F8L10GW LoRa Gateway User Manual

FCC ID: 2ALUW-F8L10GW





Page 2 of 37

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Page 3 of 37



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Pole-mounted Installation



Wall-mounted Installation

Note: Accessories are subject to the purchased model.

Page 4 of 37

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Page 5 of 37

Contents

| Chapter 1 Brief Introduction |
|--------------------------------------|
| 1.1 General |
| 1.2 Features and Benefits7 |
| 1.3 Working Principle7 |
| 1.4 Specifications |
| Chapter 2 Installation Instruction |
| 2.1 General |
| 2.2 Packing List |
| 2.2.1. Wall-mounted Packing List11 |
| 2.2.2. Pole-mounted Packing List |
| 2.3 Installation |
| 2.3.1 SIM/UIM Installation |
| 2.3.2 Wall-mounted Installation |
| 2.3.3 Pole-mounted Installation16 |
| 2.3.4 Antenna Installation17 |
| 2.4 Indicator light description |
| Chapter 3 Configuration |
| 3.1 Configuration Connection |
| 3.2 Access to Configuration Web Page |
| 3.2.1 IP Address Setting20 |
| 3.2.2 Login configuration web page21 |
| 3.3 Management & Configuration |
| 3.3.1 Connection Setting23 |
| 3.3.2 WiFi |
| 3.3.2.1 Basic Configuration |
| 3.3.3 LoRaWAN Application27 |
| 3.3.4 ADMINISTER |
| 3.3.4.1 ADMINISTER |
| 3.3.4.2 The factory default |
| 3.3.4.3 Firmware Upgrade |
| 3.3.4.4 Backup |
| 3.3.5 State |
| 3.3.5.1 F8L10GW |
| Appendix |



Chapter 1 Brief Introduction

1.1 General

F8L10GW LoRa Gateway is a wireless communication base station based on LoRaWAN protocol. It connects to LoRaWAN terminals of various applications and transmits terminal data to the cloud through 3G/4G or wired Ethernet. Support WiFi wireless configuration management and online upgrade, GPS positioning, AC power supply.

F8L10GW is complied with standard LoRaWAN protocol, it's compatible with LoRaWAN devices and NS. The product has been widely used in M2M industry, smart grid, smart transportation, industrial automation, intelligent buildings, fire control, public security, environmental protection, meteorology, digital medical treatment, telemetry, military, space exploration, agriculture, forestry, water, mining, petrochemical and other fields.





1.2 Features and Benefits

Design for Industrial Application

- High performance industrial wireless communication module.
- High performance industrial multi-channel LoRaWAN RF base station chip.
- Aluminum housing, IP65 rated.
- Support AC Power supply

Stability and Reliability

- WDT watchdog design.
- Complete anti-drop mechanism ensures data terminal always online.
- Built-in 1.5 KV electromagnetic isolation protection in Ethernet interface.
- Built-in 15KV ESD protection in SIM/UIM card interface.
- Built-in reverse phase protection, over voltage protection and lightning protection.
- Antenna lightning protection.

1.3 Working Principle

The principle chart of the F8L10GW LoRa Gatwway is as following:



Page 7 of 37



1.4 Specifications

- Communication Network: Start topology.
- Supported LoRaWAN protocol: Class A and Class B*, Class C.
- Supported frequency: EU863-870.
- Urban communication range: 6km.
- ♦ Maximum receiving sensitivity: Max -142dbm @LoRa; -70dbm @WIFI.
- 8 upstream channels,1 downstream channel.
- Safe and reliable, low latency, wireless transmission technology.
- Adaptive data rate.
- Work mode: support sending and receiving different frequency, same frequency.
- Positioning function: GPS.
- Network connectivity: 3G / 4G, Ethernet.
- Management: WiFi wireless management and upgrade.
- TF card local storage supported.
- Operating temperature: -35~+50°C.
- Dimensions: 289.4*223.62*115 mm.
- IP65 rated.
- ◆ Power supply: 100-240V~ 50/60Hz, 0.8A.
- Electrical Performance.

| No. | Parameter | Technical Data |
|-----|-------------------------------|----------------|
| 1 | Rated input voltage | 100~240V AC |
| 2 | Rated output voltage | 12V |
| 3 | Rated output current | 3A |
| 4 | Input undervoltage protection | No |
| 5 | Output overvoltage protection | Yes |
| 6 | Output overcurrent protection | Yes |
| 7 | Short circuit protection | Yes |
| 8 | Lightning protection level | ЗКА |
| 9 | Input wire diameter | 5-7mm |

Cellular Specification

| ITEM | CONTENT |
|----------------|---|
| Frequency Band | FDD-LTE Band 2/4/5/7/17 |
| | DC-HSPA/HSPA+/HSDPA/ HSUPA/WCDMA Band 1/8 |
| | GSM850 / PCS1900 |



WIFI Specification

| Item | Content |
|-----------------|----------------------|
| Standard | IEEE802.11b/g/n |
| Security | WEP, WPA, WPA2, etc. |
| Frequency Range | 2412MHz to 2462MHz |

LoRa Specification

| Item | Content |
|---------------------------------|----------------------|
| Communication Protocol and Band | 902MHz to 928MHz(US) |

GPS RX Specification

| ltem | Content |
|----------------------|--------------------|
| Frequency Band | 1559MHz to 1610MHz |
| Operating Frequency: | 1575.42MHz |

Power supply

| Item | Content | |
|---|-------------------------|--|
| Input Power | 100-240V~ 50/60Hz, 0.8A | |
| Output Power | 12V=3.0A | |
| Note: The power plug considered as disconnect device of Power Supply. | | |

Environmental Limits

| ltem | Content | | |
|---|----------|--|--|
| Operating Temperature | -35~50⁰C | | |
| Note 1: Do not use the products in the environment at too high or too low temperature. | | | |
| The suitable temperature for the product and accessories is -35 $^\circ$ C-50 $^\circ$ C. | | | |

Antenna Specification

| ltem | Content | | |
|--|---|--|--|
| LoRa antenna | N-type female, Omni-Directional FRP Antenna , 2dBi gain | | |
| GPS antenna | N-type female, Omni-Directional FRP Antenna , 2dBi gain | | |
| WiFi antenna | N-type female, Omni-Directional FRP Antenna, 2dBi gain. | | |
| WWAN antenna | N-type female, Omni-Directional FRP Antenna, 0dBi gain | | |
| Note 1: Please ensure to use only the antenna offered by the manufacturer. Using | | | |
| unauthorized antenna may cause danger and violate the authorization | | | |
| Note 2: Antenna connector (N-type) was not unique connector, need installed by | | | |
| trained, professional engineer | | | |

Page 9 of 37



F8L10GW LoRa Gateway

Federal Communication Commission (FCC) Radiation Exposure Statement

The device has been evaluated to meet general RF exposure requirement, The device can be used in portable exposure condition without restriction Federal Communication Commission (FCC) Radiation Exposure Statement Power is so low that no RF exposure calculation is needed.

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes 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.

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

Page 10 of 37



Chapter 2 Installation Instruction

2.1 General

F8L10GW must be installed correctly in order to achieve the design function. The installation must be conducted by a qualified engineer recognized by the Four-Faith.

> Warning:

1. Power off before installation.

2. Don't remove the cover, power interface, antenna interface.

2.2 Packing List

2.2.1. Wall-mounted Packing List

| Item | Qty | Remark |
|-----------------------------------|-----|----------|
| F8L10GW LoRa Gateway | 1 | |
| 4G Omni-Directional FRP Antenna | 1 | Optional |
| WIFI Omni-Directional FRP Antenna | 1 | |
| GPS Omni-Directional FRP Antenna | 1 | |
| LoRa Omni-Directional FRP Antenna | 1 | |
| Bracket | 1 | |
| Swelling screw ø14mm | 3 | |
| Wire | 1 | Optional |
| User manual CD | 1 | Optional |
| QC passed card | 1 | |
| Warranty card | 1 | |

2.2.2. Pole-mounted Packing List

| Item | Qty | Remark |
|-----------------------------------|-----|----------|
| F8L10GW gateway | 1 | |
| 4G Omni-Directional FRP Antenna | 1 | Optional |
| WIFI Omni-Directional FRP Antenna | 1 | |
| GPS Omni-Directional FRP Antenna | 1 | |
| LoRa Omni-Directional FRP Antenna | 1 | |
| Bracket | 2 | |
| Wire | 1 | Optional |
| User manual CD | 1 | Optional |



F8L10GW LoRa Gateway

| QC passed card | 1 | |
|----------------|---|--|
| Warranty card | 1 | |

2.3 Installation



2.3.1 SIM/UIM Installation

- 1. Cut off the power.
- 2. Unscrew the M6 screws, figure. 2.3.1 as below.
- 3. Insert SIM/UIM card, figure 2.3.2 as below.
- 4. Push the SIM/UIM card and the card will pop up automatically.
- 5. Tighten M6 screws.

Warning:

- 1. Power must be off before installing SIM/UIM card.
- 2. M6 screws must be tightened and fixed.

Page 12 of 37



F8L10GW LoRa Gateway



Figure 2-3-1 Unscrew the M6 screws



Figure 2-3-2 Insert SIM/UIM card

2.3.2 Wall-mounted Installation

Step 1: The wall where the gateway is installed must be flat and open-sided, make sure no shield within 5 meters around LoRa antenna. Drill 3 holes of ø14mm diameter, 60 mm depth (swelling screw is about 50mm long) according to the position of the bracket mounting holes, Figure 2-3-3.

(Note: Press the shelf against the wall, mark it, and then punch the hole in the wall.)

Page 13 of 37



Figure 2-3-3 Hole Location Diagram

Step 2: Fix the swelling screws in the bracket, Figure 2-3-4.



Figure 2-3-4 Swelling Screws Installation Diagram

Step 3: Fix the bracket on the wall and tighten the screw, Figure 2-3-5.

Page 14 of 37

F8L10GW LoRa Gateway





Figure 2-3-5 Bracket Installation Diagram

Step 4: Tighten the four screws and fix the gateway on the bracket, then install the antenna, Figure 2-3-6.

Page 15 of 37

F8L10GW LoRa Gateway





Figure 2-3-6 Fix Four Screws Diagram

2.3.3 Pole-mounted Installation

- Step 1: Prepare a pole with 70~90mm diameter, make sure no shield within 5 meters around LoRa antenna.
- Step 2: Put the clamp into the pole, fix the clamp in the pole with screws.



Page 16 of 37





Note: Pole is not included in the product.

2.3.4 Antenna Installation

After gateway is installed on the wall or pole, connect the Matching antennas to the antenna interface.Make sure the antennas are tightened to get best signal. Fig. 2.3.7

Note: Each antenna must install to the right interface and Using a tool to tighten, otherwise the gateway won't work properly and waterproof.

Page 17 of 37





2.4 Indicator light description

The F8L10GW offers the following indicators: Power, System, Online, SIM, LoRa, WAN, WIFI, Signal Strength. Status description of each indicator are as below:

| Indicator light | Status Description | |
|-----------------|--------------------|------------------------|
| | Red light on | Power on |
| FVK | Red light off | Power off |
| eve | Yellow light flash | System work properly |
| 515 | Yellow light off | System work improperly |
| | Blue light on | WIFI on |
| | Blue light off | WIFI off |
| LoRa | Green light on | LoRa normal |



F8L10GW LoRa Gateway

| | Green light off | LoRa abnormal | | |
|--------------|----------------------|---------------------------------|--|--|
| | Green light flash | Data Transmitting | | |
| | Turn on an light | Weak signal strength (less | | |
| | Turri on an light | than -90db) | | |
| 3G/4G Signal | Turn on two lights | Medium signal strength | | |
| | rum on two lights | (-70db~-90db) | | |
| | Turn on throa lights | Better signal strength (greater | | |
| | rum on timee lights | than -70db) | | |
| Online | Green light off | Online | | |
| | Green light on | Offline | | |



Chapter 3 Configuration

3.1 Configuration Connection

Before configuring the F8L10GW, connect the F8L10GW and the PC network cable or WIFI. When connect with network cable, one end is connected to any Ethernet interface of F8L10GW "Local Network" (LAN port), and the other end is connected to the Ethernet interface of PC. When connect with WIFI, the default SSID of F8L10GW is "FOUR-FAITH" without password verification.



3.2 Access to Configuration Web Page

3.2.1 IP Address Setting

Specify IP address

Set the IP address of PC as 192.168.1.9(or other IP address of 192.168.1 network segment), the subnet mask as 255.255.255.0, and the default gateway as 192.168.1.1.DNS as a locally available DNS server.

Page 20 of 37



| Internet Protocol Version 4(TCP/IPv4) Properties | | | | |
|---|--|--|--|--|
| General | | | | |
| You can get IP settings assigned auton this capability. Otherwise, you need to for the appropriate IP settings. | natically if your network supports ask your network administrator | | | |
| O <u>O</u> btain an IP address automatical | ly | | | |
| Use the following IP address: | | | | |
| IP address: | 192 . 168 . 10 . 48 | | | |
| Subnet mask: | 255 . 255 . 255 . 0 | | | |
| Default gateway: | 192 . 168 . 10 . 1 | | | |
| Obtain DNS server address autom | natically | | | |
| • Use the following DNS server add | resses: | | | |
| Preferred DNS server: | 218 . 85 . 152 . 99 | | | |
| Alternate DNS server: | 218 . 85 . 157 . 99 | | | |
| Vaļidate settings upon exit | Ad <u>v</u> anced | | | |
| | OK Cancel | | | |

3.2.2 Login configuration web page

This chapter describes the main functions of the relevant pages. Visit the web pages via web browser by the computer connected to F8L10GW. There are 11 main pages: Settings, Wireless, Service, VPN, Security, Access Restrictions, NAT, QoS Settings, Applications, Management and Status. Users enable to browse slave pages by click one main page. This manual introduces the parameters related to F8L10GW, other parameters can be default.

To access F8L10GW web-based Web management tool, enter the default IP address 192.168.1.1 of the F8L10GW in the address bar of browser, press enter. When login the web page in the first time, there will display a page shows as blow to tip users to modify the default user name and password. User can click "Change Password" to modify user name and password if needed.

Page 21 of 37





| Your Router is currently | not protected and uses an unsafe default username and password combination, please change it using the following dialog! |
|--------------------------|---|
| Router Password | |
| Router Username | admin |
| Router Password | •••• |
| Re-enter to confirm | •••• |
| | |
| | Change Password |
| | |

Then access to main page.

| Set | tup Wireless | Services | VPN | Security | Access Restrictions | NAT | Qo5 | Арр | Admin | Status | |
|-------|------------------|----------|---------|----------------|-------------------------------------|-------------|-----|-----|---------------------------------|------------------------------|-----------------------------|
| Ro | outer Informatio | on | | | | | | | Нејр | | more |
| Syste | em | | | | | | | | Router Nar | ne: | |
| Ro | uter Name | | Four-Fa | aith | | | | | This is the sp router, which | pecific name h vou set on | for the the <i>Setup</i> |
| Ro | uter Model | | Four-Fa | aith Router | | | | | tab. | | |
| Fir | mware Version | | F8L100 | GW CN470 v1.0 |) (Jul <u>10 2018 17</u> :18:52) st | d - build 3 | 201 | | MAC Addre | 55: | |
| MA | AC Address | | 54:D0: | B4:85:8F:3C | | | | | This is the ro | outer's MAC | Address, as |
| Но | ost Name | | | | | | | | seen by you | . 101 1 | |
| w | AN Domain Name | | | | | | | | Firmware V | /ersion: | nt firmware |
| LA | N Domain Name | | | | | | | | rms is the rt | Julei's Curre | ne miniware. |
| Cu | irrent Time | | Not ava | ailable | | | | | Current Tin | ne: | n the sta |
| Up | otime | | 3 min | | | | | | server set or tab. | the Setup | / Basic Setup |
| Seria | Applications | | | | | | | | Uptime: | | |
| Sta | atus | | Disable | d | | | | | This is a mea router has b | asure of the een "up" and | time the d running. |
| Mem | ory | | | | | | | | Load Avera | ge: | |
| То | tal Available | | 125224 | kB / 131072 kB | kB | 969 | % | | This is given | as three nu | mbers that d during the |
| Fre | ee | | 100544 | kB / 125224 kB | kB | 809 | % | | last one, five | e, and fifteer | minute |
| Us | ed | | 24680 | kB / 125224 kt | в | 20% | % | | periodal | | |
| Bu | iffers | | 2452 k | B / 24680 kB | | 109 | % | | | | |
| Ca | ched | | 8500 k | B / 24680 kB | | 349 | % | | | | |

Users need to enter user name and password if it is the first time to login.

| http://192.168.1.1 Your connection to this site is not private | | | | |
|---|--|--|--|--|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Log in Cancel | | | | |
| | | | | |

Enter username and password to access the web page, default username and password are both "admin". (You can change the username and password on

Page 22 of 37



administration page.) then click "OK".

3.3 Management & Configuration

3.3.1 Connection Setting

Click "Settings" and open first basic setting web page. On this page, change basic settings according to the notices, click "Save" button to change the setting but don't take effect, click "Apply" button to make settings to take effect, or click "Cancel" button to cancel the settings.

Basic Settings:

"WAN Connection Type" setting section describes how to configure F8L10GW to connect to the Internet. Details on this can be obtained from your ISP.

WAN Connection Type

Select the Internet connection type provided by your ISP from the drop-down menu, WAN connection type includes 7 modes: Disable, Static IP, Automatic Configuration -DHCP, PPPOE, 3G/UMTS/4G/LTE and DHCP-4G. The F8L10GW (LAN port only) provides wired Ethernet connections and DHCP-4G (default) connections.

| Setup Wireless Services WAN Setup VAN Connection Type | VPN Security Access Restrictions NAT QoS Disabled Static IP Automatic Configuration - DHCP dhcp-46 popo_e | App Admin Status Help more Automatic Configuration - DHCP: |
|---|--|--|
| Connection Type | 3G/UMTS/4G/LTE | This setting is most commonly used by Cable operators. |
| User Name | | |
| Password | Unmask | Host Name: Enter the host name provided by your |
| Dial String | *99***1# (UMTS/3G/3.5G) \vee | ISP. |
| APN | | Domain Name: |
| PIN | Unmask | Enter the domain name provided by your ISP. |
| Allow these authentication | | |
| Keep Online Detection | Ping 🗸 | Local IP Address: This is the address of the router. |
| Detection Interval | 120 Sec. | |
| Primary Detection Server IP | 114 114 114 | Subnet Mask: This is the subnet mask of the router |
| Backup Detection Server IP | 208 . 67 . 220 . 220 | This is the subject mask of the fourth. |
| Fixed WAN IP | ◯ Enable | DHCP Server: |
| Fixed WAN GW Address | ○ Enable | addresses. |
| Enable Dial Failure to Restart | Enable O Disable (Default: 10 minutes) | Start IP Address: |
| Force reconnect | ○ Enable | The address you would like to start with. |
| Wan Nat | ● Enable ○ Disable | |
| STP | ○ Enable | Maximum DHCP Users: You may limit the number of addresses your router bands out. 0 |

Mode 1: Wired Ethernet connection



In the menu "WAN Settings" - > "WAN Connection Type" - > "Connection Type" select "Disabled", in the menu of "Network Settings" - > "Router IP Configuration" Set IP address of gateway with the same LAN IP.Then Wired Ethernet Connection is finished.

| WAN Setup | | Help more |
|---------------------|-------------------|--|
| AN Connection Type | | Automatic Configuration - DHCP: |
| Connection Type | Disabled V | Cable operators. |
| Wan Nat | Enable O Disable | Host Name: |
| STP | ○ Enable | Enter the host name provided by your ISP. |
| tional Settings | | Domain Name: |
| Router Name | Four-Faith | Enter the domain name provided by |
| Host Name | | your ise. |
| Domain Name | | Local IP Address: |
| мти | Auto 🗸 1500 | This is the address of the router. |
| Force Net Card Mode | Auto 🗸 | Subnet Mask: |
| | | This is the subnet mask of the router. |
| Network Setup | | DHCP Server: |
| uter IP | | Allows the router to manage your IP addresses. |
| Local IP Address | 192 . 168 . 1 . 1 | |
| Subnet Mask | 255 . 255 . 0 | Start IP Address: The address you would like to start |
| Gateway | 0.0.0 | with. |
| Local DNS | 0.0.0 | Maximum DHCP Users: |
| | | You may limit the number of |

Mode 2: DHCP-4G

| Connection Type | dhcp-4G | ~ | |
|-----------------|---------|---|--|
| | | | |

The IP address of the WAN port is obtained by dhcp-4G

Keep Online

| Keep Online Detection | Ping 🗸 |
|-----------------------------|-----------------------|
| Detection Interval | 120 Sec. |
| Primary Detection Server IP | 114 . 114 . 114 . 114 |
| Backup Detection Server IP | 208 . 67 . 220 . 220 |

This function is to detect whether the Internet connection is active. If users set it, the F8L10GW will automatically detect the Internet connection. Once gateway detects the link disconnected or invalid, the system will automatically reconnect and re-establish the effective connection. If network is busy or in private network, Router mode is recommended.

Keep Online:

None: disable Keep Online function.

Ping: Send ping packet to detect connection. In this mode, "Detection Interval",

Page 24 of 37



"Primary Detection Server IP" and "Backup Detection Server IP" must be configured correctly.

Route: Detect connection with route method. In this mode, "Detection Interval", "Primary Detection Server IP" and "Backup Detection Server IP" must be configured correctly.

PPP: The PPP mode is to detect connection. In this mode, "Detection Interval" must be configured correctly.

Detection Interval: time interval between two detection, unit is second

Primary Detection Server IP: Primary server IP used to response gateway's detection packet. This item is only valid for "Ping" and "Route".

Backup Detection Server IP: Backup server IP used to response gateway's detection packet. This item is only valid for "Ping" and "Route".

STP

| | | _ |
|-----|----------|---|
| STP | ○ Enable | |

STP (Spanning Tree Protocol) can be applied to the loop network, Through certain algorithm achieves path redundancy, and loop network cuts to tree-based network without loop in the meantime, thus to avoid the hyperplasia and infinite circulation of a message in the loop network.

3.3.2 WiFi

WiFi function of F8L10GW gateway/gateway is to provide parameter configuration and online upgrade.

Page 25 of 37



3.3.2.1 Basic Configuration

| Setup Wireless Services | ; VPN Security | Access Restrictions | NAT QoS | Арр | Admin | Status |
|---|--------------------------------|---------------------|--|-----|--|---|
| Wireless Physical Interfac | e wl0 [2.4 GHz] | | | | Неір | more |
| Wireless Network | \odot Enable \bigcirc Disa | ble | | | Wireless No If you wish t | e twork Mode: o exclude Wireless-G |
| Physical Interface ra0 - SSID [Four-Faith] HWAddr [54:D0:B4:85:8F:3E] | | | would like to disable wireless access, choose <i>Disable</i> . Note : when changing wireless mode. | | | |
| Wireless Network Mode | Mixed V | | | | some advan succeptible t Rate" or "Fra | ced parameters are o be modified ("Basic ame Burst"). |
| Wireless Network Name (SSID) Wireless Channel | Four-Faith 11 - 2.462 GHz | | | | | |
| Channel Width | Auto 🗸 | | | | | |
| Wireless SSID Broadcast | Enable O Disal | ble | | | | |
| Network Configuration | 🔾 Unbridged 🖲 E | Iridged | | | | |
| Virtual Interfaces | | | | | | |
| | Add | | | | | |
| Save Apply Settings Cancel Changes | | | | | | |

Enable: Turn on WIFI.

Disable: Turn off WIFI.

Wireless mode: AP, client, ad-hoc, relay and relay bridge are available.

Wireless network mode:

Hybrid: Support wireless devices with 802.11b/g/n standards at the same time Bg-mix: Support both 802.11b and 802.11g standards wireless devices.

B Only: Only 802.11b standard wireless devices are supported.

G Only: Only 802.11g standard wireless devices are supported.

NG-mix: It supports 802.11g and 802.11n wireless devices.

Only N: Only 802.11n standard wireless devices are supported.

- **8021.11n transmission mode:** When the wireless network mode is "only N", select its transmission modes:
- **Greenbelt**: When sure that no other 802.11a/b/g device in the surrounding environment using the same channel, using this mode or increasing throughput. If there are other 802.11a/b/g devices in the environment that using the same channel, the messages you send can be errors, re-sends, and so on.

Mixture: This model is the opposite of the greenbelt model, but it reduces throughput. **Wireless network name (SSID)**: The network name Shared by all devices in a wireless

network, and the SSID of all devices is the same.SSID consists of Numbers and letters, case - sensitive, no more than 32 characters.

Wireless channels: there are 1-13 channels available. In the environment of multiple wireless devices, please try to avoid using the same channels as other devices.



Channel width: 20MHZ and 40MHZ are available.

Broadband: when the channel is 40MHZ, you can choose upper or lower.

Wireless SSID Broadcast:

Enable: broadcast SSID.

Disable: hide SSID.

Network configuration:

Bridged: the bridge is connected to F8L10GW. In general, select bridged.

Unbridged: when no bridge is connected to F8L10GW, and the IP address needs

to be manually configured.

| Network Configuration | Onbridged O Bridged |
|-----------------------|---------------------|
| Multicast forwarding | 🔿 Enable 💿 Disable |
| Masquerade / NAT | Enable O Disable |
| IP Address | 0.0.0 |
| Subnet Mask | 0.0.0. |

Virtual interface: Click to add a virtual interface, after successfully addition, click to remove the virtual interface.

| Virtual Interfaces ra1 SSID [ff_vaj |] |
|-------------------------------------|-----------------------|
| Wireless Network Name (SSID) | ff_vap |
| Wireless SSID Broadcast | ● Enable ○ Disable |
| AP Isolation | ○ Enable |
| Network Configuration | ○ Unbridged ● Bridged |
| | Add Remove |

AP independence: completely isolate all wireless client devices so that they can only access a fixed network with AP connections.

Note: save settings: save your changes, after changing the mode of "wireless", "wireless network model", "wireless width" and "broadband" option, please click on this button, and then configure other options.

3.3.3 LoRa Application

Users can configure the parameters of forwarding function of LoRa gateway according to the requirements.

Page 27 of 37



F8L10GW LoRa Gateway

| Rawan Galeway basic Conny | |
|-----------------------------------|---------------------|
| LoRaWAN | ● Enable ○ Disable |
| Enable Connect Failure to Restart | ● Enable ○ Disable |
| config type | CN470 🗸 |
| Server IP | 120.42.46.98 |
| serv_port_up | 1700 |
| serv_port_down | 1700 |
| LoRaWAN | Enable Disable |
| LoRaWAN Gateway ID | 54D0B4FFFE858F3C |
| forward_crc_valid | Enable O Disable |
| forward_crc_error | ○ Enable |
| | |

LoRa Gateway infrastructure configuration:

Enable the failed restart mechanism: when the gateway connection server fails, the restart mechanism will start working.

Server address: the IP address of LoRaWAN data service center

Server upstream port: LoRaWAN data service center program uplink port. The range is 0-65535 and the default value is 1700.

Server downstream port: LoRaWAN data service center program downlink port. The range is 0-65535 and the default value is 1700.

Advanced configuration of LoRa Gateway:

LoRa Gateway ID: the unique identity of the LoRa Gateway, through which the server can distinguish different LoRa Gateway.

CRC validation ok: Turn on/off CRC for validation. Default is on.

CRC validation error: Turn on or off the CRC validation error function. The default is close.

CRC validation disabled: Turn on or off CRC validation. The default is close.

3.3.4 ADMINISTER

3.3.4.1 ADMINISTER

This page allows network administrators to manage specific F8L10GW functions to ensure access and security.



The new password shall not exceed 32 characters in length and shall not contain any spaces. Make sure your password is the same as your new password, or it will fail. **Warning:**

The default username: admin.

We strongly recommend that you modify the factory default password, all users trying to access and modify the F8L10GW should use the correct F8L10GW password, thus they can access and use it.

Web Access

This feature allows you to manage F8L10GW using either the HTTP protocol or the HTTPS protocol. If you choose to disable this feature, you will need to reboot manually. You can also activate or disable the F8L10GW information page.

That way you can use a password to protect the page (enter the correct username and password).

| V | Veb Access | |
|---|-------------------------------|--------------------|
| | Protocol | ✓ НТТР □ НТТРS |
| | Auto-Refresh (in seconds) | 3 |
| | Enable Info Site | ● Enable ○ Disable |
| | Info Site Password Protection | Enabled |
| | | |

Protocols: protocols support web pages include HTTP and HTTPS.

Automatic refresh (second): adjust the time interval for automatic refresh of Web interface. 0 means turn off this feature.

Display system information page before login: whether to enable display system information page before login.

System information page password protection: whether to enable the system information page password protection function.

Page 29 of 37



| Remote Access | | |
|--------------------|--------------------|-----------------------------------|
| Web GUI Management | Enable O Disable | |
| Use HTTPS | | |
| Web GUI Port | 8088 | (Default: 8088, Range: 1 - 65535) |
| Local Web GUI Port | 80 | (Default: 80, Range: 1 - 65535) |
| SSH Management | 🖲 Enable 🗌 Disable | |
| SSH Remote Port | 22 | (Default: 22, Range: 1 - 65535) |
| Telnet Management | 🔾 Enable 💿 Disable | |
| | | |

Web interface management: this feature allows you to manage F8L10GW from a remote location over the Internet. To disable this feature, keep the default Settings. To enable this feature, select enable and remotely manage F8L10GW using the specified port on your computer (default is 8080). If you have not yet set the password, you must set the default password for your own F8L10GW.

For remote management F8L10GW, go to http://xxx.xxx.xxx.8080 (x represents F8L10GW Internet IP address, 8080 on behalf of the specified port) in your web browser address bar. You will be requested to enter the F8L10GW password.

If you are using HTTPS, you need to specify the URL to https://xxx.xxx.xxx.8080 (not all firmware support the reconstruction of the SSL)

SSH management: you can enable SSH to secure remote access to F8L10GW.Note that to understand the setup of the SSH daemon, you can access more content on the service page.

Warning:

If the remote F8L10GW access function is enabled, anyone who knows the Internet IP address and password of F8L10GW can change the setting of F8L10GW. **Telnet management:** Enable or disable remote Telnet functionality.

| 9 | ron | | |
|---|----------------------|--------------------|--|
| | Cron | ● Enable ○ Disable | |
| | Additional Cron Jobs | | |
| | | | |
| | | | |

Cron: Cron's subsystem is the Linux command you plan to execute. You will need to use the command line or startup script in actual use.



Domoto Managony

| rungemene | | |
|----------------------|--|---|
| te Management | ● Enable ○ Disable | |
| ol | ○ v1.0 ● v2.0 | |
| te Login Server IP | 121.43.158.101 | |
| te Login Server Port | 8039 | (Default: 44008, Range: 1 - 65535) |
| Interval | 60 | (Default: 60Sec.Range: 1 - 999) |
| w Upload Interval | 300 | (Default: 300Sec.Range: 1 - 86400) |
| e Number | 88888888 | |
| Phone Number | 13888888888 | |
| e Type Description | Router | |
| mized Local Domian | wifi.cn | |
| | te Management col te Login Server IP te Login Server Port Interval ow Upload Interval e Number e Phone Number e Type Description mized Local Domian | te Management Enable Disable V1.0 V2.0 te Login Server IP 121.43.158.101 te Login Server Port 8039 Interval 60 ww Upload Interval 300 e Number 1388888888 e Type Description Router mized Local Domian wifi.cn |

Equipment management: The F8L10GW can be monitored and managed, parameter configuration, WIFI advertising update through the customized remote management server.

3.3.4.2 The factory default

| Reset router settings | | ٦ ' |
|--------------------------|-------------------------------|-----|
| Restore Factory Defaults | ○ Yes ● No | |
| | | |
| | | Ľ |
| | Apply Settings Cancel Changes | |

To clear all configurations and restore to factory default values, click "Yes" button and save. All the Settings will lose when revert to the default Settings. The default configuration for this feature is "No". For more information, click "More".

Page 31 of 37



3.3.4.3 Firmware Upgrade

| Firmware Management | | | | | |
|--|---------|--|--|--|--|
| Firmware Upgrade | | | | | |
| Please select a file to upgrade | 浏览 | | | | |
| | | | | | |
| | WARNING | | | | |
| Upgrading firmware may take a few minutes. Do not turn off the power or press the reset button! | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | Upgrade | | | | |

Firmware upgrade: new firmware can be loaded onto F8L10GW.The new firmware version will be available at <u>www.four-faith.com</u> for free. It is no essential to download the updated firmware version that F8L10GW work, unless there is useful functionality in new version.

Note: Upgrading of F8L10GW firmware may lose the configuration Settings. It is essential to back up the setup information of F8L10GW before upgrading.

After the refresh, reset to: Click "Default Settings" to reset the default Settings of the firmware version of F8L10GW after the upgrade.

Click browse, select the upgrading firmware file, and then click the "Upgrade" button to start. It may take few minutes, please do not turn off the power or press the reset button during this period.

3.3.4.4 Backup

This page is used to back up or restore the F8L10GW configuration file.

Page 32 of 37



| Backup Configuration | | | |
|---|--------------------------------------|-----------|--|
| Backup Settings Click the "Backup" button to download th | he configuration backup file to your | computer. | |
| Restore Configuration | | | |
| Restore Settings | | | |
| Please select a file to restore | | 浏览 | |
| W A R N I N G Only upload files backed up using this firmware and from the same model of router. Do not upload any files that were not created by this interface! | | | |
| | Backup Restore | | |

To backup the F8L10GW configuration file, click the "Backup" button. After that, follow the instructions on the screen.

To restore the F8L10GW configuration file, click the "Browse" button. After finding the backup file, follow the instructions on the screen. Select the backup file and click the "Restore" button.

Page 33 of 37



3.3.5 State

| | | | mor |
|---------------------------|--------------------------------|--------------------------------------|---|
| stem | | | Router Name: |
| Router Name | Four-Faith | | This is the specific name for the router, which you set on the Setu, |
| Router Model | Four-Faith Router | | tab. |
| Firmware Version | F8L10GW CN470 v1.0 (Jul 10 201 | <u>8 17</u> :18:52) std - build 3201 | MAC Address: |
| MAC Address | 54:D0:B4:85:8F:3C | | This is the router's MAC Address, seen by your ISP. |
| Host Name | | | |
| WAN Domain Name | | | Firmware Version: This is the router's current firmwa |
| LAN Domain Name | | | |
| Current Time | Not available | | Current Time: |
| Uptime | 4 min | | server set on the Setup / Basic Set tab. |
| rial Applications | | | Uptime: |
| Status | Disabled | | This is a measure of the time the router has been "up" and running. |
| mory | | | Load Average: |
| Total Available | 125224 kB / 131072 kB | 96% | This is given as three numbers that represent the system load during |
| Free | 100536 kB / 125224 kB | 80% | last one, five, and fifteen minute periods. |
| Used | 24688 kB / 125224 kB | 20% | |
| Buffers | 2384 kB / 24688 kB | 10% | |
| Cached | 8684 kB / 24688 kB | 35% | |
| Active | 3480 kB / 24688 kB | 14% | |
| Inactive | 8980 kB / 24688 kB | 36% | |
| twork | | | |
| IP Filter Max Connections | 16384 | | |
| Active IP Connections | <u>83</u> | 1% | |

3.3.5.1 F8L10GW

| Ŀ | LoRaWAN | | | | |
|---|---------------|------------------|--|--|--|
| ĩ | | | | | |
| | Server status | connected | | | |
| | Mac | 54D0B4FFFE861886 | | | |
| | GPS status | vaild | | | |
| | Longitude | 118.047160 | | | |
| | Latitude | 24.610998 | | | |
| | Altitude | 91 | | | |
| | | | | | |

Server status: connection status to the specified LoRaWAN server.

Page 34 of 37



Mac: Mac address of F8L10GW, LoRaWAN server identification code of different

F8L10GW.

GPS status: it is GPS signal status indicator.

Longitude, dimension and altitude are obtained from GPS.

Page 35 of 37



Appendix

The following steps describe how to make F8L10GW Gateway enter configure state with the Windows XP Hyper Terminal.

- 1. Press "Start" \rightarrow "Programs" \rightarrow "Accessories" \rightarrow "Communications" \rightarrow "Hyper Terminal".
- 2. Enter the connection name and select "OK".

| Connection Description | ? 🗙 | | | |
|---|-----|--|--|--|
| New Connection | | | | |
| Enter a name and choose an icon for the connection: | | | | |
| <u>N</u> ame: | | | | |
| ff | | | | |
| lcon: | | | | |
| | Я. | | | |
| | | | | |
| OK Can | cel | | | |

3. Select the actual physical serial port of PC that is used to connect to the F8L10GW Console port, and select "OK".

| Connect To | ? 🔀 | |
|---|-------------------|--|
| | | |
| Enter details for the phone number that you want to dial: | | |
| Country/region: | United States (1) | |
| Area code: | 123 | |
| Phone number: | | |
| Connect using: | СОМ1 | |
| | OK Cancel | |

4. Configure the super terminal as shown below and select "OK".

Communication rate: 115200

Page 36 of 37





Data bit: 8

Parity check: none

Stop bit: 1

Data flow control: none

| COM1 Properties | | ? 🗙 |
|------------------|----------------|-------|
| Port Settings | | |
| | | |
| | | |
| Bits per second: | 115200 🗸 | |
| | | , |
| Data bits: | 8 🗸 | |
| Davitur | Mauri | 1 |
| Fally. | None | |
| Stop bits: | 1 🗸 | |
| | | |
| Flow control: | None 💙 | |
| | | |
| | Restore Defer | ilto |
| | L Hestole Dela | aits |
| | | |
| | | Abbia |

At this point, the super terminal is running normally.

| 🗞 ff - HyperTerminal | |
|--|---|
| File Edit View Call Transfer Help | |
| | |
| | |
| Connected 0:00:06 Auto detect Auto detect SCROLL CAPS NUM Capture Print echo | × |

If you are using win7, you can download a win7 super terminal online. Or other common serial interactive software, the use way is similar.

Page 37 of 37