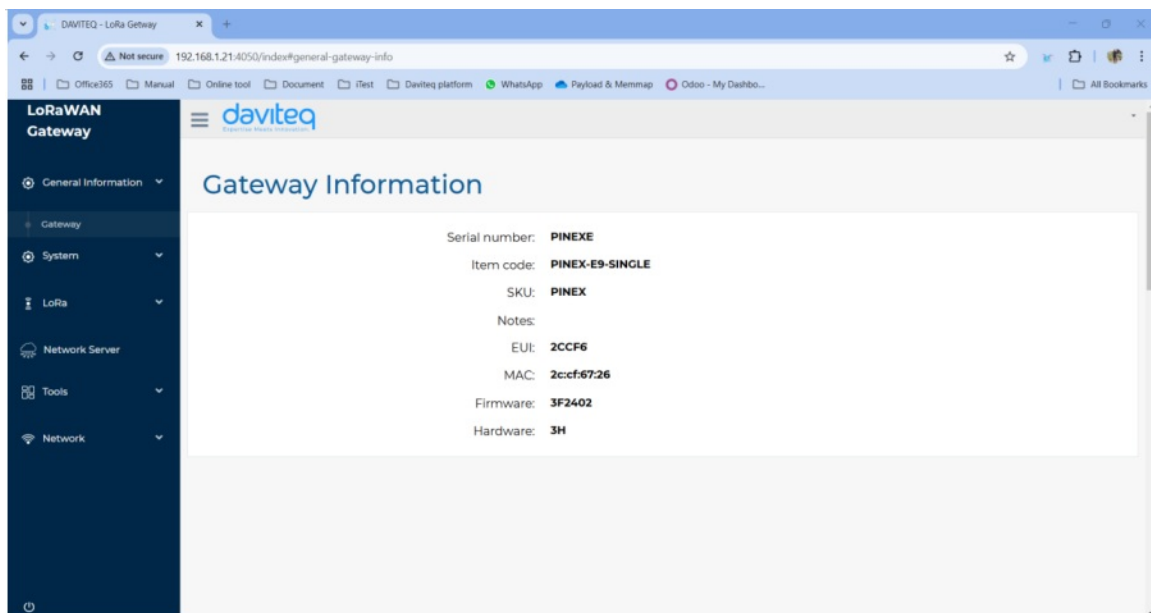
Step 3: Enter the **IP address** of the gateway in the web browser to access the configuration interface.

 Must add port 4050 after the IP address. For example, If the IP address of the Gateway is **192.168.1.21** , you have to enter **192.168.1.21:4050** in web browser, then the GUI will be displayed.

 The default **username** is **admin** and default **password** is **public**. Please check updated username and password on the gateway label.



After login successfully, the general information of the gateway will be display at **general information** tab.

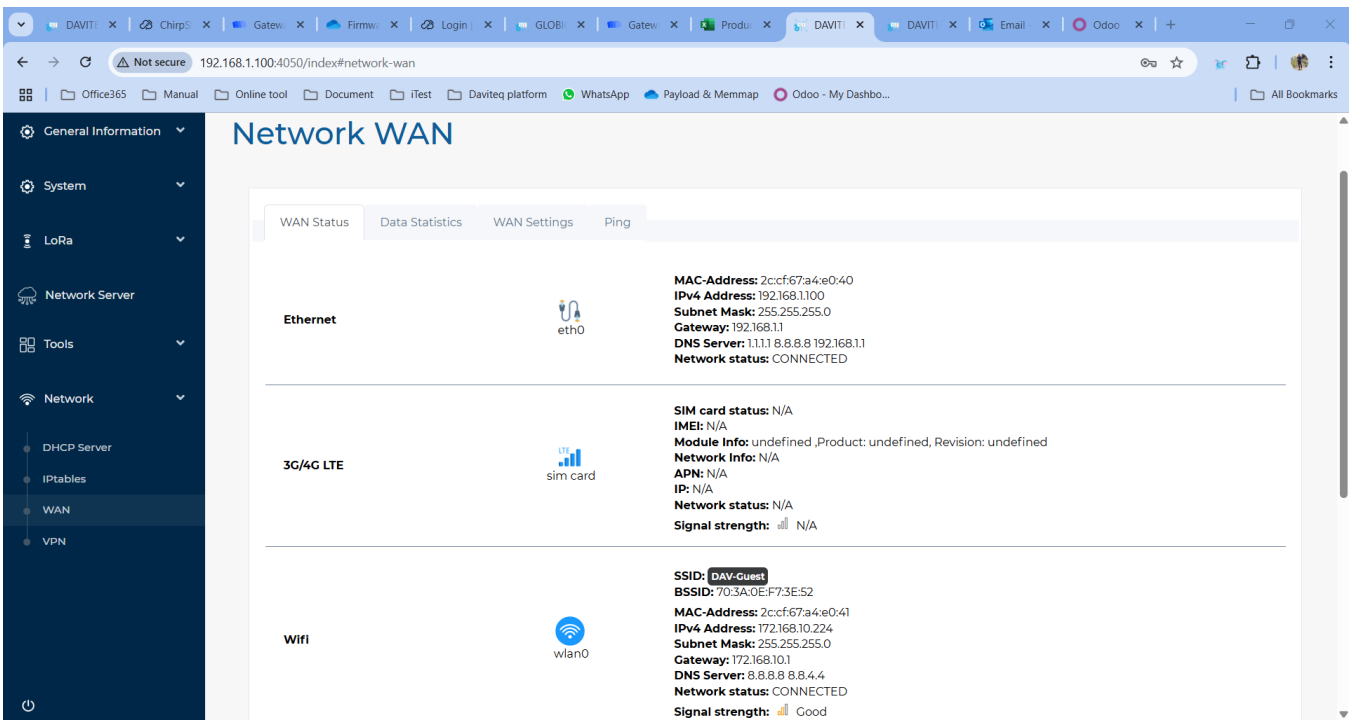


2.6.2 Network WAN configuration

This category shows current WAN settings. This category is further divided into three sectors: WAN Status, Data Statistics and WAN Settings.

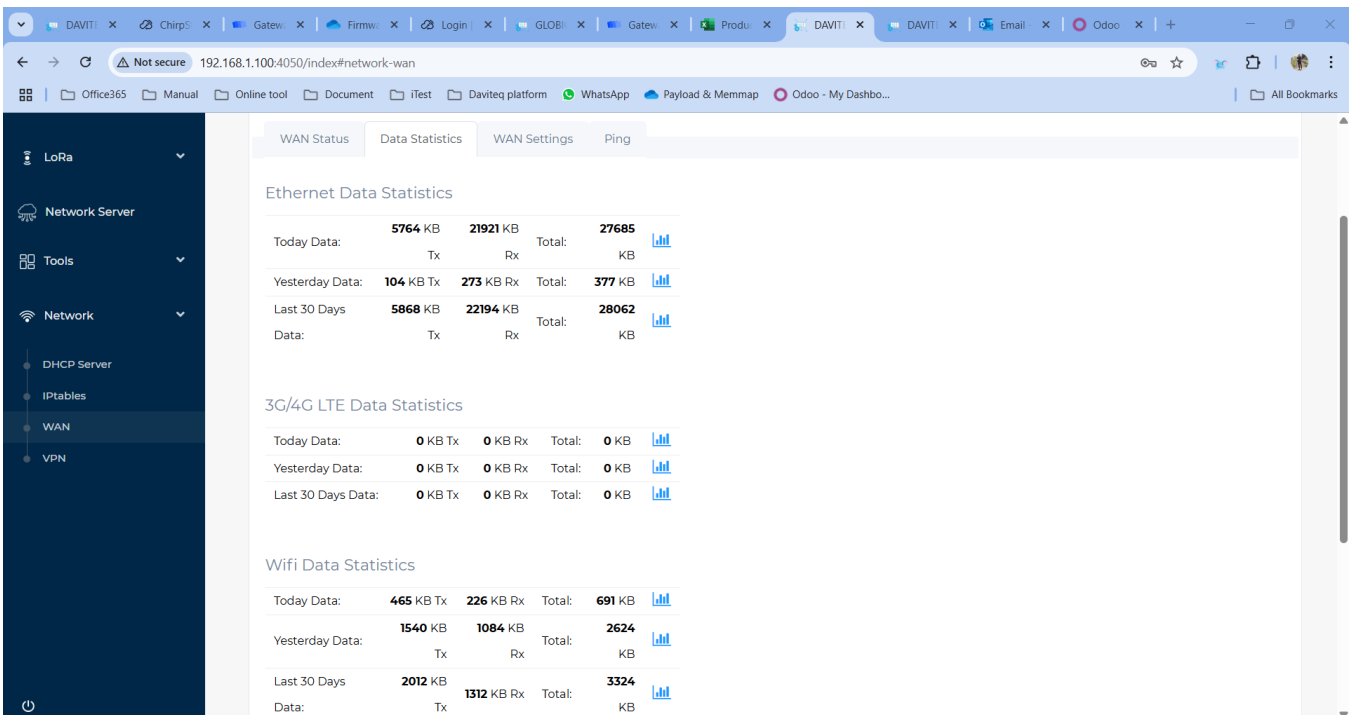
- **WAN Status**

The current network status will be shown on this page.



• WAN Statistics

Statistics on the gateway's used data capacity are shown in this section.



• WAN Settings

Daviteq Gateway supports internet connectivity via both Ethernet and Wi-Fi (optional). When both Ethernet and Wi-Fi are available, the system will prioritize Ethernet. The network mode will switch automatically based on availability.

Follow the steps below to set up the **static IP** for the gateway:

Step 1: In the **Network** section, select **WAN**.

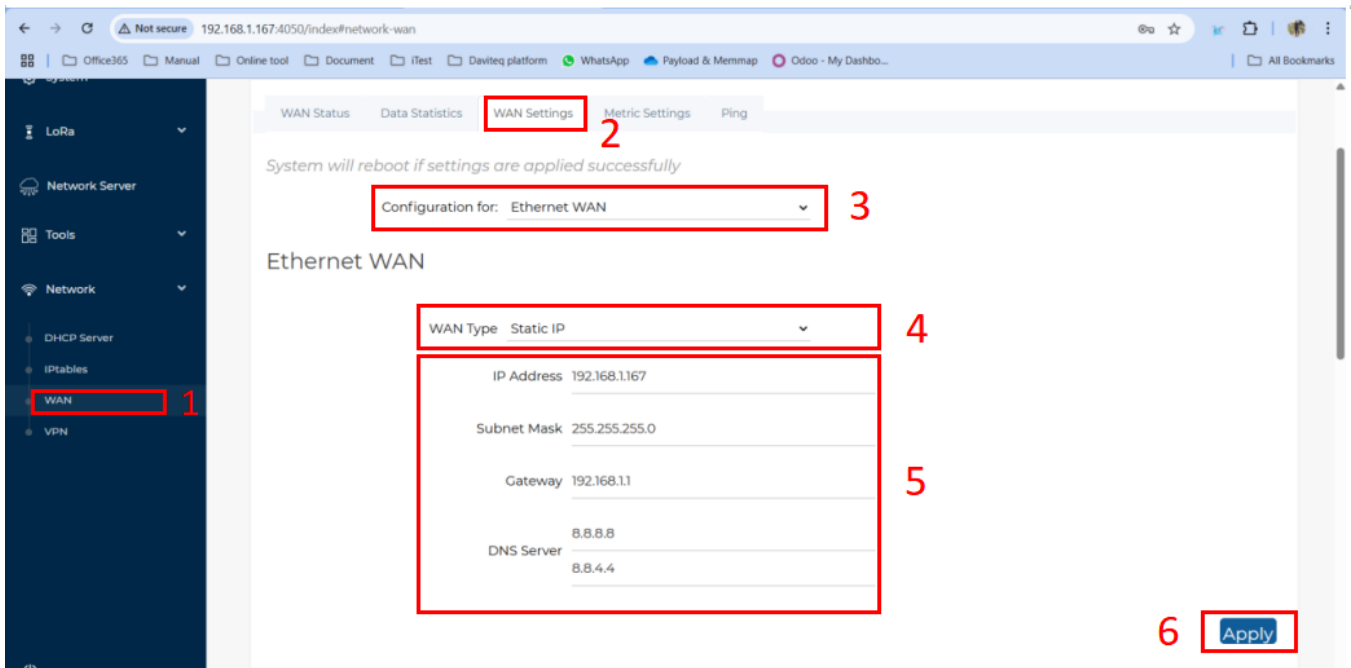
Step 2: Click on the **WAN Settings** tab at the top.

Step 3: In the **Configuration** field, select **Ethernet WAN**

Step 4: In the **WAN type** field, select **Static IP**

Step 5: Enter the Static IP information, including **IP Address, Subnet Mask, Gateway, DNS Server**

Step 6: Click the **Apply** button to save and apply the new configuration.



When the static IP is applied, the Web GUI will be logged out automatically. To connect the gateway to the internet, the Ethernet cable must be switched to a static IP network. After that, in order to access the gateway GUI again, the computer must be connected to the same network as the gateway.

Follow the steps below to set up the **Wi-Fi** network for the gateway (This feature is only available with the WiFi gateway version)

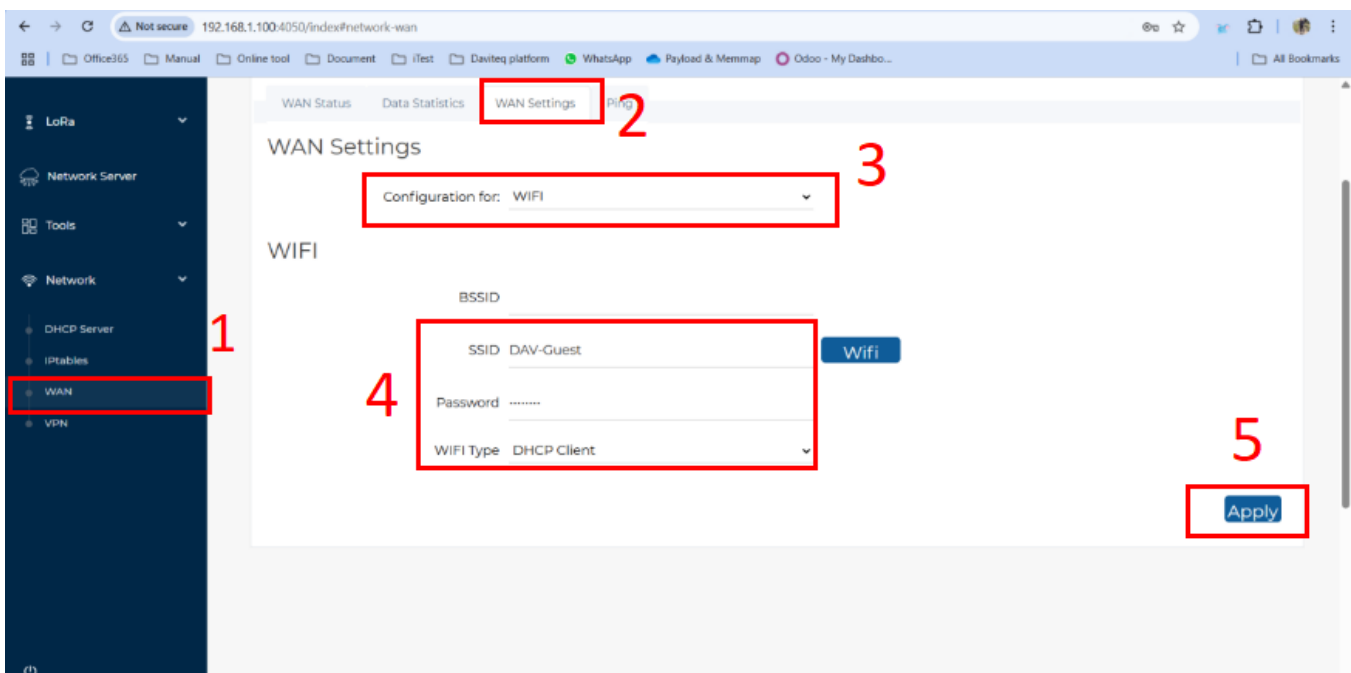
Step 1: In the **Network** section, select **WAN**.

Step 2: Click on the **WAN Settings** tab at the top.

Step 3: In the **Configuration** field, select **Wi-Fi**.

Step 4: Enter the Wi-Fi information, including **SSID (Wi-Fi name)**, **Password**, and **Wi-Fi Type** (default: **DHCP Client**).

Step 5: Click the **Apply** button to save and apply the new configuration.



2.6.3. Lora Settings

The LoRa menu consists of the following categories: Package Forwarder and Logs. Configure some basic fields for the gateway operation.

- **Package Forwarder**

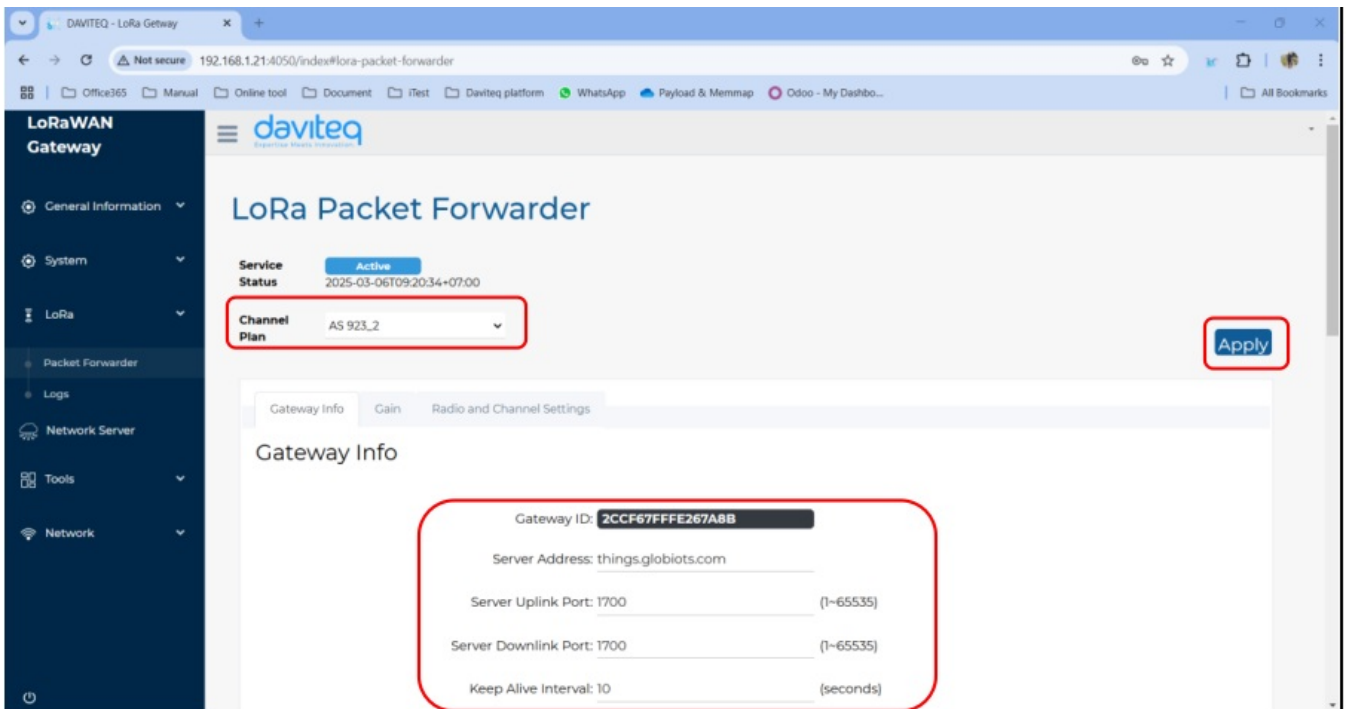
Select Packet Forwarder in the left menu, then choose Gateway Info. This page is for setting up the LoRa configuration including Channel Plan, Gateway ID, Server Address, Server Uplink Port, Server Downlink Port, Keep-Alive Interval, Statistics Display Interval, and Push Timeout.



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

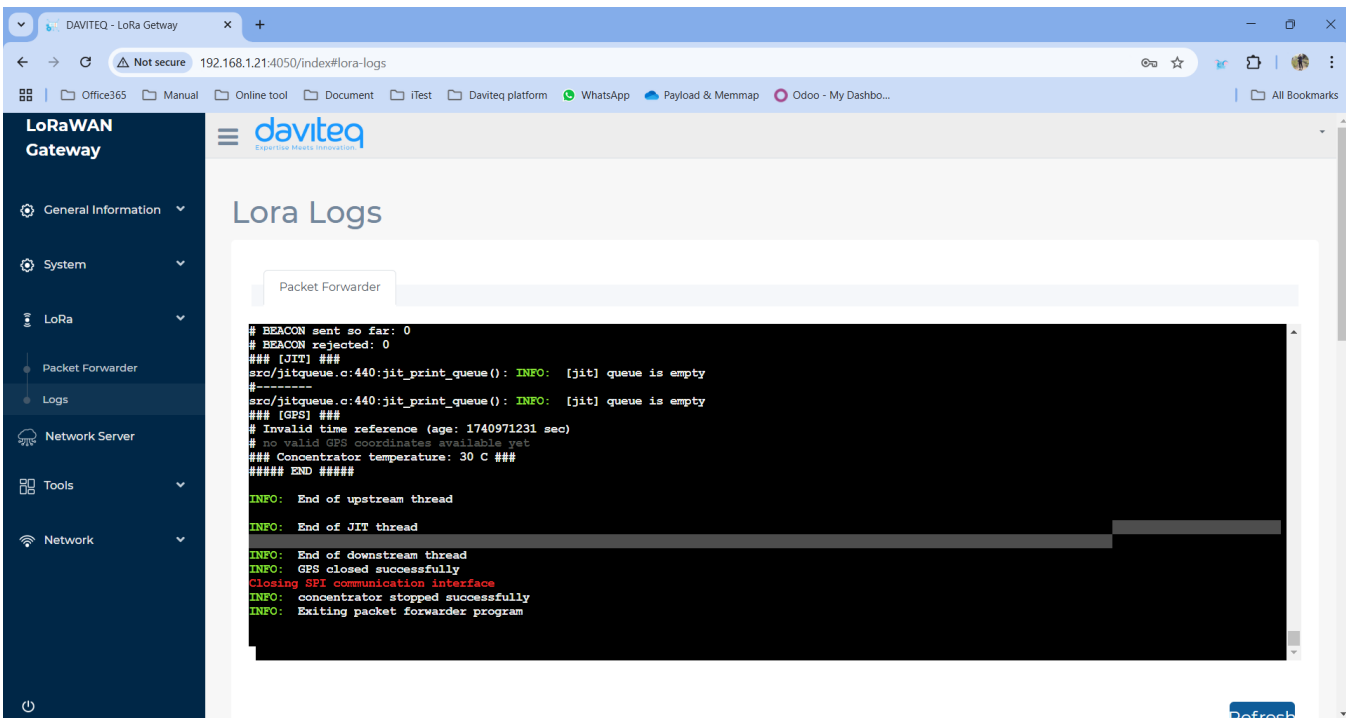
Choose the channel plan for the gateway, then choose the **Apply button** at the bottom right to save the current configuration

Parameter name	Description	Default value
Channel Plan	The region refers to the specific geographical area where the gateway operates, following the LoRaWAN Regional Parameters defined by the LoRa Alliance	EU868
Gateway ID	The Gateway ID (also known as DevEUI) is a unique identifier assigned to a LoRaWAN gateway.	Unique value
Server Address	The server address in a LoRaWAN gateway refers to the network server's IP address or domain name that the gateway connects to for data transmission and management	localhost
Server Uplink Port	The server uplink port in a LoRaWAN gateway refers to the port number used to send uplink packets	1680
Server Downlink Port	The server downlink port in a LoRaWAN gateway is the port number used for receiving downlink packets	1680
Keep alive interval	The keep-alive interval is the time interval at which a LoRaWAN gateway sends periodic status messages (heartbeats) to the network server to indicate that it is active and connected.	30



- **Logs**

This is the function of monitoring the LoRaWAN network.



2.7 Add the LoraWAN Gateway to Network Server

2.7.1 Add the LoraWAN Gateway to Embedded Chirp Stack Network Server

Please follow instruction at link:

[Instruction to configu... | Online Product Manuals & Datasheets](#)

2.7.2 Add the LoraWAN Gateway to External LoRaWAN Network Server

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

2.8 Activate and configure the embedded Node RED development tool

Prerequisite:

The Embedded Chirp Stack Network Server in the PINEX gateway must be active and configured properly to forward data to embedded Node RED development tool. Details to activate and configure embedded Chirp Stack are at the link: <https://daviteq.com/en/manuals/books/manual-for-lorawan-sensor/page/instruction-to-configure-embedded-chirpstack-network-server-in-pinex-firmware-6>

Please refer the below link for instruction to add the embedded Node RED development tool:

[Instructions to config... | Online Product Manuals & Datasheets](#)

3. PRODUCT SPECIFICATION


LoRaWAN Specification	LoRaWAN 1.0.3
Frequency Band	Select 863~870MHz or 902~928MHz
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 -139dBm@SF12, BW 125 kHz.
LoRa Software	Package Forwarder
Advanced Software features	OpenVPN, built-in LoRaWAN Network Server & Node-RED, Cellular Internet Routing function
Standard Host Communication	Ethernet 100Mbps, via outdoor RJ45 connector
Optional External Cellular Module	LTE Cat 4, supports multi-region and global bands as below Frequency Bands for AU: LTE-FDD (B1/2/3/4/5/7/8/28) LTE-TDD (B40) Frequency Bands for EU: LTE-FDD (B1/3/7/8/20/28A) LTE-TDD (B38/40/41) Frequency Bands for A: LTE-FDD (B2/4/12) Frequency Bands for Global: LTE-FDD (B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28) LTE-TDD (B38/39/40/41)
Optional GPS	GPS + GLONASS
Antenna Type	Single/Dual LoRa antenna, optional 4G LTE internal/external antenna
Power supply	12 - 24 VDC
Ethernet port	Optional support PoE+ source 802.3at
Housing	Anodized Aluminum, IP67, can withstand Wind speeds up to 200 Km/h
Working temperature	-40 to 70 oC
Dimensions	Diameter of 70 mm, H:500 mm (include antenna)
Weight	< 2.0kg

4. WARRANTY & SUPPORT

Below terms and conditions are applied for products manufactured and supplied by Daviteq Technologies Inc.

4.1 Free Warranty Conditions:


1. The manufacturer undertakes to guarantee within 12 months from shipment date.
2. Product failed due to defects in material or workmanship.
3. Serial number, label, warranty stamp remains intact (not purged, detected, edited, scraped, tore, blurry, spotty, or pasted on top by certain items).
4. During the warranty period, if any problem of damage occurs due to technical manufacturing, please notify our Support Center for free warranty consultancy. Unauthorized treatments and modifications are not allowed.
5. Product failed due to the defects from the manufacturer, depending on the actual situation, Daviteq will consider replacement or repairs.

 **Note:** One way was shipping costs to the Return center shall be paid by Customers.

4.2 Paid Warranty

1. The warranty period has expired.
2. The product is not manufactured by Daviteq.
3. Product failed due to damage caused by disasters such as fire, flood, lightning or explosion, etc.
4. Product damaged during shipment.
5. Product damaged due to faulty installation, usage, or power supply.
6. Product damage caused by the customer.
7. Product rusted, stained by effects of the environment or due to vandalism, liquid (acids, chemicals, etc.)
8. Product damage is caused by unauthorized treatments and modifications.

Notes:

- * Customers will be subjected to all repairing expenses and 2-way shipping costs.
-  * If arises disagreement with the company's determining faults, both parties will have a third party inspection appraise such damage and its decision be and is the final decision.

4.3 Support

If you need our support for Daviteq device's installation, configuration, test, and decode, please email us at: support@daviteq.com OR input support request at link: <https://forms.office.com/r/XWHbYG7yy7> .Our support engineer will contact you via email or the support ticket system.

If you have any questions about the product, you can search for information on our web (<https://www.iot.daviteq.com/>). If you can't find the right information, please register an account and send us a request at link [Contact us | Daviteq Technologies](#) . We will respond within 24 hours.

5. ADVANCED TROUBLESHOOTING

Problem	Possible causes	Solution
The Ethernet port's LED is not lighting up	Gateway is in boost mode	Turn off the power supply, wait until all the gateway's LEDs are off, then change the switch from Boost to Run . After that, Power on the gateway.
Can not scan the gateway's IP address	<ol style="list-style-type: none">1. The computer and the gateway are not on the same network2. The network does not support DHCP.3. The gateway was configured to use static IP mode	<ol style="list-style-type: none">1. Check network of computer and gateway.2. Use another active DHCP server network to access the configuration interface.3. Press & hold the reset button within 5 seconds, then wait for 5 minutes before trying again.
The gateway is not online on Network Server	Wrong configuration	Check the Package Forwarder configuration on the gateway and gateway register configuration on Network Server.