ulinktech 2BFK6LNANO Small Low Cost LoRa Gateway User Guide

Contents

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Product Information

Specifications

- **Northbound interface:** Cellular(Optional): Cat-M1, WiFi: 2.4G, Ethernet: 10 Base-T/100 Base-TX
- **Southbound interface:** Dual-channel LoRa
- **Bluetooth:** For APP configuration only
- **Support:** Buzzer alarm, one-key restore to factory settings
- **LEDs:** APP LED, BLE activity LED, PWR LED
- **Power:** Type-C (5V 2A)
- **Size:** 95mm*95mm*25mm
- **Enclosure:** Mountable, Dark blue

Product Usage Instructions

Introduction

Overview:
The Nano-Gateway is a small, low-cost LoRa gateway that connects to devices via Type-C and BLE. It allows secure connections to the network via Cellular, Ethernet, or WiFi.

Product Features:

- **Northbound Interface Options: Cellular(Optional):** Cat-M1, WiFi: 2.4G, Ethernet: 10 Base-T/100 Base-TX
- **Southbound Interface:** Dual-channel LoRa
- **Bluetooth:** For APP configuration only
- **Supports** buzzer alarm and one-key restore to factory settings
- **Includes 3 LEDs:** APP LED, BLE activity LED, PWR LED

- **Power Input:** Type-C (5V 2A)
- **Dimensions:** 95mm*95mm*25mm

Hardware Environment
The Nano-Gateway features ports and connectors on both the front and back as shown in the provided figures.

Configuration

The Nano-Gateway can be configured using the Nano app on an Android phone running version 8.0 or later. Follow the steps below:

Install APP
Download and install the Nano-Gateway App on your Android device from the following link: **Nano-Gateway App Download**

Connection
To establish a connection:

- Scan QR code: Scan the QR code generated by Bluetooth MAC of Nano-Gateway.
- Show BLE list: Select the Nano-Gateway manually from the phone's Bluetooth list. Note: The Bluetooth name of Nano-Gateway is EG1000-xxxxxx.

Device Details
If the connection is successful, detailed device information will be displayed on the app.

Frequently Asked Questions (FAQ)

- **What are the supported networking modes for the Nano-Gateway?**
  The Nano-Gateway supports connectivity via Cellular, Ethernet, or WiFi for network access.
- **How can I reset the Nano-Gateway to factory settings?**
  To reset to factory settings, use the one-key restore feature available on the Nano-Gateway.

Introduction

Overview
Nano-Gateway is a small, low-cost LoRa gateway. It can connect to the user's device through Type-C and BLE. The Nano-Gateway enables the secure connection of existing equipment to the network via Cellular, Ethernet, or WiFi. It is configured through Android mobile app "Nano".

Product features

- **Northbound interface:**
  - **Cellular (Optional):** Cat M1
  - **WiFi**: 2.4G
  - **Ethernet:** 10 Base T/100 Base TX
- **Southbound interface interface** Dual channel LoRa.
- **Bluetooth** (for APP configuration only)
- **Support** buzzer alarm

- **Support** one key restore to factory settings
- **3 LEDs:** APP LED BLE activity LED PWR LED
- **Power:** Type C (5V 2A)
- **Size:** 95mm*95mm*25mm
- **Enclosure:** Mountable, Dark blue
- **Operating temperature:** 10 °C to 60 °C

Hardware environment

- Device appearance description as shown in Figure 1.

Figure1.Device appearance description

- The back of Nano Gateway as shown in Figure 2.

Figure2.The back of Nano-Gateway

- The front of Nano Gateway as shown in Figure 3.

Figure3.The front of Nano-Gateway

1. Lora connector
2. Power slot (Type C)
3. ETH slot
4. Reset button
5. 4G connector
6. SIM card slot
7. LEDS

Configuration

Nano-Gateway's configuration through phone by Nano app. Nano app only supports Android version 8.0 or later.

Install APP
Download and install the Nano-Gateway APP to Android phone. Downloads link:
https://dev.changhong.us/app_download/Nano.apk.

Connection
Running APP, the connection page as shown in Figure4.
San QR code: Scan the QR code generated by Bluetooth MAC of Nano-Gateway. Show BLE list: Select the Nano-

Gateway manually by getting the phone's Bluetooth list.
Note: Blutooth name of Nano-Gateway is "EG1000-xxxxxx". "xxxxxx" is the last six places of BLE MAC.

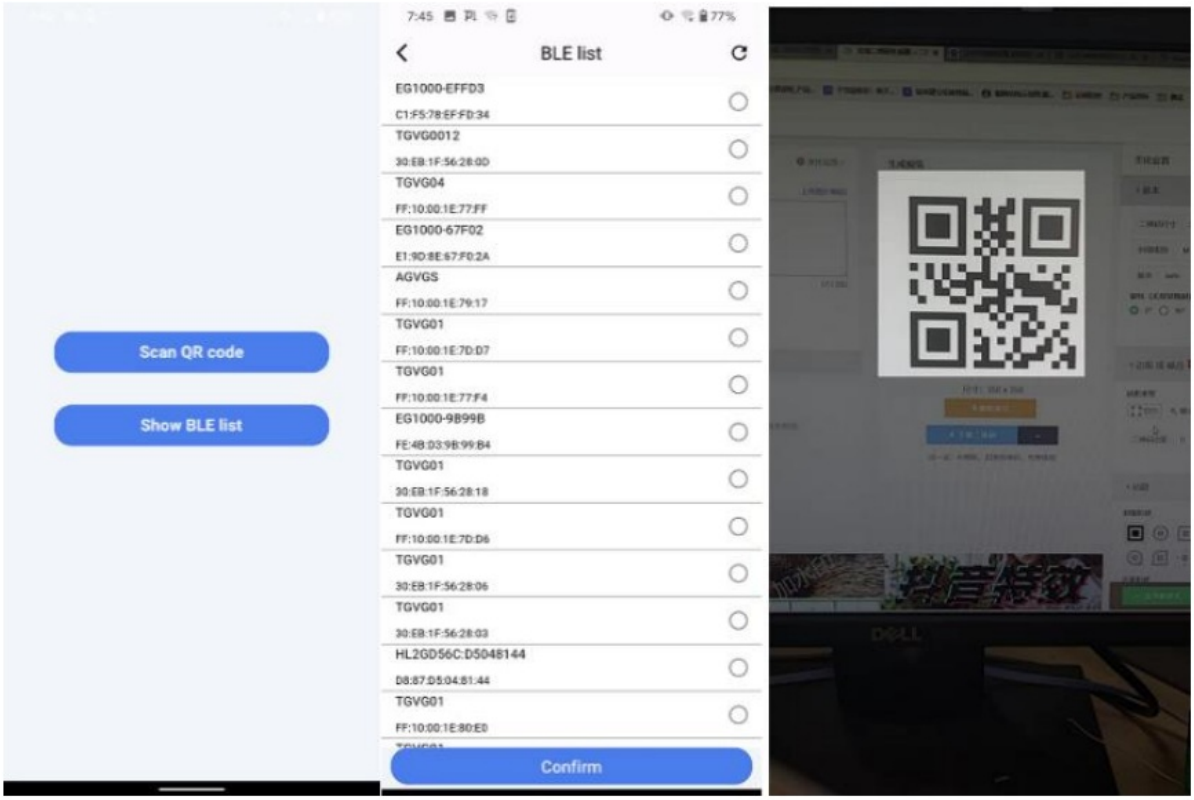

Figure4. Connection

Device details
If the connection is successful, the device details page will be displayed, as shown in Figure5. All information about the device is displayed on this page. Details are as follows:

- **Basic Info:** Basic information of the device.
- **Network:** Current networking mode.
- **NS Server:** The Server address and ports of the link.
- **LoRa:** Information about LoRa.
- **Others:** Buzzer alarm.

Figure5. Detail page

Parameter configuration

Click the setting button in the upper right corner of the details page to enter the setting page as shown in Figure 6.

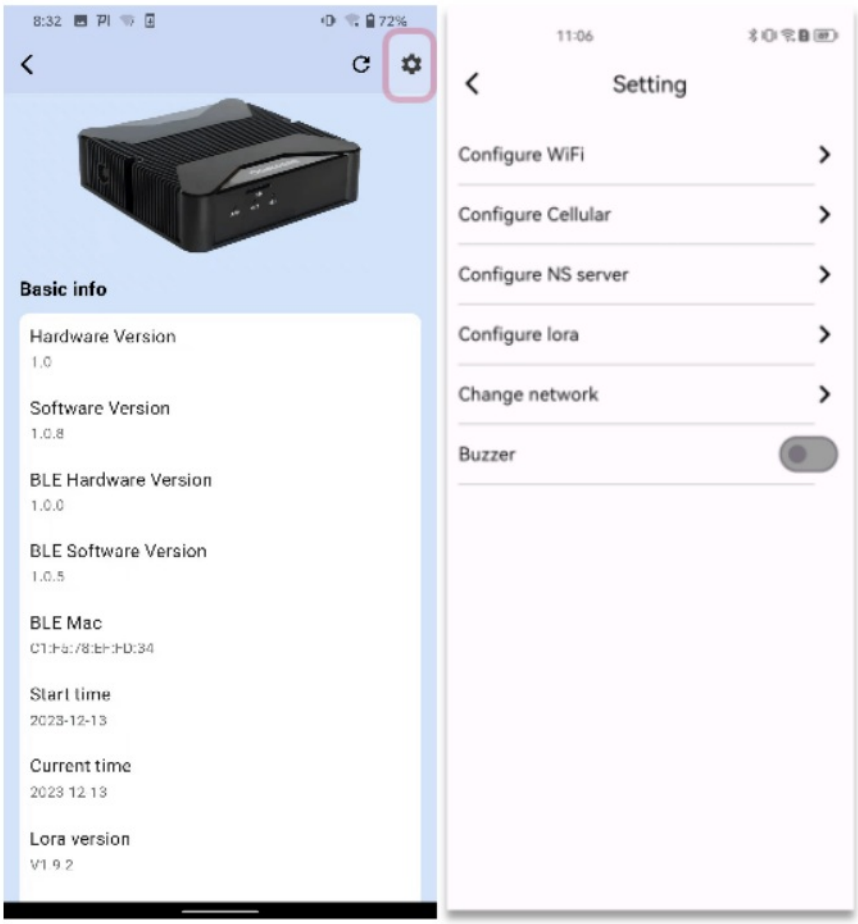

Figure6. Setting page

Configure WiFi

Select “Configure WiFi” and jump to the WiFi configuration page as shown in Figure7. Choose WiFi Access Point, and input WiFi password. Click “Confirm” button, the device will switch to the configured WiFi.

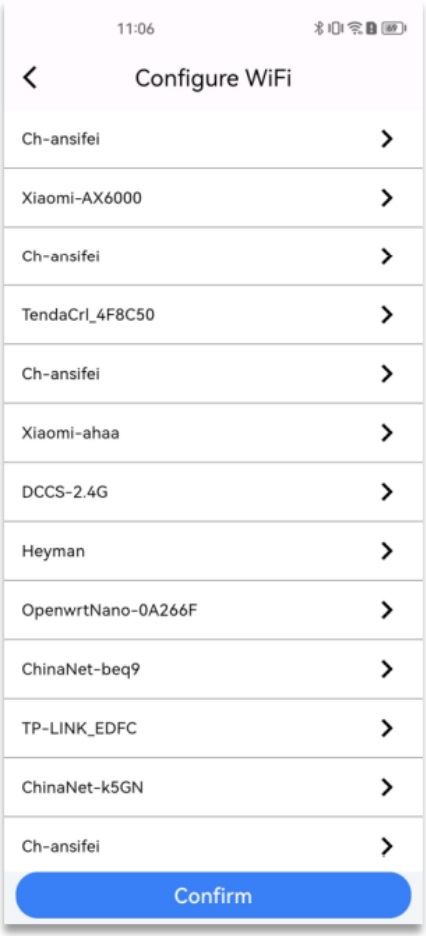

Figure7.Configure WiFi

Configure Cellular

Insert the SIM card into the SIM card slot. And the app select “Configure Cellular” and jump to the Cellular configuration page as shown in Figure 8.

- **APN:** Select or input APN. The optional list includes T-Mobile, AT&T and so on.
- **Network format:** Select the matching network format from GSM, LTE_M, LTE_NB, AUTO.
- **Username and Password:** The username and password must be set according to carrier rules.

  Then click “Confirm”. This configuration will be sent to the device for saving.

  Note: If you want to switch to Cellular, please refer to section 3.4.5

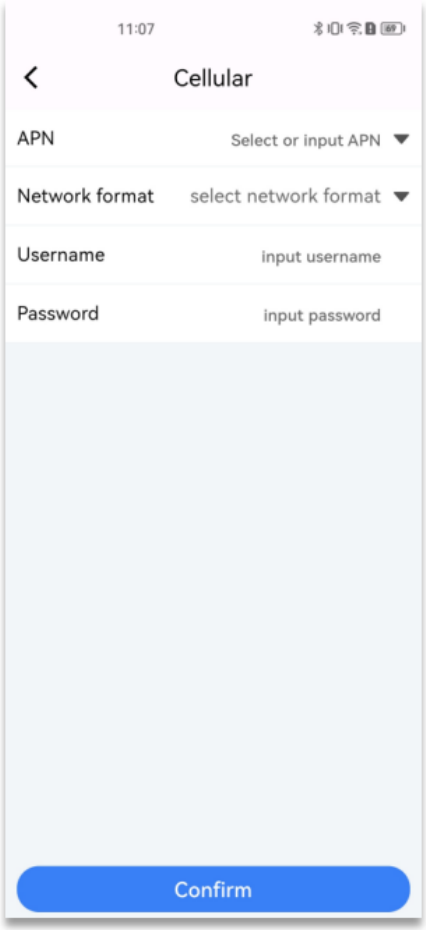

Figure8.Configure Cellular

Configure NS Server

Select “Configure NS Server” and jump to the “NS Server” page as shown in Figure 9.

- **Server address:** Enter NS server address pr
- **IP address.** Uplink port: Enter uplink port.
- **Downlink port:** Enter downlink port.

  Click “Confirm”. The configuration information is sent to device.

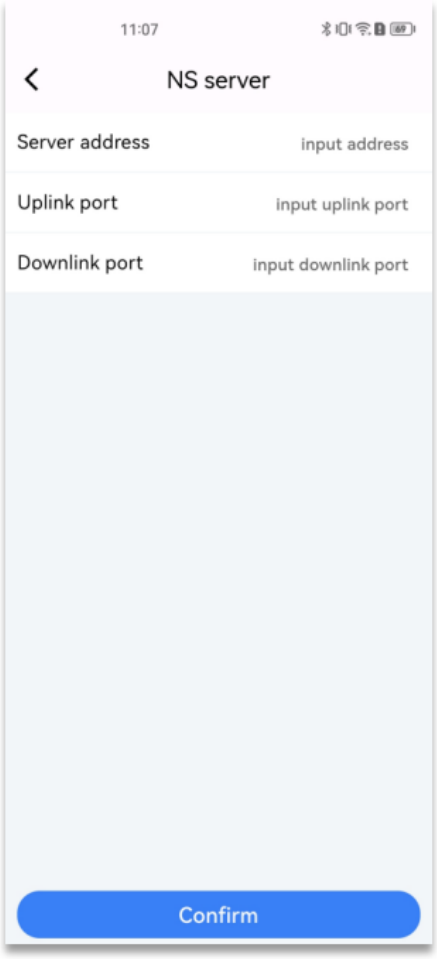

Figure9.Configure NS Server

Configure LoRa

- Select “Configure LoRa” and jump to the LoRa configure page as shown in Figure 10.
- channel: Nano-Gateway is dual-channel device.There have two channels to be selected.
  - “0” is channel 0. All LoRa configurations are for channel 0.
  - “1” is channel 1. All LoRa configurations are for channel 1.
- Receiving frequency: Enter frequency. Nano-Gateway support EU868, US915.

EU868	● The frequency range is 863-870MHz. ● All devices must support three frequency points communication 868.10MHz, 868.30MHz and 868.50MHz. ● If other frequency points are required, configure them according to the standard Lo RaWAN protocol.
US915	● The frequency range is 902-927MHz. ● There are 64 uplink channels and 8 downlink channels.The uplink channel is the re ceive frequency. ● Uplink channel 0-63: f=902.3+0.2*n(0≤ n ≤63) ● Uplink channel 64-71: f=903.0+1.6*(n-64)(64≤ n ≤71) ● Downlink channe l0-7: f=923.3+0.6*n(0≤ n ≤7)

- **Band width:** Support 125KHz, 250KHz, 500KHz. Data rate
- **rate** NanoNano-Gateway support sf7,sf8,sf9,sf10 and rate rate-adaptive in the US915 and EU868 band.
- **Complication rate rate** Support CR4/5, CR4/6, CR4/7, CR4/8. Preamble
- **Preamble** The range of preamble is [8,65535]. CRC enable
- **enable** Turn on switch is enab enable CRC verification .Turn off switch does not allow CRC verfication.

After configuring the information, click confirm.

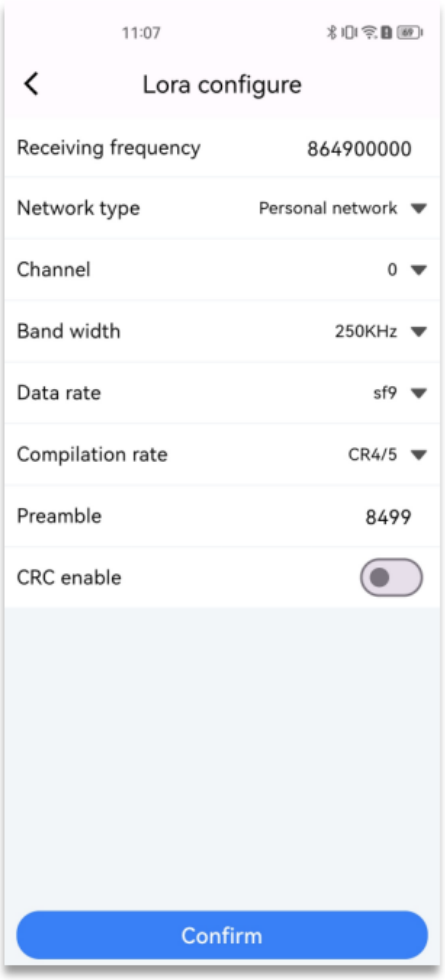

Figure10.Configure LoRa

Change network

Select “Change Network” to change the network type as shown in Figure11. Choose “WiFi”, “Ethernet”, “Cellular” or “Auto” and click “Confirm”. The APP will send a change network type command to the device.

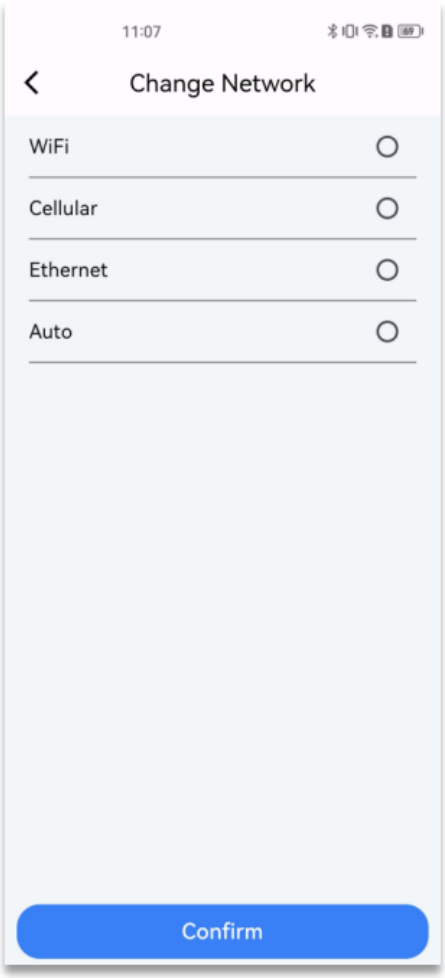

Figure11.Change Network

Buzzer
The on off key of Buzzer controls the buzzer.

- **Turn on:** the buzzer will kee p ringing;
- **Turn off:** the buzzer sounds off.

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Support

For all general, partnership, career, and/or press inquiries, please contact us through email or phone number:

- **Email:** crl@changhong.us
- **Phone:** 1-408-970-0349
- **Address:** 2580 North First Street, Suite 100, San Jose, CA 95131

FCC Caution

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference
2. this device must accept any interference received, including interference that may cause undesired operation.

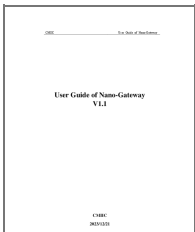
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

Documents / Resources

	ulinktech 2BFK6LNANO Small Low Cost LoRa Gateway [pdf] User Guide 2BFK6LNANO, 2BFK6LNANO Small Low Cost LoRa Gateway, Small Low Cost LoRa Gateway, Low Cost LoRa Gateway, LoRa Gateway, Gateway

References

- Home
- User Manual