

VDB3606-4G Gateway

Document Information

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Revision History

Version	Description	Writer	Date
V1.01	Original version	Manson	2025.8.1
V1.02	Add 4 configuration parameters	Sofia/Shawn	2025.10.20

Product List

Product Name	Module	Qty	Notes
Lora Gateway	VDB3606-4G	1	VDB3606-4G
12V2A Adapter		1	INPUT:AC100-240V OUTPUT: 12V2A (Not included by default; optional purchase)
WiFi Stick Antenna	L195MM DSMA	1	(Rod-style housing) Frequency range: 2400–2500 MHz
4G Stick Antenna	EFG001.DF01B.SM AMM	1	(Blade-style housing) Frequency range: 824–960, 1710–2700 MHz
LoRa Fiberglass Antenna	QX470-5V	1	Frequency range: 470–510 MHz
4G IoT Data SIM Card		1	(Not included by default; optional purchase)

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1 Product Introduction

The VDB3606-4G is a LoRa gateway supporting 4G cellular communication, providing a coverage radius of up to 4 km. It can be flexibly used in various scenarios, such as remotely controlling LoRa devices, receiving data sent by LoRa terminals, and uploading data to a backend server through the 4G module.

In addition, the VDB3606-4G supports both PoE switch power supply and a 12V/2A DC adapter, offering flexible deployment options.



Figure 1-1: VDB3606-4G

1.1 System Block Diagram

The VDB3606-4G integrates WiFi, LoRa, and 4G (optional) wireless communication modules.

The WiFi main controller communicates with the LoRa module via SPI, and with the 4G module via USB.

The device supports PoE power input as well as DC 12V/2A input.

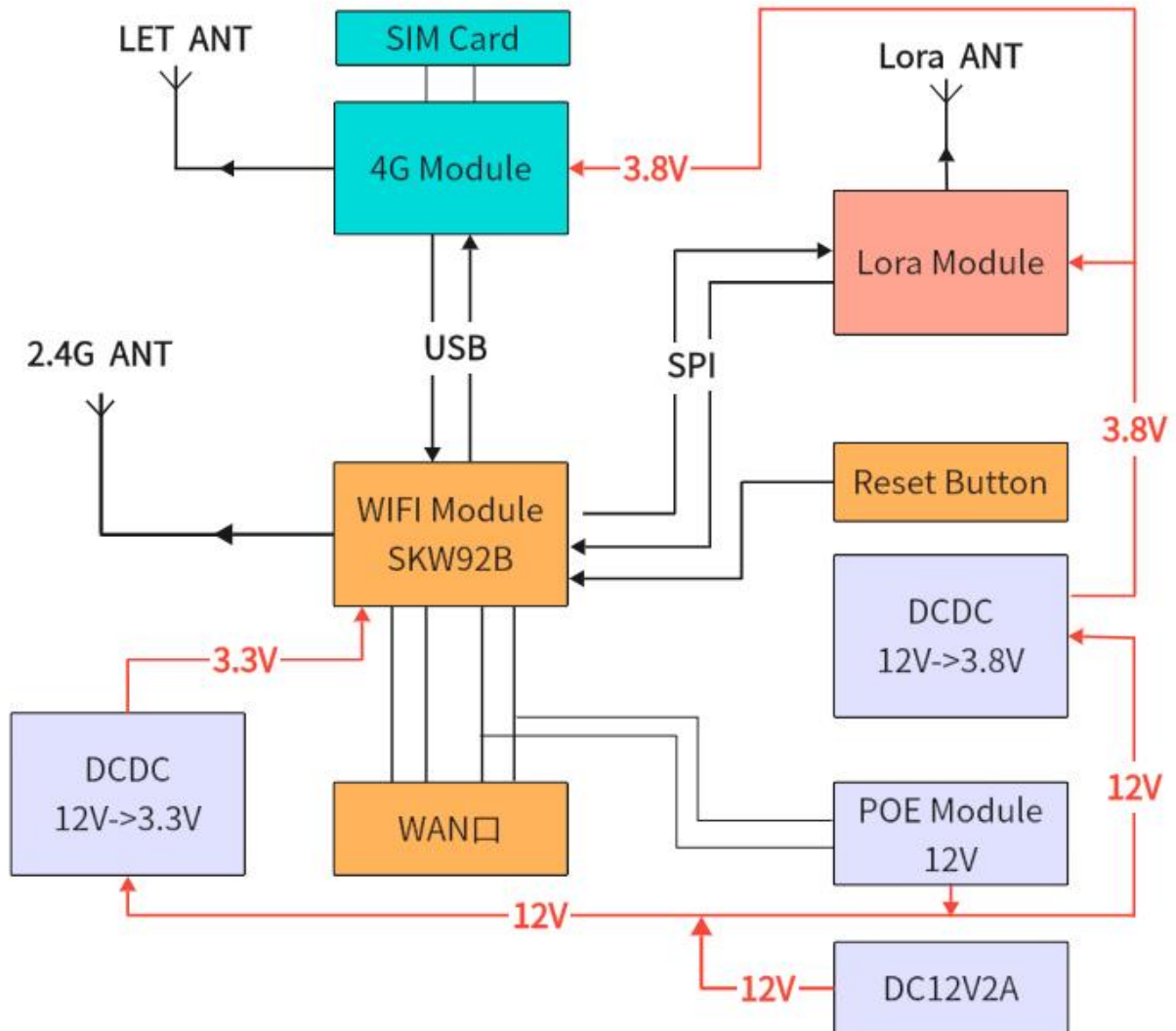


Figure 1-2: VDB3606-4G Block Diagram

1.2 Features

- ◆ Supports PoE power supply and DC 12V / 2A power input
- ◆ 2.4G WiFi supports IEEE 802.11 b/g/n
- ◆ 1 × WAN Ethernet port
- ◆ 1 × Reset button with indicator LED
- ◆ Supports LTE Cat4 (VDB3606-4G version)
- ◆ Operating Temperature: -30℃~70℃

1.3 Interface Description

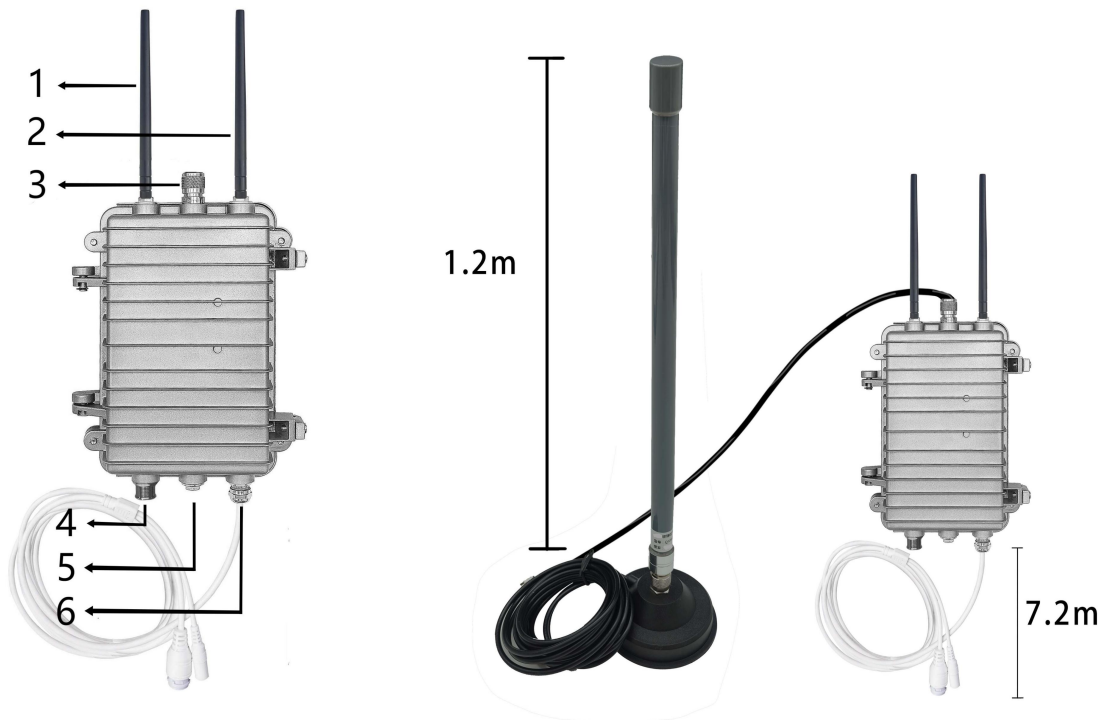


Figure 1-3: VDB3606-4G External Interface Overview

- 1: WiFi 2.4G antenna connector
- 2: 4G antenna connector (for 4G versions)
- 3: LoRa antenna N-type connector
- 4: Reset button (short press: restart; long press $\geq 6s$: restore factory settings) with power indicator LED
- 5: Reserved connector
- 6: 7.2 m integrated cable with Ethernet port and DC power connector

1.3.1 Ethernet Port

The Ethernet port of the VDB3606-4G supports Cat5 cable, enabling data transmission and supporting PoE power input.

PoE power is supplied by a PoE switch, with an input voltage range of 37–57V.

1.3.2 DC Power Input

The DC power interface supports **12V DC input**. A **12V/2A adapter** is recommended.

DC connector specifications:

- Outer diameter: **3.5 mm**
- Inner pin diameter: **1.35 mm**
- **Center positive**

Factory-supplied 12V adapter:

- Input: **AC 100–240V, 50/60Hz**
- Output: **12V 2A**
- Polarity: **Outer negative, inner positive**

Note: PoE and DC 12V/2A are **mutually exclusive power methods** — use only one at a time.

1.3.3 Reset Button

- **Short press:** WiFi controller resets
- **Long press $\geq 6s$:** Restore factory settings
- When the blue LED on the button is illuminated, the LoRa gateway is powered on.

Note: Use POE or 12V-2A adapter as power supply.

1.4 Application Scenarios

(1) LoRa Sensor Data Acquisition

The LoRa gateway parses data reported by LoRa end devices (sensors), allowing the server to monitor environmental conditions in real time.

(2) Data Transmission to Server

The WiFi main controller processes the data reported by LoRa devices and uploads it to a designated

UDP server via:

- WiFi
- Ethernet
- LTE (4G module)

It can also receive data returned by the server.

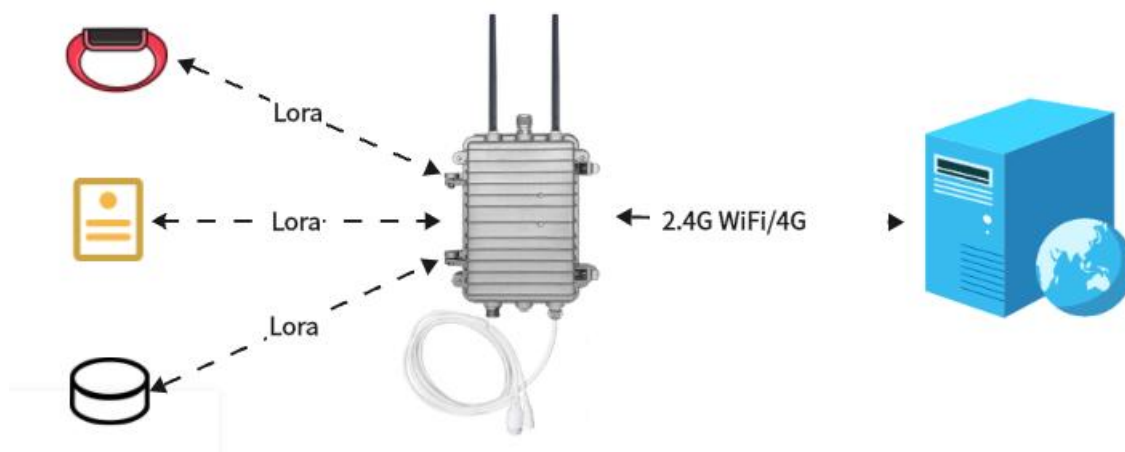


Figure 1-4: LoRa Gateway Collecting Sensor Data

Note: The VDB3606-4G can connect to the network via **Ethernet**, **LTE**, or by connecting its WiFi to a wireless router.

2 Hardware Specifications

Mechanical Dimensions	236.4 mm × 153.7 mm × 74.0 mm (tolerance ±2 mm)
Power Supply	DC:12V/2A、 POE: 37-57V
Average Current	550mA(Max)@12V
Operating Temperature	-30℃~70℃
Storage Temperature	-40℃~85℃
Physical Interfaces	1 × Ethernet port 1 × DC power connector
Waterproof Rating	IP67
WiFi 2.4GHz (VDB3606/VDB3606-4G)	
WiFi Protocols	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n
Frequency Range	2412---2484MHz
Modulation Technology	DSSS (DBPSK, DQPSK, CCK)
	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
Data Rate	IEEE 802.11b: 1,2,5.5,11Mbps
	IEEE 802.11g: 6,9,12,18,24,36,48,54Mbps
	IEEE 802.11n: MCS0--MCS7 @ HT20 MCS0--MCS7 @ HT40
Receiver Sensitivity	HT40 MCS7 : -70dBm@10% PER(MCS7)

	HT20 MCS7 : -73dBm@10% PER(MCS7)
	54M: -76dBm@ 10% PER
	11M: -89dBm@ 8% PER
Transmit Power	IEEE 802.11n: 15dBm@HT40 MCS7 15dBm@HT20 MCS7
	IEEE 802.11g: 16dBm(± 2 dBm)
	IEEE 802.11b: 18dBm(± 2 dBm)
Wireless Security	WPA/WPA2, WEP, TKIP, and AES
Operating Modes	Bridge、Gateway、AP Client
Lora(VDB3606/VDB3606-4G)	
Operating Band (ISM Band)	LoRa®: 464~928MHz/GFSK: 464~900MHz
Data Rate	Six selectable air data rates: 0.3 / 1.2 / 2.4 / 4.8 / 9.6 / 19.2 Kbps
Receiver Sensitivity	-132dBm(LoRa®, 2.4Kbps, SF12)/ -100dBm(GFSK)
Coverage Radius [2]	Approx. 4 km
Transmit Power	22dBm(Max)
4G(VDB3606-4G)	
Operating Bands (ISM)	LTE-TDD (4 bands) Band 38 / 39 / 40 / 41 LTE-FDD (4 bands) Band 1 / 3 / 5 / 8 TD-SCDMA (2 bands) Band 34 / 39 UMTS (2 bands) Band 1 / 8 EVDO (1 band) BC0 CDMA1x (1 band) BC0
Receiver Sensitivity	FDD-LTE (10 MHz) - B1 < -97 dBm - B3 < -94 dBm - B5 < -95 dBm - B8 < -94 dBm TDD-LTE (10 MHz) - B38/39/40 < -97 dBm - B41 < -95 dBm TD-SCDMA

	- B34/39 < -108 dBm CDMA 800 MHz < -108 dBm WCDMA - B1 < -108.7 dBm - B8 < -105 dBm
Transmit Power	FDD-LTE - B1/B3/B5/B8: 23 dBm ± 2 dB (Max), < -40 dBm (Min) TDD-LTE - B38/39/40/41: 23 dBm ± 2 dB (Max), < -40 dBm (Min) TD-SCDMA - B34/39: 23 dBm ± 2 dB (Max), < -50 dBm (Min) CDMA - BC0: 24 dBm ± 1 dB (Max), < -50 dBm (Min) WCDMA - B1: 23 dBm ± 2 dB (Max), < -50 dBm (Min)

Note [2]:

Reference LoRa communication distance test conditions:

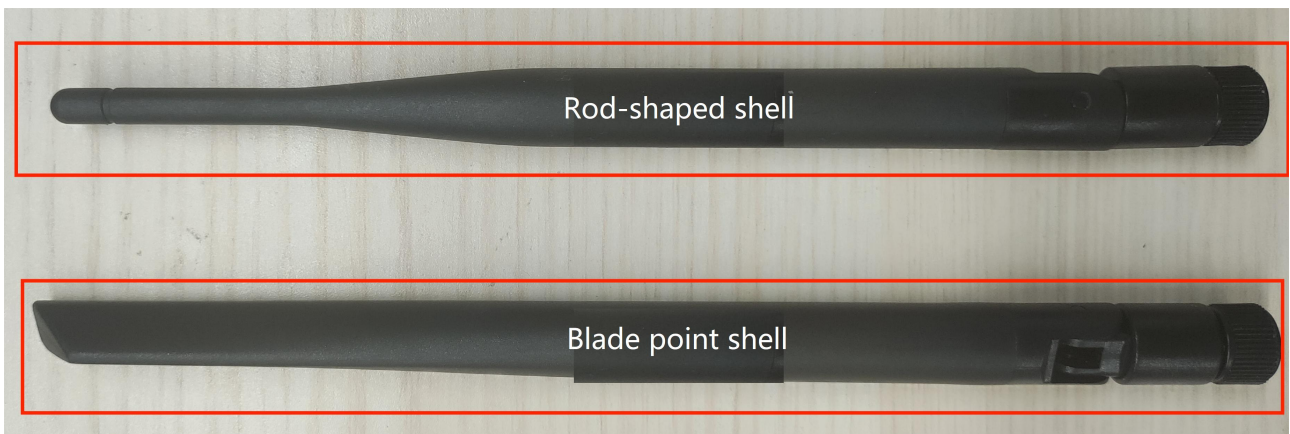
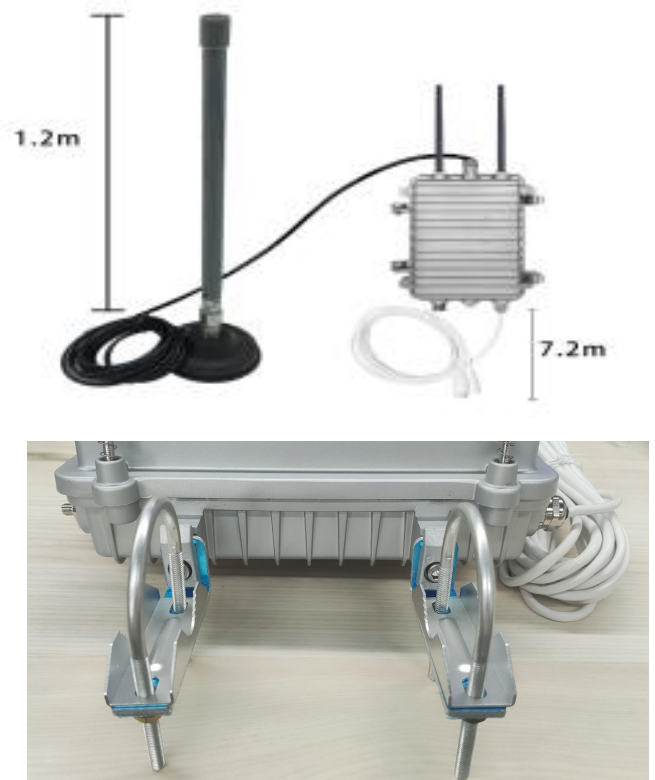
Module at max output power 22 dBm, 2.4 Kbps air rate, 5 dBi antenna gain, antenna height > 2 m, clear weather, open terrain.

3 Installation Method

The VDB3606-4G uses an **L-shaped mounting bracket** (compatible with U-bolts) for installation. The steps are as follows:

1. Remove the two screws on the enclosure using an L-shaped screwdriver, install the L-shaped bracket, then reinstall the screws.
2. Fix a steel pole to the ground, place the U-bolt around the pole, and tighten the screws to secure the bracket.
3. Install the antennas in the following order:
 - **Position 1:** 4G antenna (blade-type housing)
 - **Position 2:** RF extension cable (with magnetic base)
 - **Position 3:** WiFi antenna (rod-type housing)

If installing the **VDB3606 (non-4G version)**, Position 1 uses a **waterproof sealing plug** instead of a 4G antenna.



4 Configuration Parameters

The VDB3606 series gateways mainly transmit LoRa-collected data to the cloud server. The corresponding architecture is shown in Figure 1. In the following description, the VDB3606 gateway is referred to simply as the gateway.

End devices communicate with the gateway via LoRa. After the gateway collects the data, it sends it to a LoRaWAN cloud server. The gateway can connect to the network via Ethernet, 4G, or Wi-Fi. Users configure the basic information of the gateway by connecting directly to the gateway's Wi-Fi hotspot.

Users perform gateway and terminal device registration, data management, and other operations through the LoRaWAN open backend server.

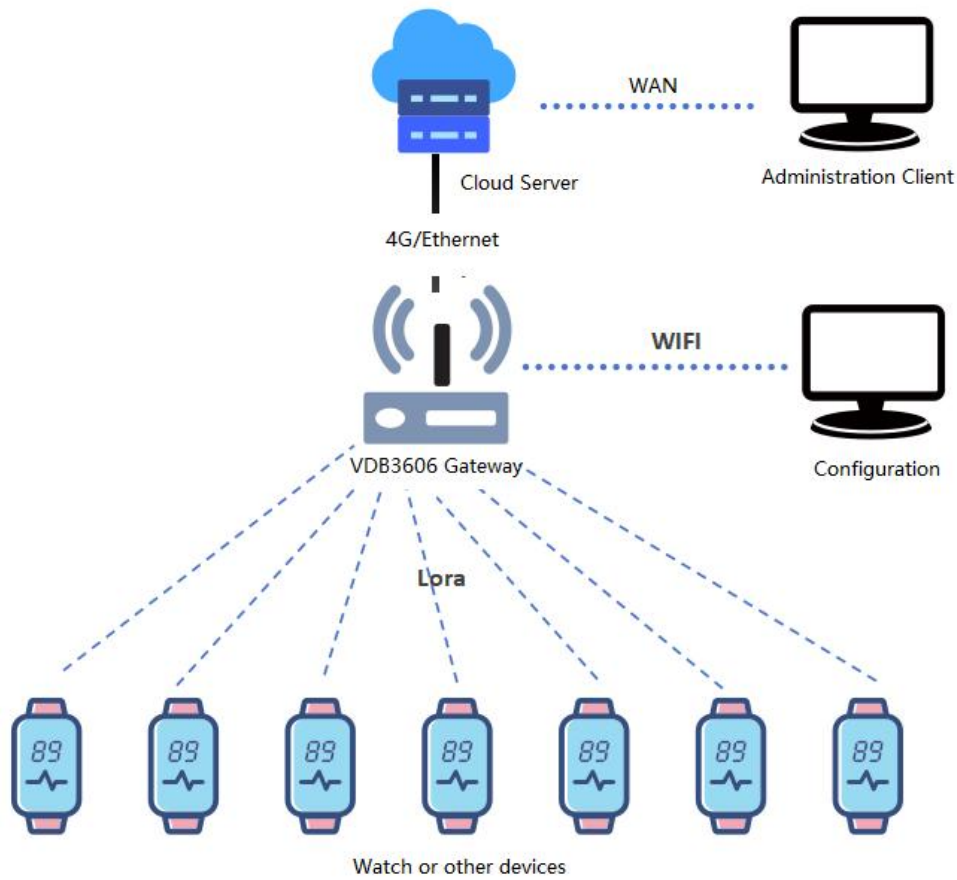
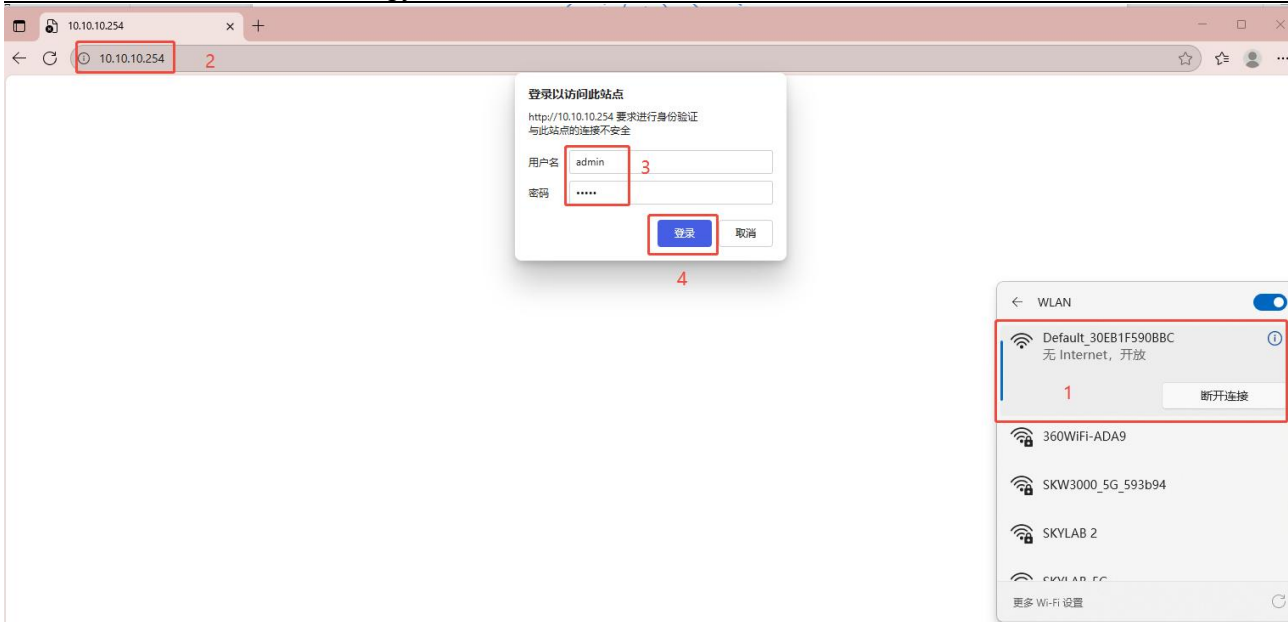


Figure 1 Communication Architecture Diagram

If the purchased device is the 4G model of VDB3606, please insert the SIM card and ensure it can connect to the network before powering on. After powering on, the VDB3606 will broadcast a Wi-Fi hotspot with a default name: "Default_30EB1FXXXXXX", and the default gateway address: "10.10.10.254". Connect your computer to the Wi-Fi hotspot, then open a browser and access 10.10.10.254 to enter the VDB3606 management interface. The default username and password are admin / admin. (Shown in Figure 2)



4.1 Network Configuration

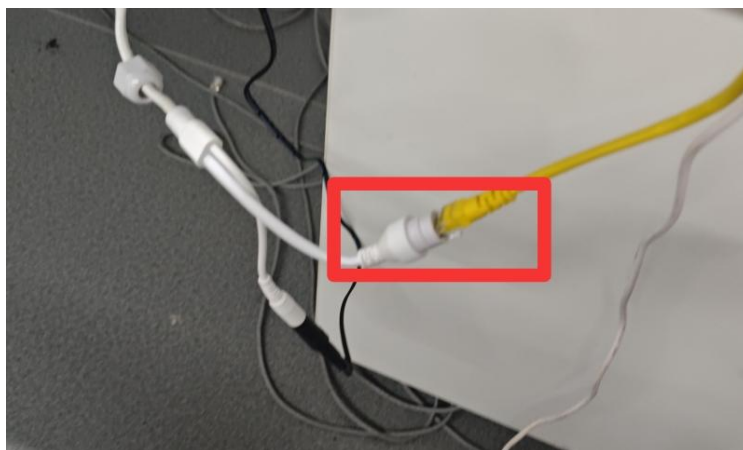
All devices support network access via **Ethernet** and **Wi-Fi**.

If the selected device supports **4G**, it will use 4G for network access by default (refer to 4.1.2). If the device does **not** support 4G, please ignore this section — those devices use **Ethernet** by default.

The following sections introduce networking via **Ethernet**, **4G**, and **Wi-Fi**, in that order.

4.1.1 Ethernet Networking

Before powering on the device, connect the network cable to a routing device with server access, as shown below.



After entering the management interface, go to "Operation Mode", select "Gateway", then click Save.



[open all](#) | [close all](#)

- 95POWER
- Operation Mode
- Internet Settings
- Wireless Settings
- NAS
- Administration
- Bluetooth

Operation Mode Configuration

You may configure the operation mode suitable for you environment.

- ☐ **Bridge:**
All ethernet and wireless interfaces are bridged into a single bridge interface.
- ☒ **Gateway:**
The first ethernet port is treated as WAN port. The other ethernet ports and the wireless interface are bridged together and are treated as LAN ports.
- ☐ **AP Client:**
The wireless apcli interface is treated as WAN port, and the wireless ap interface and the ethernet ports are LAN ports.

NAT Enabled:

TCP Timeout:

UDP Timeout:

Click “Network Settings” → “WAN”, select “Dynamic (Auto-obtained)”, then click OK to apply settings. The network will restart — connection may temporarily disconnect. Wait about 1 minute for the network to stabilize, then check the obtained IP information.

Wide Area Network (WAN) Settings

You may choose different connection type suitable for your environment. Besides, you may also configure parameters according to the selected connection type.

WAN Connection Type:

DHCP Mode

Hostname (optional)

MAC Clone

Enabled

Click “System Management” → “Status” to view the IP address acquired by the device.

Access Point Status

Let's take a look at the status of Ralink SoC Platform.

System Info	
SDK Version	W0271.1.13
System Up Time	8 mins, 11 secs
System Platform	RT2880 embedded switch
Operation Mode	Gateway Mode

Internet Configurations	
Connected Type	DHCP
WAN IP Address	
Subnet Mask	
Default Gateway	
Primary Domain Name Server	168.95.1.1
Secondary Domain Name Server	8.8.8.8
MAC Address	30:EB:1F:3F:66:A7

Local Network	
Local IP Address	192.168.10.222
Local Netmask	255.255.255.0
MAC Address	30:EB:1F:3F:66:A6

4G Status	
SIM Status	
Signal Value[range(10,31)]	
4G Network	

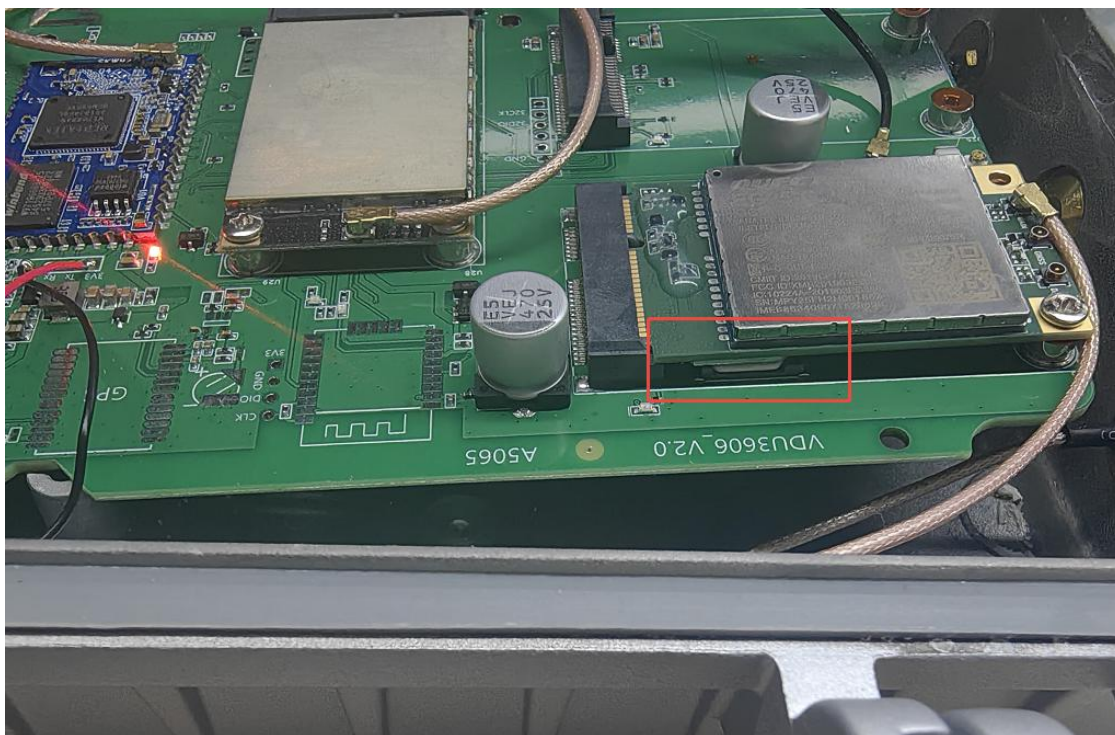
Ethernet Port Status

4.1.2 4G Networking

Only available for models that support 4G networking, such as VDB3606-4G and VDB3606-4GA.

Before powering on the device, install the SIM card and 4G antenna as shown below.

Since this model has a high waterproof rating and the SIM card is located inside the device, it is recommended to install the SIM card before shipping.



After entering the management interface, go to “Operation Mode”, select “Gateway”, and click Save.



[open all](#) | [close all](#)

- 95POWER
- Operation Mode
- Internet Settings
- Wireless Settings
- NAS
- Administration
- Bluetooth

Operation Mode Configuration

You may configure the operation mode suitable for you environment.

- ☐ Bridge:
All ethernet and wireless interfaces are bridged into a single bridge interface.
- ☒ Gateway:
The first ethernet port is treated as WAN port. The other ethernet ports and the wireless interface are bridged together and are treated as LAN ports.
- ☐ AP Client:
The wireless apcli interface is treated as WAN port, and the wireless ap interface and the ethernet ports are LAN ports.

NAT Enabled:

TCP Timeout:

UDP Timeout:

Click “Network Settings” → “WAN” , select “3G” , then click OK to apply settings.

Note: Here “3G” means cellular mobile network, not 3G-only speed.

Wide Area Network (WAN) Settings

You may choose different connection type suitable for your environment. Besides, you may also configure parameters according to the selected connection type.

WAN Connection Type: 3G

4G Mode

APN	
PIN	
Dial Number	
Username	
Password	
USB 4G modem	AutoDetect

MAC Clone

Enabled	Disable
---------	---------

Save SaveApply Cancel

Click “System Management” → “Status” to check the obtained IP information.

Access Point Status

Let's take a look at the status of Ralink SoC Platform.

System Info	
SDK Version	W0271.1.11
System Up Time	19 hours, 10 mins, 15 secs
System Platform	RT2880 embedded switch
Operation Mode	AP Client Mode
Internet Configurations	
Connected Type	3G
WAN IP Address	
Subnet Mask	
Default Gateway	
Primary Domain Name Server	
Secondary Domain Name Server	
MAC Address	(null)
Local Network	
Local IP Address	192.168.10.222
Local Netmask	255.255.255.0
MAC Address	30:EB:1F:3F:66:A6
4G Status	
SIM Status	
Signal Value[range(10,31)]	
4G Network	

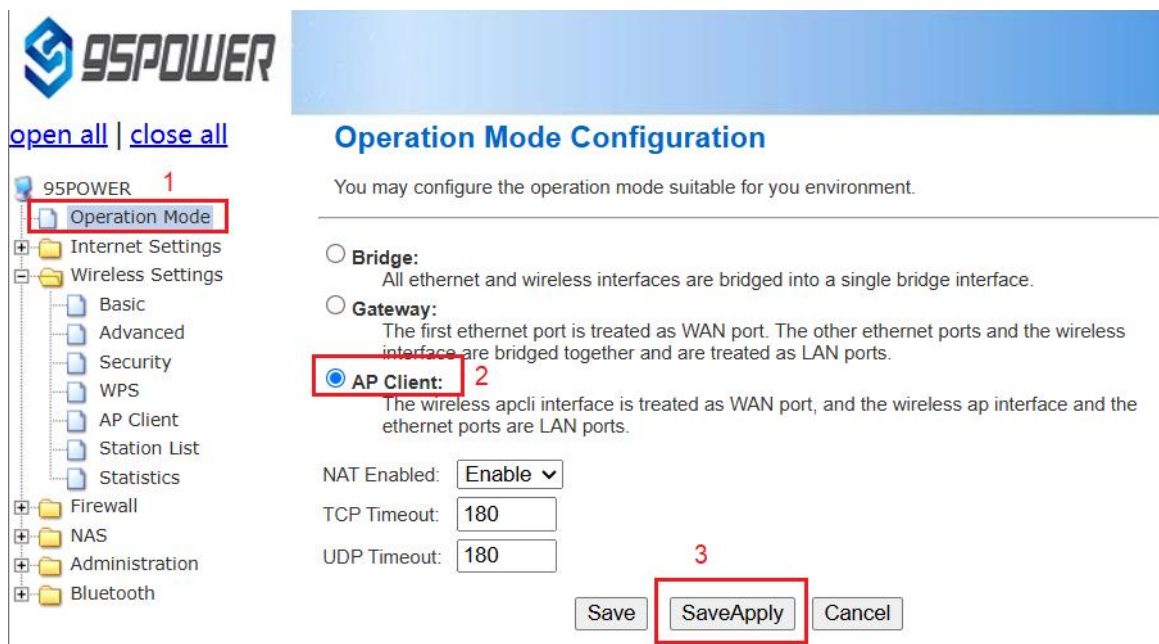
Ethernet Port Status

4.1.3 Wi-Fi Networking

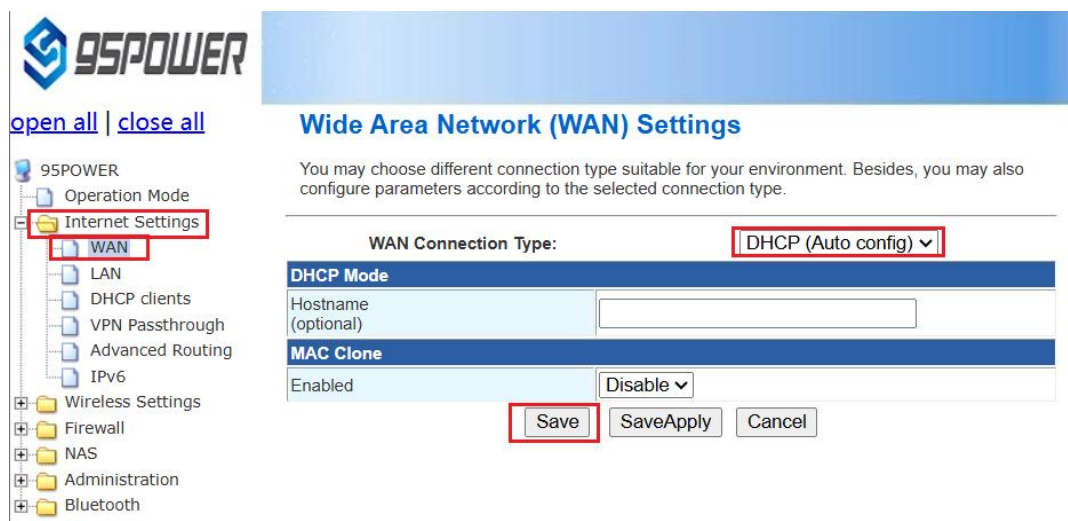
If the user's environment has good Wi-Fi signal coverage, Wi-Fi networking can be selected. The configuration steps are as follows:

⚠ Note: After Wi-Fi networking is enabled, the wired Ethernet port will switch to LAN mode. It must not be connected to a router again. It can be connected directly to a computer, and VDB3606 will assign an IP address to the computer. The computer can then access 10.10.10.254 to manage the VDB3606. If you do not need to use the Ethernet port, you may ignore this note.

Before use, attach the appropriate Wi-Fi antenna. In the management interface, go to “Operation Mode”, select “AP Client”, then click Save, as shown below.

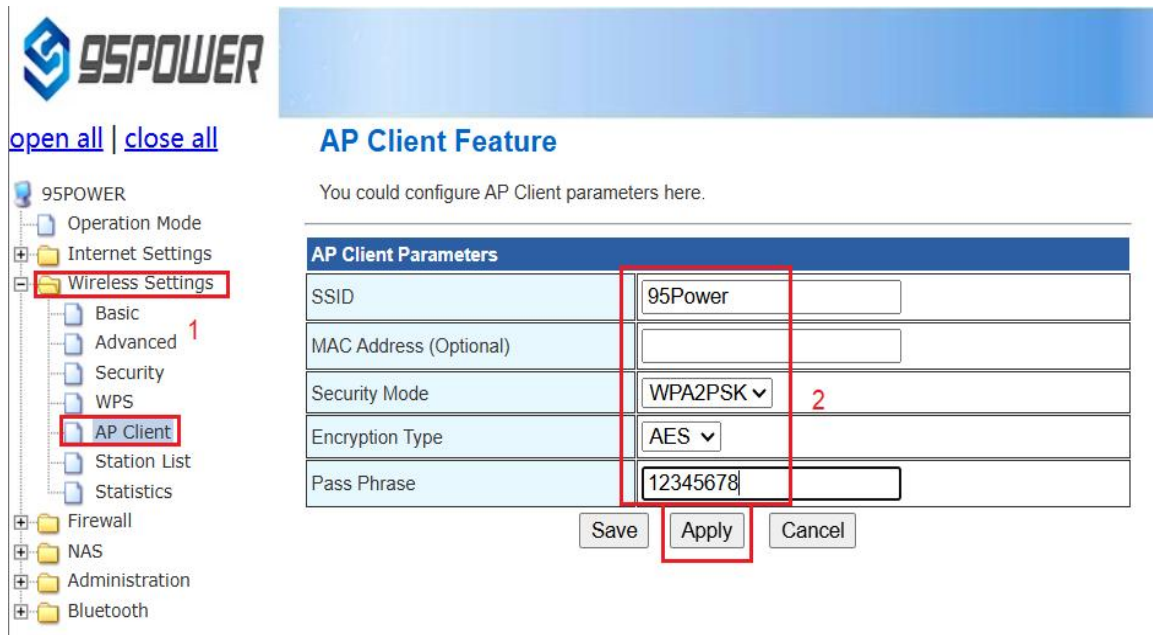


Click “Network Settings” → “WAN”, select “Dynamic (Auto-obtained)”, then click Save to apply settings. If your router supports static IP assignment, you may instead choose Static IP configuration.



Click “Wireless Network Settings” → “AP Client”, and configure the target Wi-Fi hotspot parameters.

After configuration, click OK to apply settings. The network will restart — connection may temporarily disconnect. Wait about 1 minute for the network to stabilize, then check the obtained IP.



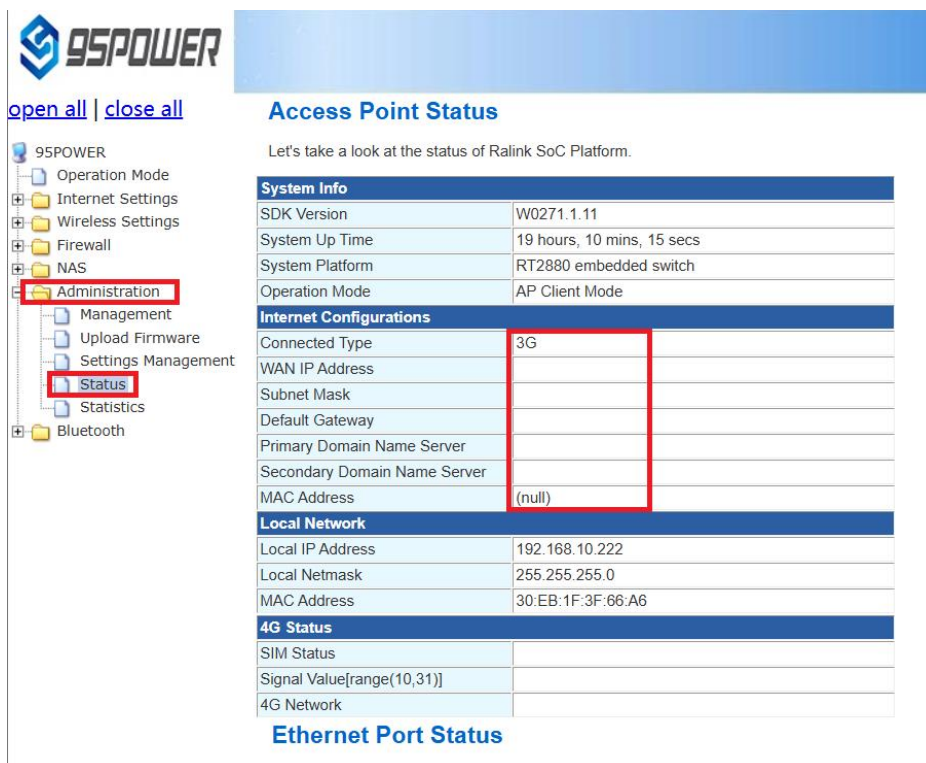
AP Client Feature

You could configure AP Client parameters here.

AP Client Parameters	
SSID	95Power
MAC Address (Optional)	
Security Mode	WPA2PSK
Encryption Type	AES
Pass Phrase	12345678

Save Apply Cancel

Click “System Management” → “Status” to view the acquired IP information.



Access Point Status

Let's take a look at the status of Ralink SoC Platform.

System Info	
SDK Version	W0271.1.11
System Up Time	19 hours, 10 mins, 15 secs
System Platform	RT2880 embedded switch
Operation Mode	AP Client Mode

Internet Configurations	
Connected Type	3G
WAN IP Address	
Subnet Mask	
Default Gateway	
Primary Domain Name Server	
Secondary Domain Name Server	
MAC Address	(null)

Local Network	
Local IP Address	192.168.10.222
Local Netmask	255.255.255.0
MAC Address	30:EB:1F:3F:66:A6

4G Status	
SIM Status	
Signal Value(range(10,31))	
4G Network	

Ethernet Port Status

4.2 Configuring LoRa Parameters and Server

After entering the management interface, go to “Wireless Network Management” → “LoRa” to configure the LoRa frequency band monitored by the gateway and the server information to which data

will be reported. Currently, the gateway only supports **cn470_0**. The parameter descriptions are as follows:

- **LoRa Gateway ID:** The unique ID of the gateway.

Note: The gateway must be registered on the LoRaWAN server using this Gateway ID; otherwise, it cannot upload data.

- **LoRa Server IP:** The address of the LoRaWAN server.
- **LoRa Up Port:** The LoRaWAN uplink port (UDP communication).
- **LoRa Down Port:** The LoRaWAN downlink port (UDP communication).

Lora Config

You could configure the minimum number of Lora settings for communication, such as Freq and Server info.

Lora Init	
Radio0 Center Freq(Hz)	474600000 (range:[470300000,509700000])
radio0 effective frequency	474300000, 474500000, 474700000, 474900000
Radio1 Center Freq	475400000 (range:[470300000,509700000])
radio1 effective frequency	475100000, 475300000, 475500000, 475700000
Lora Gateway ID	000030eb1f4462c4
Lora Server IP	
Lora up Port	1700
Lora down Port	1700

Apply Cancel

4.3 Gateway Management

As described in Section 4.2, the gateway must be registered on the LoRaWAN server before it can upload data. The LoRaWAN server used here is ChirpStack.

Users must deploy their own server. Refer to Figure 1 for deployment guidance.

After successful deployment, update the "LoRa Server IP" and uplink/downlink port settings from Section 4.2 accordingly. The communication protocol used is UDP.

SKYLAB can provide a temporary test server for user evaluation. All data will be reported to SKYLAB's server. You may contact SKYLAB to view your data reporting status.

Below are the steps to register the gateway on the server:

(1) Add a Gateway

Log in to the LoRaWAN server management portal.

Go to **Tenant** → **Gateways**, click **Add Gateway**.

- Enter a custom Name
- Enter the Gateway ID (as configured in Section 4.2), e.g., 000030eb1f4462c4

Click **Submit** to complete gateway registration.

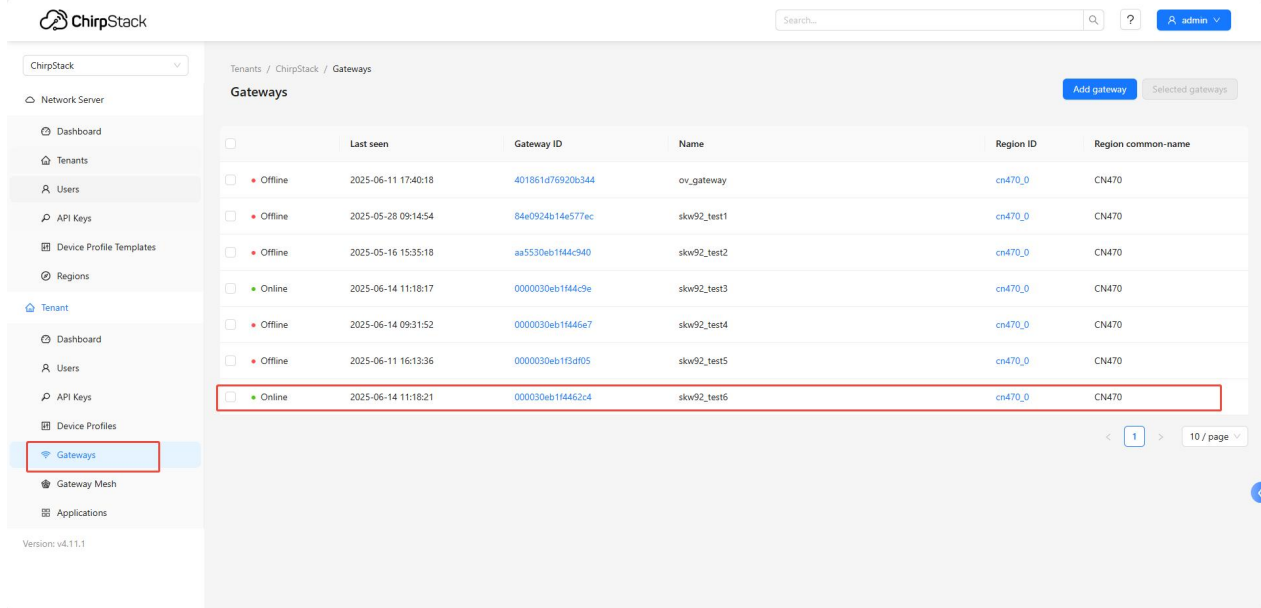
The screenshot shows the ChirpStack web interface. On the left sidebar, the 'Gateways' menu item is highlighted with a red box and a '1' label. In the main content area, the 'Add gateway' button is highlighted with a red box and a '2' label. Below the button is a table of registered gateways.

	Last seen	Gateway ID	Name	Region ID	Region common-name
☐ Offline	2025-06-11 17:40:18	401861d76920b344	ov_gateway	cn470_0	CN470
☐ Offline	2025-05-28 09:14:54	84e0924b14e577ec	skw92_test1	cn470_0	CN470
☐ Offline	2025-05-16 15:35:18	aa5530eb1f44c940	skw92_test2	cn470_0	CN470
☐ Online	2025-06-14 10:58:47	000030eb1f44c9e	skw92_test3	cn470_0	CN470
☐ Offline	2025-06-14 09:31:52	000030eb1f445e7	skw92_test4	cn470_0	CN470
☐ Offline	2025-06-11 16:13:36	000030eb1f3d05	skw92_test5	cn470_0	CN470
☐ Offline	2025-06-13 18:34:52	000030eb1f4462c4	skw92_test6	cn470_0	CN470

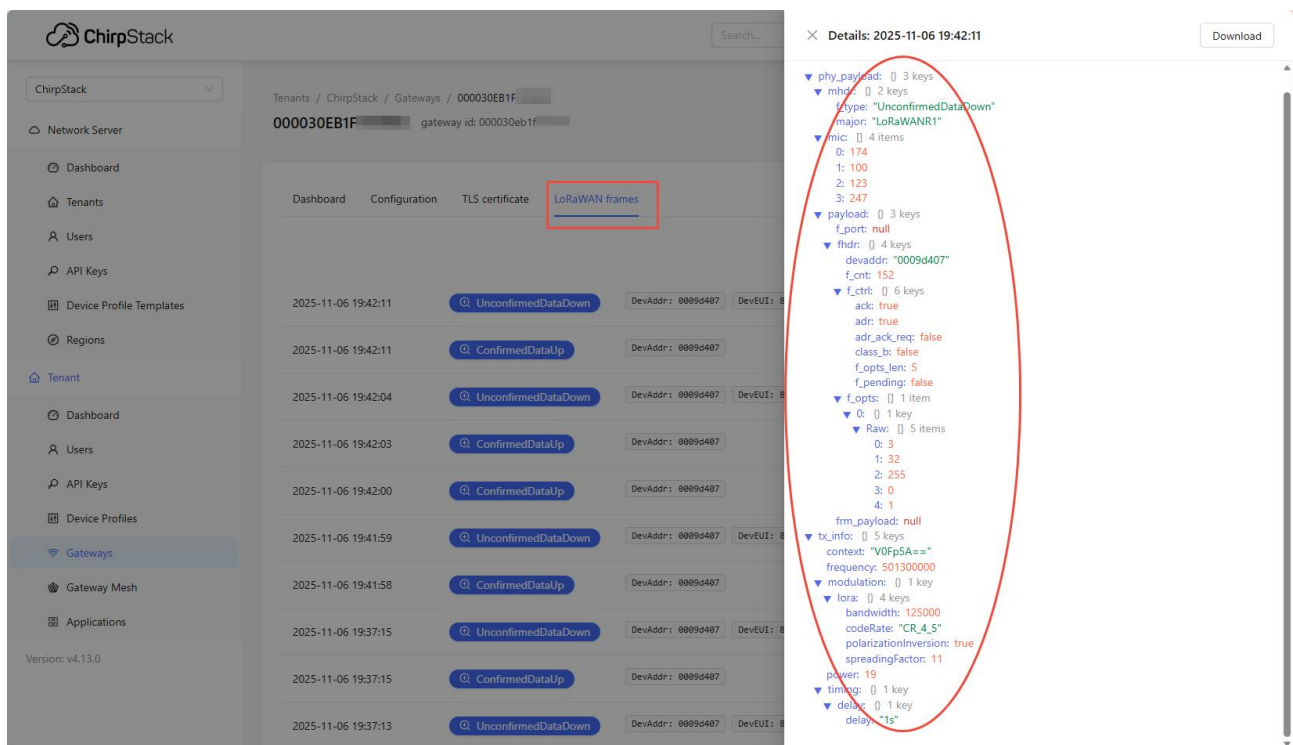
Submit

(2) View Gateway Status

Once the gateway is registered and connected to the server, you can view its online status on the webpage, as shown below.



Clicking the Gateway ID allows you to see the underlying LoRa packet information, but not the decoded content.



4.4 End Device Management

To add end devices, two pieces of information are required from the device side:

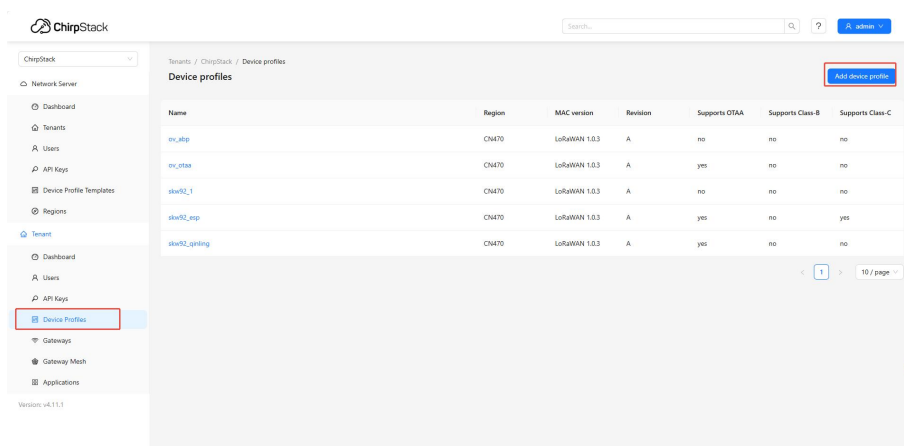
1. A unique device identifier (typically the device MAC address)
2. The device key information

Below are the detailed registration steps:

(1) Add Device Profiles (Template containing LoRaWAN band & encryption settings)

In **Device Profiles**, click **Add Device Profile**.

- Enter a custom name
- Set Region to CN470 for users in China
- If the device joins via OTAA, enable Device supports OTAA under the Join tab



(2) Add Applications (similar to grouping)

In **Applications**, click **Add Application**.

- Enter a custom name

ChirpStack

Tenants / ChirpStack / Applications

Applications

Name	Description
esp_test	
ov_abp	
ov_otaa	
ov_test1	
skw92_ginling	

1 / 10 / page

Tenants / ChirpStack / Applications / Add

Add application

General Tags

* Name

esp_test

Description

Submit

(3) Add Devices

Enter the newly created application.

Click **Add Device**.

- Enter a custom device name
- Device EUI: obtained from the LoRa end device
- Device Profile: select the profile created in step (1)
- Typically enable Disable frame-counter validation

Click **Submit**.

After submission, click the Device EUI to enter the device configuration page.

Go to **OTAA Keys** and fill in the keys provided by the LoRa terminal.

ChirpStack

Tenants / ChirpStack / Applications

Applications

Name Description

esp_test

ov_abp

ov_otaa

ov_test1

skw92_gnrlng

10 / page

Version: v4.11.1

Tenants / ChirpStack / Applications / esp_test

esp_test application id: dc6bfd58-7a10-4ae8-b295-29c095418524

Delete application

Devices Multicast groups Relays Application configuration Integrations

Add device Selected devices

Last seen	DevEUI	Name	Device profile	Battery
2025-06-03 14:03:06	d896e0ff00000240	esp_test	skw92_esp	

10 / page

Tenants / ChirpStack / Applications / esp_test / Add device

Add device

Device Tags Variables

* Name

esp_test

Description

* Device EUI (EUI64)

d896e0ff00000240 MSB C

Join EUI (EUI64)

* Device profile

skw92_esp

Device is disabled

Disable frame counter validation

Submit

Tenants / ChirpStack / Applications / esp_test

esp_test application id: dc6bfd58-7a10-4ae8-b295-29c095418524

Delete application

Devices Multicast groups Relays Application configuration Integrations

Add device Selected devices

Last seen	DevEUI	Name	Device profile	Battery
2025-06-03 14:03:06	d896e0ff00000240	esp_test	skw92_esp	

10 / page

(4) Viewing Data Uplink Records via Web Interface

In **Applications**, locate the device and enter its management page.

Click **Events** to view historical communication records.

Each row contains **Data**, which is the reported payload.

The data is Base64-encoded; expanding the message shows full communication details.

(5) Subscribing to Messages via MQTT

Subscribe to gateway messages:

Topic structure:

cn470_0/gateway/{GatewayID}/{event}

Example:

cn470_0/gateway/000030eb1f666d9c/#

This subscribes to all events of gateway **000030eb1f666d9c**.

```
cn470_0/gateway/000030eb1f666d9c/event/stats 0 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats 0 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats 0 ( 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats 0 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats j 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats j 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats j 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats j 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats w 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats w 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats w 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats w 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats Z 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats Z 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats Z 000030eb1f666d9c
cn470_0/gateway/000030eb1f666d9c/event/stats Z 000030eb1f666d9c
```

Subscribe to LoRaWAN device messages:

Topic structure:

application/{application id}/device/{deveui}/event/{event}

Example:

application/db9fbe50-e50f-4948-9a3a-24055a1c4a51/device/8cf957200009d407/event/up

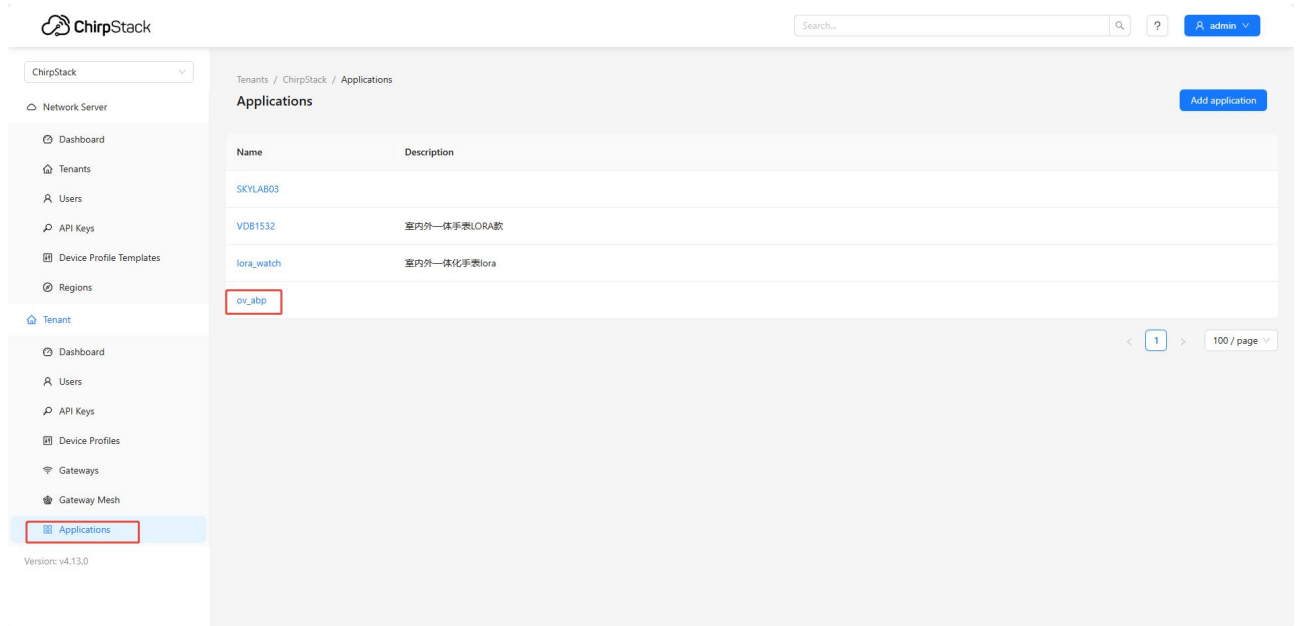
This is the uplink event for device **8cf957200009d407**.

```
application/db9fbe50-e50f-4948-9a3a-24055a1c4a51/device/8cf957200009d407/event/up {"deduplicationId":"e7ced7b4-d7f5-467c-adfa-ff6de88d4b96","time":"2025-11-07T03:30:24.001285188+00:00","deviceI
nfo":{"tenantId":"550e1f66-d161-41ab-943d-b2fda711f05","tenantName":"ChirpStack","applicationId":"db9fbe50-e50f-4948-9a3a-24055a1c4a51","applicationName":"ov_abp","deviceProfileId":"7db426d1-f
f53-40be-97cb-3c342c96c87a","deviceProfileName":"ov_abp","deviceName":"8cf957200009d407","devEui":"8cf957200009d407","deviceClassEnabled":"CLASS_A","tags":{},"devAddr":"0009d407","adr":true,"d
r":5,"fcnt":5,"fPort":8,"confirmed":true,"data":{"vQICAM9nDwms","rxInfo":{"gatewayId":"000030eb1f666d9c","uplinkId":43669,"nsTime":"2025-11-07T03:30:23.797391763+00:00","rssi":-94,"snr":5.3,"ch
annel":5,"rfchain":1,"location":{},"context":{"bmXH/w==","crcStatus":"CRC_OK"}},txInfo":{"frequency":471300000,"modulation":{"lora":{"bandwidth":125000,"spreadingFactor":7,"codeRate":"CR_4_5"}
},"regionConfigId":"cn470_0"}
application/db9fbe50-e50f-4948-9a3a-24055a1c4a51/device/8cf957200009d407/event/up {"deduplicationId":"9aef1cde-ee9a-47bd-9b8a-de7c2c457441","time":"2025-11-07T03:30:27.921601237+00:00","deviceI
nfo":{"tenantId":"550e1f66-d161-41ab-943d-b2fda711f05","tenantName":"ChirpStack","applicationId":"db9fbe50-e50f-4948-9a3a-24055a1c4a51","applicationName":"ov_abp","deviceProfileId":"7db426d1-f
f53-40be-97cb-3c342c96c87a","deviceProfileName":"ov_abp","deviceName":"8cf957200009d407","devEui":"8cf957200009d407","deviceClassEnabled":"CLASS_A","tags":{},"devAddr":"0009d407","adr":true,"d
r":5,"fcnt":6,"fPort":8,"confirmed":true,"data":{"vQICAM9nDwms","rxInfo":{"gatewayId":"000030eb1f666d9c","uplinkId":18790,"nsTime":"2025-11-07T03:30:27.718408967+00:00","rssi":-89,"snr":5.5,"c
hannel":3,"location":{},"context":{"bmXH/w==","crcStatus":"CRC_OK"}},txInfo":{"frequency":470990000,"modulation":{"lora":{"bandwidth":125000,"spreadingFactor":7,"codeRate":"CR_4_5"}},regionCo
nfigId":"cn470_0"}
```

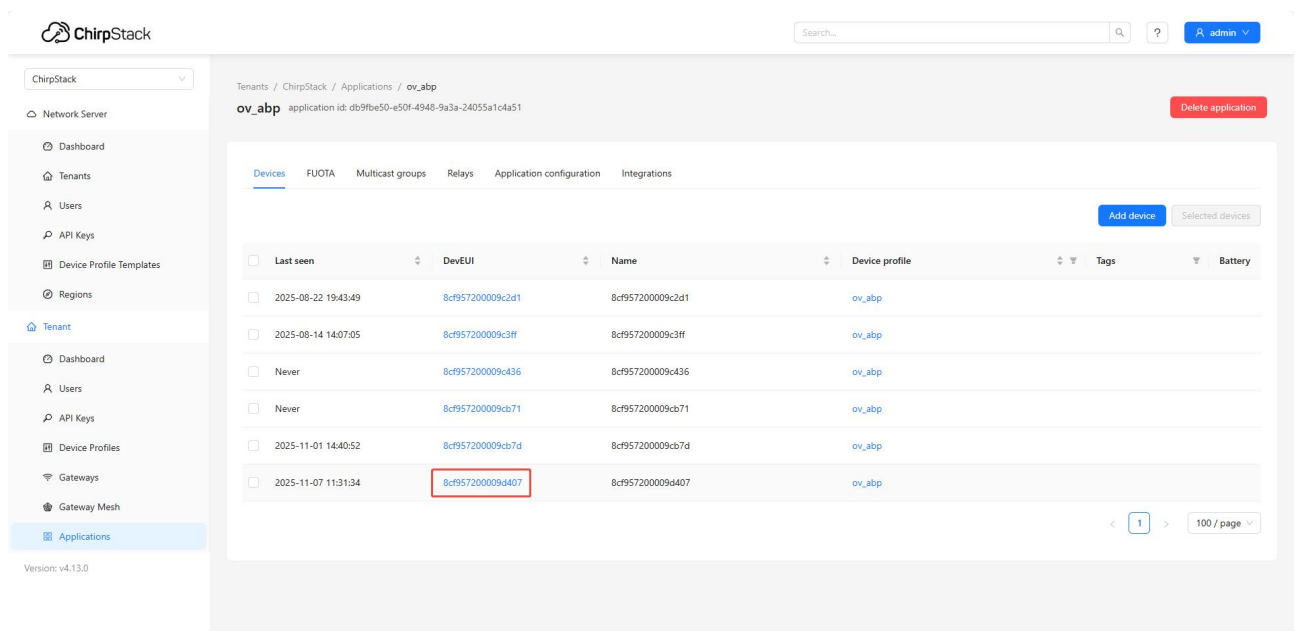
(6) Sending Downlink Messages

Via Web Interface

Select the application group:



Select the device:



Go to the **Queue** tab, enter the data to be sent. After publishing, the message appears in the list.

Once downlink is successfully sent, a **txack** event will appear in the Events tab.

Note: **Class A devices** only receive downlinks when they send an uplink. Otherwise, the gateway will keep waiting.

The screenshot displays the ChirpStack web interface. The top navigation bar includes the ChirpStack logo, a search bar, and an 'admin' button. The left sidebar shows a menu with options like Network Server, Dashboard, Tenants, Users, API Keys, Device Profile Templates, Regions, Tenant, and Applications. The main content area is titled 'Tenants / ChirpStack / Applications / ov_alp / Devices / 8cf95720009d407' and features a 'Delete device' button. The 'Queue' tab is active, showing an 'Enqueue' section with a 'Confirmed' toggle (checked), 'Port' set to 1, 'Is encrypted' toggle (unchecked), and an 'Expires at' dropdown. Below this, a 'HEX' tab is selected, showing a data field with '11111111' and a red annotation '数据'. An 'Enqueue' button is also present. A table below the enqueue section shows columns for ID, Pending, Encrypted, Frame-counter, Confirmed, FPort, Data (HEX), and Expires at. The 'Events' tab is also visible, showing a list of events with columns for timestamp, action (ack, up, track), and details like DR, Data, FCnt, and FPort. A red box highlights the 'track' action for the event at 2025-11-07 11:43:26.

Via MQTT

Topic:

application/{application id}/device/{deveui}/command/down

Message content format (Base64 payload under data):

```
{
  "devEui": "0132842004050543",
  "confirmed": false,
  "fPort": 10,
  "data": "SGVsbG8sIERldmljZQ=="
}
```


5 Model Information

Main Model	Sub Model	Part Number	Description
VDB3606		20700074	With LoRa, Wi-Fi 2.4G
VDB3606-4G		20700073	With China 4G, LoRa, Wi-Fi 2.4G; default package does not include 4G SIM card (optional purchase required)

6 Contact Information

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