

LoRa gateway setup instructions (version 2, October 2019)

BroWan IOT Femto Gateway Model name: WLRGFM-100

Step 1. Connect and login to the gateway administration area.

Connect antenna and connect wall adapter power. The USB connector only supports power, there is no communication supported via USB.

The gateway takes about 1 minute to boot up.

1.1 Open Admin GUIConnect your PC to the gateway via the WiFi network name starting with "AP-" (SSID: AP-last 6 digits of mac address)For example: "AP-457456"

This is an "Open" unsecured connection. Ignore the warnings for now, you can secure the WiFi later.

After connecting to the gateway WiFi, open your web browser and access the gateway WebUI via address "**192.168.55.1**". Default username is "**admin**" and password is "**admin**". Login with Username: admin, Password: admin

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Username	admin	
Password	1	

Only if this is a new installation, or after doing a reset to factory default settings, provide the provision code. The provision code for the USA is **880122001840**. Click "apply". The gateway will reboot.

Status		
GloT	Provision Code	
Provision	Contra will subset it estants Devicing Code surged	
Configuration	System will report it activate Provision Code succeed	
Channel Scan	Code	880122001840
Channel Setting		
GPS MAP		
System		
Network		



After reboot, connect your PC again to the gateway WiFi , and login. This will bring you to the status Overview screen

atus System Hostname Model Firmware Version Kernel Version Local Time Uptime Load Average	Femto- GIOT InDoor FemtoCell Version 3.02.35 Wed May 23 14 3.10.14 10/14/19 02:45:00 0h 6m 29s 0.74, 0.47, 0.23	.11.22 CST 2018	
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Local Time Uptime Load Average	10/14/19 02:45:00 Oh 6m 29s 0.74, 0.47, 0.23		
Uptime Load Average	0h 6m 29s 0.74, 0.47, 0.23		
Load Average	0.74, 0.47, 0.23		
Memory			
Total Available		229476 kB / 255332 kB (89%)	
Free		201208 k8 / 255332 k8 (78%)	
Cached	22316 kB / 255332 kB (8%)		
Buffered		5952 kB / 255332 kB (2%)	
Tr Fr C B	lemory tal Available ree ached uffered	Ital Available ached 22316 KB / 255332 KB (8%) ached 22316 KB / 255332 KB (8%) utffered	Itemory 229478 kB / 255332 kB (84%) tal Available 229478 kB / 255332 kB (84%) ree 201200 kB / 25532 kB (75%) ached 22316 kB / 255332 kB (8%) uffered 5052 kB / 255332 kB (2%)



Step 2 Set up Internet communication

The Gateway can be connected to the Internet in two ways:

- 1. With an Ethernet cable (blue connector in the back) that connects the gateway to your Internet router (use the WiFi connection for setup first, or find the gateway's IP addres on your Internet router)
- 2. Using WiFi Select the **Network** menu, **WAN** option, **Wireless Extender**

Set Extender mode to "enable"

Scan for available networks and select the one (SSID) you want the gateway connected with.

Note that SSID names with special characters and punctuation marks (like: Jim's network) are not supported by the gateway.

Most wireless networks have access security. Select **Security**: WPA2-PSK-AES Enter the network password for your WiFi network (**KEY**) Click **SAVE.** The gateway will save the new information and restart wireless. Refresh your screen.

IMPORANT

As the gateway acts as a WiFi network extender, you can get Internet access by connecting to the gateway WiFi. To protect access, go to the **Network** menu, **Wireless** sub-menu, **2.4G Interface Configuration**, and change **encryption** from "None" to "WPAWPPA2-PSK". Enter a password under **Key**. Click **Apply**



Step 3, Setup LoRa networking on the gateway

In the Packet Forward, Settings menu:

Select Gateway Info.

Change the server address to: **router.us.thethings.network** Change Server uplink and downlink ports to **1700**

Click Apply

Status	Gateway Info Radio 0 Radio 1		
System			
GIOT	Gateway Info		
Packet Forward	cateria) into		
Settings			
Network	Gateway ID:	800	
	Server Address:	router us thethings network	C
Logout	Server Uplink Port:	1700	(1~65535)
	Server Downlink Port:	1700	(1~65535)
	Keep Alive Interval:	10	(seconds)
	Statistics display Interval:	30	(seconds)
	Push Timeout:	100	(milliseconds)

In the Packet Forward, Settings menu: Select **Radio 0**, and change the central frequency to **904200000**

Femto-					
Status System	Gateway Info Radio 0 Radio 1				
GIoT Packet Forward	Radio 0				
Network	Status	Enable			
L09055	Central Frequency: RSSI Offset	-166	(Hz) (dBm)		
	TX Status: Channel	Enable •			
		Channel © Status: Enable +	CenterFreqOffset	-300000	(-400000-+400000)
		Channel 1 Status: Enable •	CenterFreqDflaet	-100000	(+400000-+400000)
		Channel 2 Status: Enable •	CenterFreqOffset	100000	(+400000-+400000)
		Channel 3 Status: Enable •	CenterFreqOffset	300000	(+400000-+400000)

In the Packet Forward, Settings menu:

Select **Radio 1**, and change the central frequency to **905000000**

In the Packet Forward, Settings menu:

Select Gateway Info and **copy the gateway ID**. You need this to register your gateway at TheThingsNetwork.



Step 4, Register the gateway at The Things Network

Create an account on TTN https://www.thethingsnetwork.org/

1.Login and go to Console
2.In Console - Click Gateways
3 Register gateway
check Packet forwarder
Add 0000 in front of the Gateway ID obtained from Step 3
Description, a human readable description
Frequency Plan: United States 915MHz
Router: ttn-router-us-west
Location is optional (Lat/long).

JHETHINGS CONSOLE	Applications	Gabeways Sup	oport 🔗 V
Gateways > Register			
REGISTER GATEWAY			
Gateway EUI The EUI of the gateway as read from the LoRa module			
00 00 80 00 00 00 00 00 00 00 00 00 00 0			8 bytes
Description A human-readable description of the gateway			
Fernto-			•
Frequency Plan The <u>frequency plan</u> this gateway will use			
United States 915MHz			0
Router The router this gateway will connect to. To reduce latency, pick a router th	at is in a region which is close to the location of the gateway.		
ttn-router-us-west			•
Location The exact location of you gateway. This will be used if your gateway cannot	t determine its location by itself. Set a location by clicking on the	map.	
+		lat 0.0000	00000
-	Gieno	Ing 0.0000	00000
	Valle De		9 0

With the Gateway Overview you can check if your gateway connected and working.

TEWAY OVERVIEW	0	2413
Gateway ID	eu	
Description	Fernto-	
Owner	Vinduino III. Itansfer.comership	
Status	- connected	
Frequency Plan	United States 915MHz	
Router	ttn-router-us-west	
Gateway Key	• c] basis	ε
Last Seen	20 seconds ago	
Received Messages	22	
Transmitted Messages	1	