

Use Lora shield and RPi to build a LoRaWAN gateway

by David_Dragino in raspberry-pi



Download

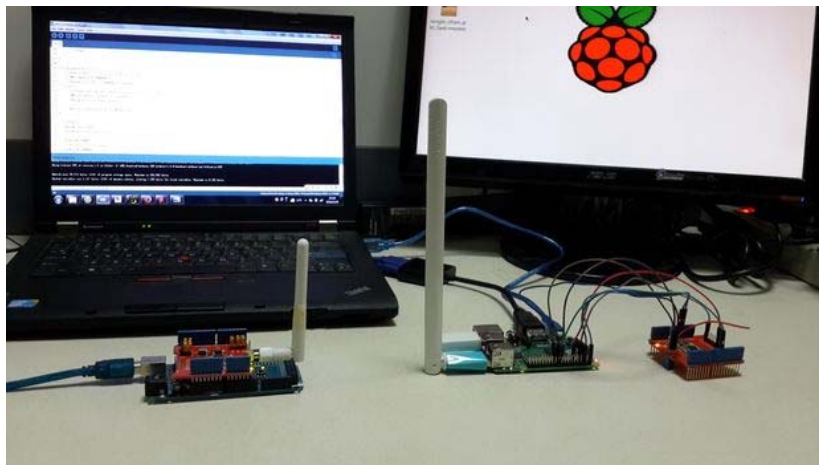
10 Steps

Collection

I Made it!

Favorite

Share



Over here, we will use the Lora Shield, MEGA2560 and Raspberry Pi to build a **single channel LoRaWAN gateway**.

LoRa Technology is a wireless modulation for long-range, low-power, low-data-rate applications. By achieving a range of more than 15 kilometers in a suburban environment and more than 2 kilometers in a dense urban environment, LoRa technology solutions target multiple application domains, such as Internet-of-Things (IoT), metering, security, and machine-to-machine (M2M).

This single channel LoRaWAN gateway is a proof-of-concept implementation, that can be used for development and node testing. It is not a replacement for a real multi channel/multi SF gateway! It supports some LoRaWAN features, but due to its static nature (single channel) it is not fully LoRaWAN compatible (and will never be).

By default it works with the TTN backend, for testing and development.

Refer to [the summary of Thomas](#)

Step 1: Hardwares

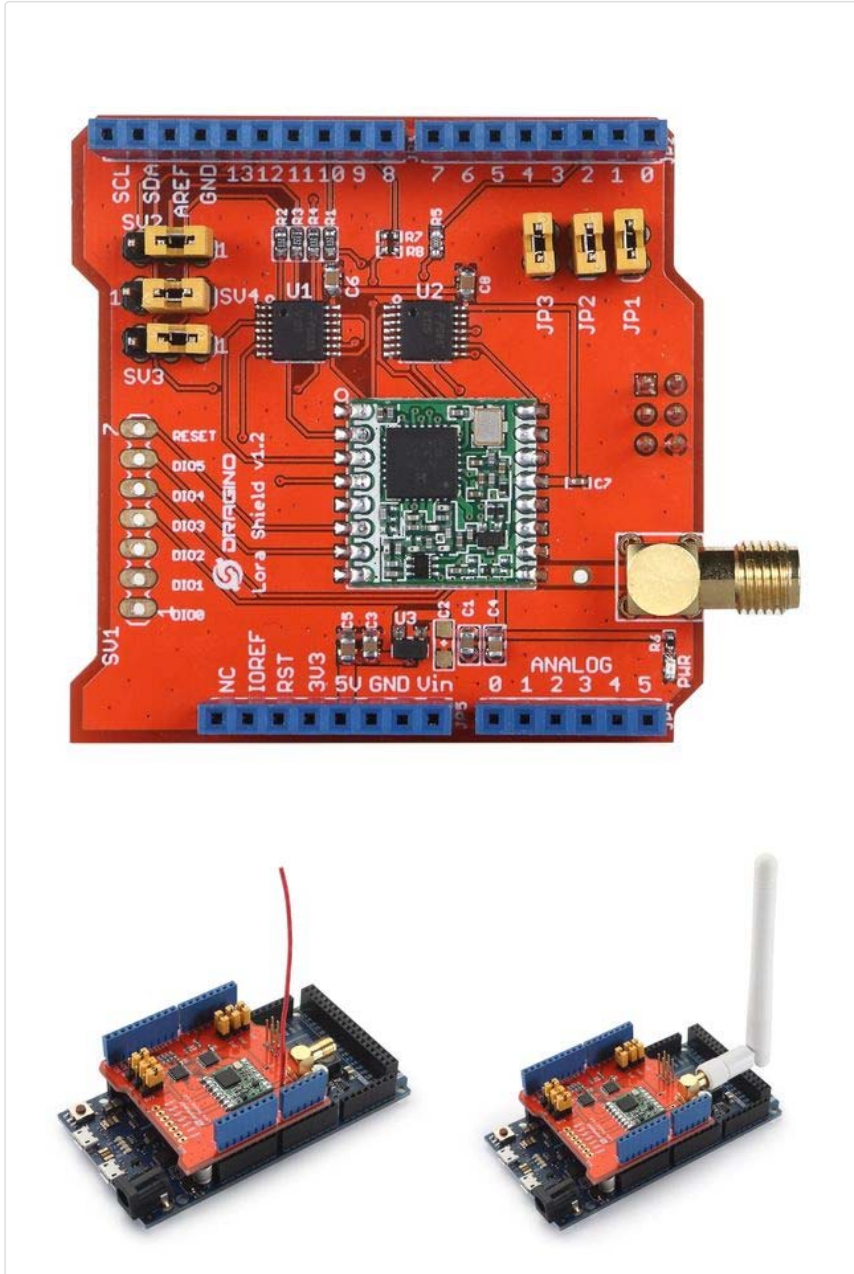


In this project, we use the things as followed list:

- [Two Lora Shields v95-868](#)
- Raspberry Pi 2 (Installed Raspbian)
- MEGA 2560

- Antennas(868MHZ)
- Computer
- Wireless network card
- Mouse and keyboard
- Dupont Lines

Step 2: A brief introduction of the Dragino Lora Shield and the ttn Network

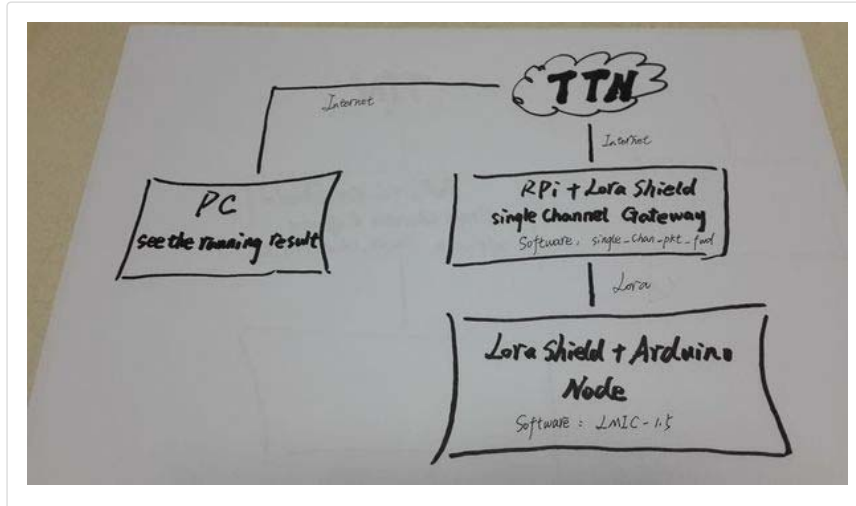


The Dragino Lora Shield is a long range transceiver on a Arduino shield form factor and based on Open source library.The Lora Shield allows the user to send data and reach extremely long ranges at low data-rates.It provides ultra-long range spread spectrum communication and high interference immunity whilst minimising current consumption.

The Lora Shield based on RFM95W/RFM98W targets professional wireless sensor network applications such as irrigation systems, smart metering, smart cities, smartphone detection, building automation, and so on. More info please click [here](#).

The TTN network is based on **LoRaWAN**,it's [a global open crowdsourced Internet of Things data network](#).We can get more information form <http://thethingsnetwork.org/>

Step 3: Network structure



The construction of this network is as the photo above.

Lora Node:

The Mega2560 will get sensor data and control the Lora Shield to send this data to the RPi Lora Gateway via Lora wireless protocol.

Lora Gateway:

The RPi Lora Gateway will receive this data and upload it to the TTN network via the Internet.

TTN Server:

The TTN Server will get the data packets from the RPi Lora Gateway and the data will be stored in the corresponding place, so users can take what they need from the Internet.

PC:

We can use the PC to get the data and check the status of this Lora Gateway network.

Step 4: Create an Account on TTN network

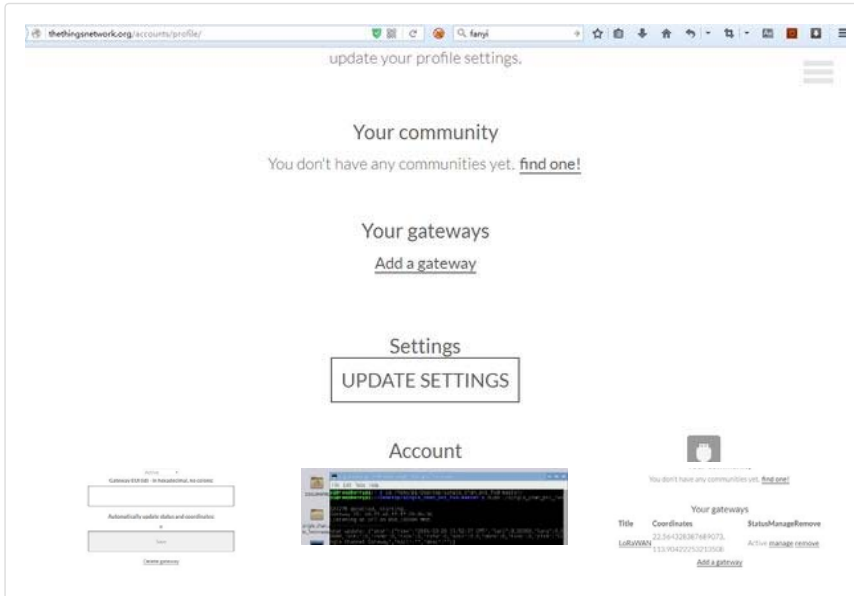


Before we start this project we must have a TTN account, we can create one at this page: <http://thethingsnetwork.org/signup/>

You have two options to create the register devices in TTN. Firstly you can use the GUI at <https://staging.thethingsnetwork.org>, which is straightforward. Secondly, you can use the commandline tool `ttncctl`. When I started documented this, only `ttncctl` was available. Basically, follow the guide from <https://www.thethingsnetwork.org/wiki/Backend/ttncctl/ttncctl>. Download `ttncctl`,

register a personalized device. The specific operation please check above website.

Step 5: Create a Gateway on TTN network



NOTE: Create your own lora gateway is not necessary, if there are TTN lora gateway around, you don't have to create your own one. in this instruction, we want to demo the full network structure so we create gateway here.

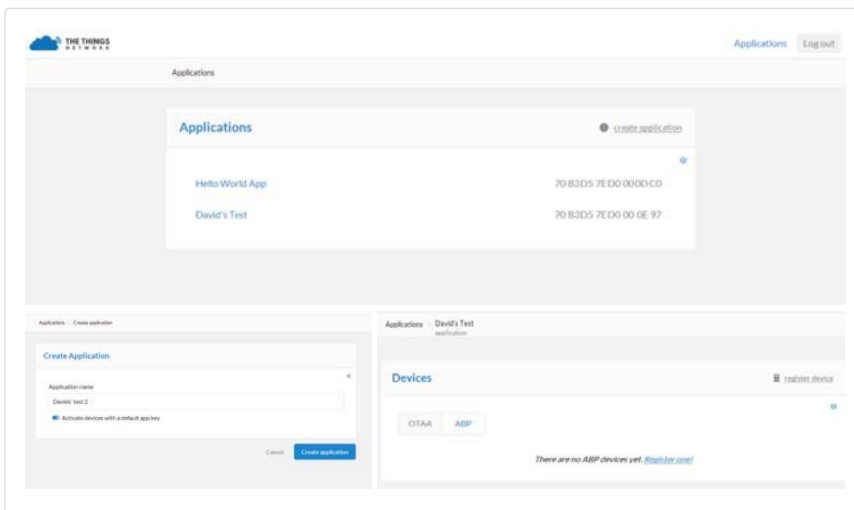
Login the TTN network by your own account and configure 'My Profile' on the web.

Click 'add a gateway' and you will enter a page to type your gateway message (such as the 3rd photo). In the next step, we will get a Gateway ID after we run the packet forward on the RPi. Then type the Gateway ID to the Gateway EUI column (In hexadecimal, no colons, uppercase letters).

We can see the running result as the 3rd picture in this step, we get a Gateway ID: **b8:27:eb:ff:ff:29:4b:3b**, so we type **B827EBFFFF294B3B** to the Gateway EUI column.

By the way, we also need to modify other settings (Select the **Status active**, type a **title** for this Gateway, delect Automatically update status and coordinates...), save it and you will see your profile such as the last picture at this step. It means we just have created a Gateway for our TTN account.

Step 6: Create an Application on the TTN network



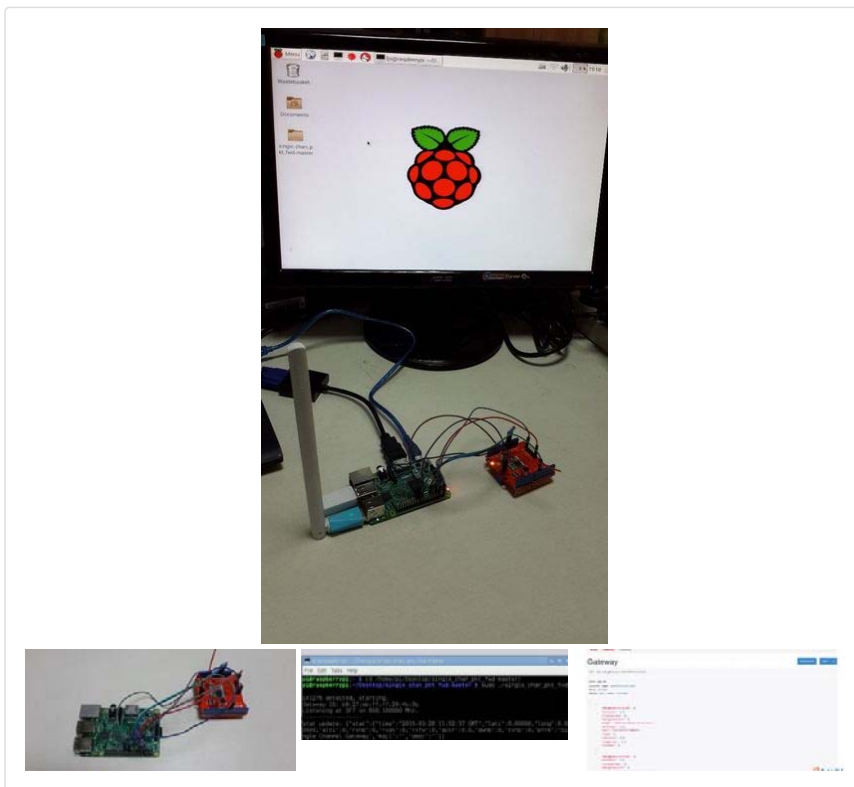


In this step, we need to create an application on the TTN network.

1. Open this website : <https://staging.thethingsnetwork.org/applications>, you will see it as the first picture.
2. Click "create application" to create your own applications and name it.
3. You will see your 'Application Info' at the new created page, App EUI....
4. Register device. In this project, we choose the ABP device type, click 'register device'—'ABP'—'Register'. (For an ABP device, you can set the App Session Key and the Network Session key. Both of these can be randomly generated (recommended).)
5. You will see the 'device info' on the new created page, such as Dev EUI, App EUI, Dev Address, NWKSKEY, APPSKEY, etc. So, you can use them at the following steps.

Back to the Application page, you will see all devices that are registered for this application are displayed on the "Devices" column. And the Messages that were sent to all devices that are part of this application

Step 7: Build a single channel LoRaWAN gateway



In this step, we will use the RPi and the Lora Shield to build a single channel LoRaWAN Gateway. We should configure the RPi and connect it with the Lora Shield. Complete the operations as following description:

Configuration

- Connect the Raspberry Pi to the Internet;
- Use 'raspi-config' to ensure that SPI can be used on RPi ;
- Use 'sudo apt-get install wiringpi' to install the GPIO access library written in C for the BCM2835 used in the Raspberry Pi;
- Get the single channel Lora Gateway source code from [here](#);
- Edit the 'main.cpp' to change configuration (look for: "Configure these

- LoRa: SF7 at 868.1 Mhz
- Server: 54.229.214.112, port 1700 (The Things Network: croft.thethings.girovito.nl)

So,we don't need too change the code here.

Connections:

The Dragino Lora Shield ----- Raspberry Pi

5V ----- 5V(pin#2)

GND ----- GND(pin#6)

(DO_A) MISO ----- MISO(pin#21)

(DI_A)MOSI ----- MOSI(pin#19)

(CLK_A)SCK ----- CLK(pin#23)

(CS_A)NSS ----- GPIO6(pin#22)

DIO0 ----- GPIO7(pin#7)

RST ----- GPIO0(pin#11)

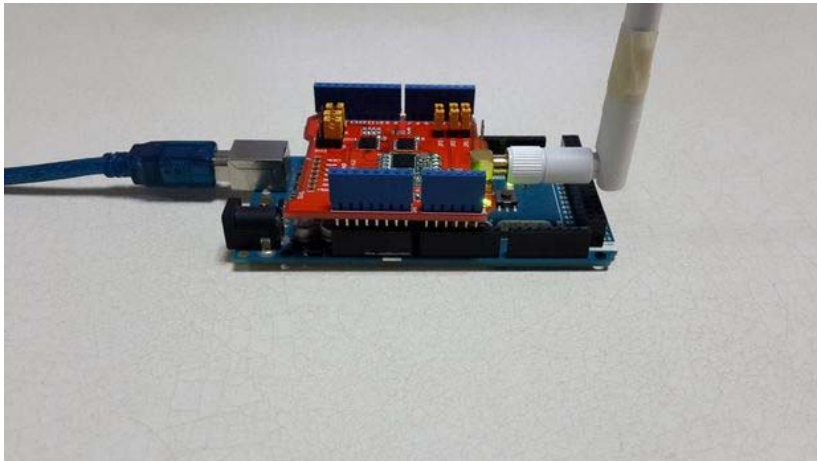
Connect the Dragino Lora Shield and the RPi as above,**run packet forwarder as root**. Then we can **get a Gateway ID** and see the running result on the RPi as the 3rd picture at this step.

We also can get the Gateway status

from <http://thethingsnetwork.org/api/v0/gateways/B827EBFFFF294B3B/> as the last photo at this step. In this URL you should change 'B827EBFFFF294B3B' to your own Gateway ID. If you can see the Gateway status on the web,it shows the LoRaWAN Gateway is working!

Note: If the packet forwarder shows the "unrecognized transceiver" message,this mean the RPi can't detect Lora Shield. in this case please further check your pin/wiring configuration.

Step 8: Connect the Lora Shield and MEGA 2560,upload the sktech



Connect the Lora Shield and MEGA 2560, and put the 868MHz antenna on it. Connect them to the computer via a USB cable.

Over here, we use the [Arduino IDE 1.6.8](#), we need to install this [Arduino-LMIC library](#). This repository contains the IBM LMIC (LoraMAC-in-C) library, slightly modified to run in the Arduino environment, allowing using the SX1272, SX1276 transceivers and compatible modules.

Note: This library requires Arduino IDE version 1.6.6 or above, since it requires C99 mode to be enabled by default.

After that, we download the ttn sketch from [this link](#).

Open and modify this sketch, change the 'DEVADDR', 'NWKSEKEY', 'APPSKEY' (You can find these device info at Step 6) on line 40th, choose the right port and right board to upload the sketch. We can see the running result on the Serial Monitor if everything is ok. (4th photo)

At the same time we can also see the corresponding results on RPi. By default, the node is sending at 10 frequencies, the gateway is receiving at only 1, hence the one packet per 10 minutes.

On a "real" gateway I see all messages (each minute), only with this Single Channel Gateway was this phenomena.

This is not a real gateway, it is for testing purposes. It is LoRaWAN compatible, but not compliant.

Refer to <http://forum.thethingsnetwork.org/t/single-channel-gateway/798/17> and <http://forum.thethingsnetwork.org/t/single-channel-gateway/798/19>

If you are using [Lora Shield v1.1 version](#), please wired as below code (such as the last photo at this step):

```
// Pin mapping  
const lmic_pinmap lmic_pins = {  
  .nss = 10, // Connected to pin D10  
  .rxtx = LMIC_UNUSED_PIN, // For placeholder only, Do not connected on RFM92/RF  
M95  
  .rst = 9, // Needed on RFM92/RFM95? (probably not)  
  .dio = {2, 6, 7}, // Specify pin numbers for DIO0, 1, 2  
  // connected to D2, D6, D7  
};
```

Step 9: Conclusion

Applications > Hello World App
application

Messages clear log

dev EUI	payload	time	frame	RSSI	frequency
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:43:34	75	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:40:16	72	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:36:59	69	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:33:41	66	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:30:22	63	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:27:03	60	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:23:43	57	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	12:20:27	54	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	11:53:52	30	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	11:50:35	27	-42	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	11:47:17	24	-43	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	11:43:58	21	-42	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	11:40:41	18	-42	868.10000
00 00 00 00 27 DF A3 84	48 65 6C 6C 6F 2C 20 77 6F 72 6C 64 21	10:54:00	8	-44	868.10000

Above all completed,open your Application page,you will see the result as above picture.

The Lora Shield for RPi will coming soon,For more info about Lora Shield, please refer:http://wiki.dragino.com/index.php?title=Lora_Shield or contact us at info@dragino.com

By the way,we can get this Lora Shield from<http://www.aliexpress.com/store/all-wholesale-products/1390863.html>

Step 10: Reference:

Lora Shield Product Page: http://wiki.dragino.com/index.php?title=Lora_Shield

Lora Shield Hardware source: <https://github.com/dragino/Lora>

TTN Network

Wiki: <http://thethingsnetwork.org/wiki/Hardware/OverviewGateways#do-it-yourself>

TTN Network forum:<http://forum.thethingsnetwork.org/>

Single channel gateway packet forward source code:https://github.com/tftelkamp/single_chan_pkt_fwd

Arduino-LMIC library:<https://github.com/matthijskooijman/arduino-lmic>

Sketch

lora_shield_ttn:https://github.com/dragino/Lora/blob/master/Lora%20Shield/Examples/lora_shield_ttn/lora_shield_ttn.ino

be
nice

We have a be nice comment policy. Please be positive and constructive.

I Made it!

Add Images

Post Comment



David_Dragino (author)

5 months ago

Reply

Hi,all,

In this project, you can see how to "Use Lora Shield + Arduino set up a Lora Node", You can also get how to "Use Lora/GPS HAT + RaspberryPi to set up a Lora Node" as below:



David_Dragino (author) David_Dragino

5 months ago

Reply

http://wiki.dragino.com/index.php?title=Lora/GPS_HAT#Use_Lora.2FGPS_HAT_.2B_RaspberryPi_to_set_up_a_Lora_Node



Hao-TienC

9 days ago

Reply

Hi David,

is there any source code in C for the GPS module? I am trying to integrate GPS and LoRa module together thanks



David_Dragino (author) Hao-TienC

8 days ago

Reply

http://wiki.dragino.com/index.php?title=Lora/GPS_HAT#Example2_-_Getting_GPS_to_work_on_a_Raspberry_Pi Have you check this link?



Hao-TienC David_Dragino

7 days ago

Reply

I'll check it out thanks



Hao-TienC

11 days ago

Reply

Hi, I am trying to use GPS HAT and RPi to join network with OTAA, any sample code for OTAA?? thanks.



David_Dragino (author) Hao-TienC

8 days ago

Reply

Hi,guys,you can find the examples here:<https://github.com/matthijskooijman/arduino-lmic/tree/master/examples>



Hao-TienC David_Dragino

7 days ago

Reply

thanks!



ayudatama

13 days ago

Reply

Hi David,

I just ordered my first three LoRa shield from Dragino (2 for RPi and 1 for Arduino). Before I start the project I just want to ask is it possible that I have 2 nodes sending sensor data (1 RPi + 1 Arduino) to 1 gateway (RPi) and then send the data to the internet (MQTT possibly). I ask this question because you mentioned in this tutorial that this is to develop single channel LoRaWAN gateway.

Sorry, I'm totally newbie with this LoRa things.

Thanks in advance :)



David_Dragino (author) ayudatama

8 days ago

Reply

Yes,you can do it as what you said.



Stephen LEE

11 days ago

Reply

It look nice!!



minostroza1 made it!

20 days ago

Reply

David

I'm having problems with the TTN web. When I enter to "my profile" isn't the option to add a new gateway, it just say "claim a gateway", as the picture

On another hand, I found the console link on TTN
(<https://console.thethingsnetwork.org/gateways>) where I can add gateways and apps but some features are different, I don't know if it will work with simple gateway software. It doesn't work for me, but I could have another problem.

Could you help me?

Thanks!



David_Dragino (author) [minostroza1](#)

20 days ago

[Reply](#)

Copy that, and I will update this instruction after my vacation



minostroza1

a month ago

[Reply](#)

Hi! I'm working with the libellium sx1272 and a cooking hacks shield to connect it with the raspi. I'm having Unrecognizer transceiver problems ¿any suggestion?

Thanks!



David_Dragino (author) [minostroza1](#)

22 days ago

[Reply](#)

Uhm, sorry to reply so late, how is it going? Did you check your wiring?



minostroza1 [minostroza1](#)

a month ago

[Reply](#)

I had to change the pins for the following:

```
ssPin=10;
```

```
dio0=0;
```

```
RST=7;
```

I have to do more tests, but for now it works



David_Dragino (author) [minostroza1](#)

a month ago

[Reply](#)

Ok, too busy these days, good luck!



13128652

a month ago

[Reply](#)

Hi David, I am doing a final year project similar to this but using LoRa gateway and waspmote. I am trying to use cutecom to configure the gateway but not receiving any information packet in response to the READ command. any help ??



David_Dragino (author) [13128652](#)

22 days ago

[Reply](#)

Hi, have you finished it? And I need more details about your project



FelixKunz

a month ago

[Reply](#)

Hey, is it possible to run the "Single channel gateway packet forward source" automatic at start?



David_Dragino (author) [FelixKunz](#)

22 days ago

[Reply](#)



mellbratt

6 months ago

Reply

To make the "unrecognized transceiver" errors go away I had to change

```
bool sx1272 = true;
```

to

```
bool sx1272 = false;
```

in main.cpp



minostroza1 mellbratt

a month ago

Reply

where is that ?



David_Dragino (author) minostroza1

a month ago

Reply

In the folder single_chan_paket_fwd,there is a file called main.cpp



JesseW78

a month ago

Reply

Hi, David.

I have bought 2 lora shields. I'm a newbie for network thing, want to know that is it possible to make the multiple Lora shields to communicate/send the data to one specific Lora shield through the method introduced as above. (build a LoraWan gateway) And what if my case is without using any internet, is it any other methods to achieve it?



David_Dragino (author) JesseW78

a month ago

Reply

Hi JesseW78,as what you said,you can do that,bu it's not "LoRaWan" anymore,and you can use the Radiohead.Uhm,tell me you email and I'll send you the sketches,david@dragino.com,hope it help~



JesseW78 David_Dragino

a month ago

Reply

ok, my email-

jchening@gmail.com



plusmartin

a month ago

Reply

Hi, there is an error when checking <https://www.thethingsnetwork.org/api/v0/gateways/B...>

using my own ID I get:

```
"error": "Cannot connect to database!"
```

what is wrong?

also, how can I use the lora antennas to transmit from my arduino (shield) to my rpi (hat) without all the hassle of TTN and encryption etc? They are making me run before I walk.

Thank you very much for you help



mshaz

a month ago

Reply

I am new to this , my question is what does it mean by single channel gateway?



SimonR59

7 months ago

Reply

I've a problem with my gateway:

I can see that the Gateway receives packages at the terminal of the RPI, but I can't see the messages at the TTN dashboard.

As a node I use a RN2483



In the Arduino sketch with OTAA you need to setup APPEUI and DEVUI with LSB (less significant bit first), but APPKEY with MSB (more significant bit first). In the example skecth for OTAA the comments says that it doesn't matter if APPKEY if LSB or MSB, but it does, you must set it up with MSB!
And regarding DevEUI, I found that it depends on the Lora transmitter: t RFM95W cannot give a unique DEVEUI so it's ok to use a random one.

3 months ago [Reply](#)



DezeA [David_Dragino](#)

3 months ago [Reply](#)

Could you send me some example code, I tried to set it up with The Things Network library and the tutorial of TTN also with OTAA (<https://www.thethingsnetwork.org/docs/current/arduino/#activate>) but it just doesn't work. Neither with ABP



David_Dragino (author) [DezeA](#)

2 months ago [Reply](#)

Hi,did you make it? If no, please give me your e-mail,so sorry to reply so late.



YoungS6

3 months ago [Reply](#)

Hi,
I've connected my shield with my RPi like said in the instructable but it's not running. The code is asking for SSPIN pinout, which port is that?



David_Dragino (author) [YoungS6](#)

3 months ago [Reply](#)

Hi, You can get the info here:http://wiki.dragino.com/index.php?title=Lora/GPS_HAT#Wiring



index23

4 months ago [Reply](#)

Is this product applicable for Lora Shields v95-868,
<https://www.aliexpress.com/item/Long-distance-wireless-433-868-915Mhz-Lora-Shield-for-Arduino-Leonardo-UNO-Mega2560-Duemilanove-Due/32684723912.html>
spm=2114.01010208.3.2.2vuK46&ws_ab_test=searchweb0_0,searchweb201602_5_10056_10065_10055_10068_10054_10069_b83c-47f-bc6a-a15553134019



David_Dragino (author) [index23](#)

3 months ago [Reply](#)

Yes,you can use the Dragino Lora Shield v1.3 at this project.



Hao-TienC

4 months ago [Reply](#)

Hi I am using LoRa/GPS HAT for RPi, is there any information to connect this device to LoRa network via OTAA??

I am so confused about getting DevAddrhow can I get it??



David_Dragino (author) [Hao-TienC](#)

4 months ago [Reply](#)

Hi,sorry to reply so late,you can do as this link:
<https://www.thethingsnetwork.org/wiki/Backend/ttnctl/ttnctl>



Hao-TienC [David_Dragino](#)

4 months ago [Reply](#)

I mean usually we can find DEVEUI which is from the manufacturer on devices but I couldn't find any information on Dragino LoRa/GPS HAT.....where can I find it? thanks for answering



Uhm,we just need the DEVEUI and DEVADDR when 4 months ago

Reply

we build the LoRaWAN,and you can click [this link](#) about how to get the DEVEUI and DEVADDR when you need to post your data to the ttn server.In this project,we just need the DEVEUI APIkey and DEVADDR on the nodes' side,if you still confused by this problem,please contact me by david@dragino.com or support@dragino.com



SteveR159

6 months ago

Reply

Hi, firstly thanks to Dragino for building a great low cost LoraWAN board. I am following the instructions using an Arduino UNO as a node for the TTN. I have replicated the screen shot where it says

Packet queued

332117: EV_TXCOMPLETE (includes waiting for RX windows

However no data is appearing on the TTN dashboard. Any help or guidance would be appreciated please, in particular I am unclear what to set this line to

static const u4_t DEVADDR

I have tried to set this to be the Dev Address in the dashboard but that didn't work. I wonder if I should be using OTAA but can't see how to set that up.

Thanks in advance

Steve



SteveR159

SteveR159

6 months ago

Reply

Ok, got it working. The devaddr turns out to be 0x concatenated with the DEV address so in my case its 0xD7718C0D. Simple really



Hao-TienC

SteveR159

4 months ago

Reply

Can you please tell me how to get the DEVADDR I am really confused.....thanks



David_Dragino (author)

SteveR159

6 months ago

Reply

Yeah,I am glad to hear that from you,if you have any other problem with our products,we can discuss it by email.

Cheers!

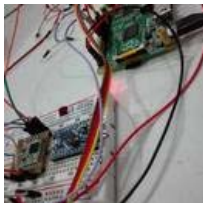


sabas1080 made it!

4 months ago

Reply

Thanks, work with the fork https://github.com/hallard/single_chan_pkt_fwd



PrakashS45

5 months ago

Reply

Hi David. It is a nice tutorial. However, you have been used "LoRaWAN Gateway" in many places in this tutorial including tutorial topic. This confused the actual implementation of Single Channal "LoRa Gateway". Can you please confirm?.

TIA,

Prakash



David_Dragino (author)

PrakashS45

5 months ago

Reply

It's a single channel LoRaWAN gateway here, sorry to confused you.

David



gma507

6 months ago

Reply

Hi David

I bought 2 Dragino LoRa/GPS HATs for getting familiar with lora and TTN. Goal is to use a raspberry pi with the Lora/GPS hat as node at later stage. As I currently have no real GW, I use one RPI+Hat as single single_chan_pkt_fwd following your instructions - I got this working. The 2nd RPI+Hat I planned to setup as node using lmic (as you use it in conjunction with arduino, I intended to use a pi adapted version from github.com/ernstdevreede/lmic_pi. Unfortunately experiencing some issues: it seems that for init + transmitting dio0, dio1 and dio2 are used while according schematic dio0 is mapped to RPI pin7 but I could not find any references for dio1 and dio2 (on the arduino shield they are mapped to arduino pin2=dio0 pin6=dio1 pin7=dio2) as I understood dio0+1 are used for LoRa mode and dio0+1+2 for FSK. How do you make use of these functions on the Lora/GPS Hat? Also an additional question for the GPS, also thanks to your instructions, it was strait forward to get the GPS working on RPI3. In the specs PPS is available, which would be nice to use in conjunction with NTP. Would be great to get it working and if you can give me some hints on these topics as I like the HW pretty much.

Thanks Marcel



David_Dragino (author) [gma507](#)

6 months ago

Reply

Hi, gma507,

I am so sorry to reply you so late, too busy these days, you can find the pins DIO1, DIO2 near the GPS module, as you can see, the connections of

https://github.com/ernstdevreede/lmic_pi

is as below:

So you need to use the jumper wire to connect

by yourself.

If there is any other question or suggestion, you can contact me by david@dragino.com

Best Wishes

David Guo



gma507 [David_Dragino](#)

5 months ago

Reply

Hi David

I am very sorry for not responding, after my annual leave some personal issues kept me away from this project. Finally tonight started to catch up again and saw your reply as well the new instructions on dragino wiki page.

Thanks a lot for taking this up and within the next week or so I will try to get it running according your instructions.

Apologies for the delay and many thanks for your instructions and assistance

best regards

Marcel



David_Dragino (author) [gma507](#)

5 months ago

Reply

Hi, Marcel,

I have used 2 Lora/GPS HAT to complete the lmic project, I have updated it to the wiki, you can find it [here](#).

Hope it help.



FelixKunz

6 months ago

Reply

what happend to the
"https://github.com/dragino/Lora/blob/master/Examples/lora_shield_ttn/lora_shield_ttn.ino"
link? I get an error 404. can someone reupload the script or something



David_Dragino (author) FelixKunz

6 months ago

Reply

Hi,guys,

I have put the new link there,you can also get the sketch here:

https://github.com/dragino/Lora/blob/master/Lora%20Shield/Examples/lora_shield_ttn/lora_shield_ttn.ino



FelixKunz David_Dragino

6 months ago

Reply

I compiled the Script, but nothing happend and i got an error:

"Sketch uses 29,046 bytes (11%) of program storage space. Maximum is 253,952 bytes.

Global variables use 1,111 bytes (13%) of dynamic memory, leaving 7,081 bytes for local variables. Maximum is 8,192 bytes.

avrdude: stk500v2_ReceiveMessage(): timeout

avrdude: stk500v2_ReceiveMessage(): timeout

avrdude: stk500v2_ReceiveMessage(): timeout

avrdude: stk500v2_ReceiveMessage(): timeout

avrdude: stk500v2_ReceiveMessage(): timeout

avrdude: stk500v2_ReceiveMessage(): timeout

avrdude: stk500v2_getsync(): timeout communicating with programmer"



David_Dragino (author) FelixKunz

6 months ago

Reply

Have you check your wiring?



xneo1

6 months ago

Reply

I have a Lorank8 as TTN gateway and an arduino uno clone(ch340) with a Dragino Lora EU version on top. I can see the static test on dashboard but when I attach a DHT22 sensor on Dragino I cannot read data. When I remove the Dragino shield I can see the data from the sensor. Has anyone have an arduino sketch that uses sending sensor data from dragino shield??? I have the v1. 2 version, thanks



David_Dragino (author) xneo1

6 months ago

Reply

Hi,xneo1,

<http://www.instructables.com/id/How-to-Get-Sensor-Data-From-a-Remote-Arduino-Via-W/> , is it help?

I think you should check the pin_set of my board,you cam get the hardware info

here:<https://github.com/dragino/Lora/tree/master/Lora%20Shield> , if there is any other problem,contact us by support@dragino.com

Cheers!



JoschaF

7 months ago

Reply

Has anyone built the gateway with a 1.3 version of the Dragino shield?



kayakpete JoschaF

7 months ago

Reply

I tried and failed. Still working on it



JoschaF kayakpete

7 months ago

Reply

O, I forgot to report back, I got it working:
<https://github.com/thesolarnomad/resin-ttn-gateway>



David_Dragino (author) JoschaF

7 months ago

Reply

Good job!



kayakpete David_Dragino

7 months ago

Reply

I think my gateway is working fine, but my node is not. I think it has to do with the code for USA frequencies.



David_Dragino (author) kayakpete

7 months ago

Reply

Hi Pete, I am trying to reproduce your problem now.



rsabedra

7 months ago

Reply

Great project,
I just didn't understand why it is only single channel.

Just because of the hardware, what should I buy to create a complete LoRaWAN environment?



David_Dragino (author) rsabedra

7 months ago

Reply

Hi, Rsabedra, you can get more info from
[<http://forum.thethingsnetwork.org/>]



JoschaF made it!

8 months ago

Reply

I created a resin.io based version of the gateway. You can find the code here:
<https://github.com/thesolarnomad/resin-ttn-gateway>



boelectric

9 months ago

Reply

I am putting everything together now, but the pin layout of the Raspberry doesn't match with your list. GPIO6 is pin#22 on the Pi, Pin#7 on the Pi corresponds with GPIO4 (not GPIO7) and on pin#11 of the Pi we find GPIO17 (Not GPIO0).

Now I am not quite sure how to connect everything...



boelectric boelectric

9 months ago

Reply

Update: I stuck with the pin numbers and ignored the names, and that worked.



David_Dragino (author) boelectric

9 months ago

Reply

I am sorry to reply so late, could you tell me the RPi version and system type



No problem. :) I used the RPi 2B, with Raspbian. I got it working, but stucked with just the pin numbers. (PIN#7, PIN11 etc.) The pin functions you mention (GPIO7, GPIO0, etc.) just don't march.



FelixKunz 9 months ago [Reply](#)
Why do you have single_chan_pkt_fwd-master? I have only single_chan_pkt_fwd and how do i Run the Packet Forwarder?



David_Dragino (author) **FelixKunz** 9 months ago [Reply](#)
Unpack the tarball, and you should make it



FelixKunz **David_Dragino** 9 months ago [Reply](#)
thanks for the fast answer, i have now the master but how can i run this like you did it in picture 3? sudo ./single_chan_pkt_fwd.git and then what?



David_Dragino (author) **FelixKunz** 9 months ago [Reply](#)
just use "cd" command as the 1st line of the picture 3, enter the folder where the packet forwarder is, run it as root



FelixKunz **David_Dragino** 9 months ago [Reply](#)
I have done this and edited the main.cpp but in the folder i have got from github are only base64.c, base64.h, LICENSE, main.cpp, Makefile and Readme.md. Which of these is the packet forwarder i have to run?



David_Dragino (author) **FelixKunz** 9 months ago [Reply](#)
I am sorry to reply so late, did solve it?



WonderWomen 10 months ago [Reply](#)
Is so cool, I just start to build my own toy using raspberry Pi and other Hardware and I love it. <http://thesmarttoy.com/> all hardware I use.



manuka 10 months ago [Reply](#)
For LoRa™ insights, & simple PICAXE driven setups, see => <http://www.instructables.com/id/Introducing-LoRa-/>



David_Dragino (author) **manuka** 10 months ago [Reply](#)
It seems cool, I'll go and see it!



MarekD2 10 months ago [Reply](#)
Where i can buy these shields ?



David_Dragino (author) **MarekD2** 10 months ago [Reply](#)
Hi, MarekD2,
You can get the Dragino Lora Shield from [this link](#)



webcompanion 10 months ago [Reply](#)
You can pickup a custom version of the Arduino Mega that has the LoRa

