LMDS200 -- LoRaWAN Microwave Radar Distance Sensor User Manual

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on 2024/03/07 08:41

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1. Introduction

1.1 What is LMDS200 Microwave Radar DistanceSensor

The Dragino LMDS200 is a **LoRaWAN Microwave Radar distance sensor**. It uses **24Ghz Microwave** to detect the distance between sensor and different objects. Compare vs ultrasonic or Lidar measurement method,

Microwave Radar is **more reliable for condensation / dusty environment**. It can sense correct distance even there is water or thick dust on top of the sensor.

The LMDS200 can be applied to scenarios such as horizontal distance measurement, parking management system, object proximity and presence detection, intelligent trash can management system, robot obstacle avoidance, automatic control, sewer, etc.

LMDS200 can **measure two distances**: the closest object and next object behind the closest one.

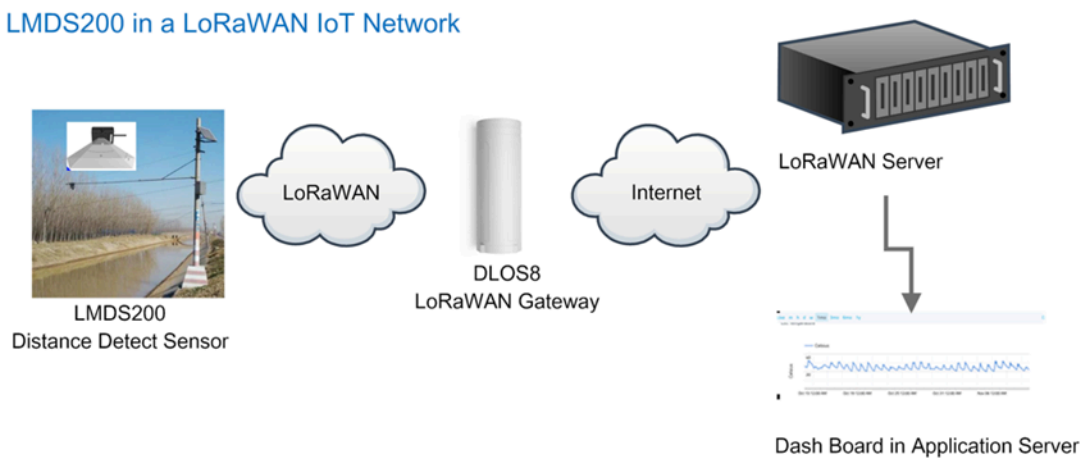
LMDS200 supports **Alarm Feature**, user can set the LMDS200 to uplink data in a short interval when the distance is out of configured range.

The LoRa wireless technology used in LMDS200 allows device 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 minimizing current consumption.

LMDS200 is powered by 8500mAh Li-SOCI2 battery, it is designed for long term use up to 5 years.

Each LMDS200 is pre-load with a set of unique keys for LoRaWAN registrations, register these keys to local LoRaWAN server and it will auto connect after power on.

*Battery life depends on how often to send data, please see battery analyzer.



1.2 Features

- LoRaWAN 1.0.3 Class A
- Ultra-low power consumption
- Microwave Radar for distance detection
- Short uplink interval for Distance Alarm
- Monitor Battery Level
- Bands: CN470/EU433/KR920/US915/EU868/AS923/AU915/IN865
- AT Commands to change parameters
- Uplink on periodically
- Downlink to change configure
- 8500mAh Battery for long term use
- Wall Mountable
- Outdoor Use

1.3 Radar probe specification

- Measuring Method: FMCW
- Frequency: 24.000 ~ 24.500 GHz

- Measurement output power: 6dBm
- Measure range: 0.5 ~ 20m
- Accuracy: ±0.1m
- Resolution: 0.01m
- Horizontal Angel: 78°
- Vertical Angel: 23°

1.4 Storage & Operation Temperature

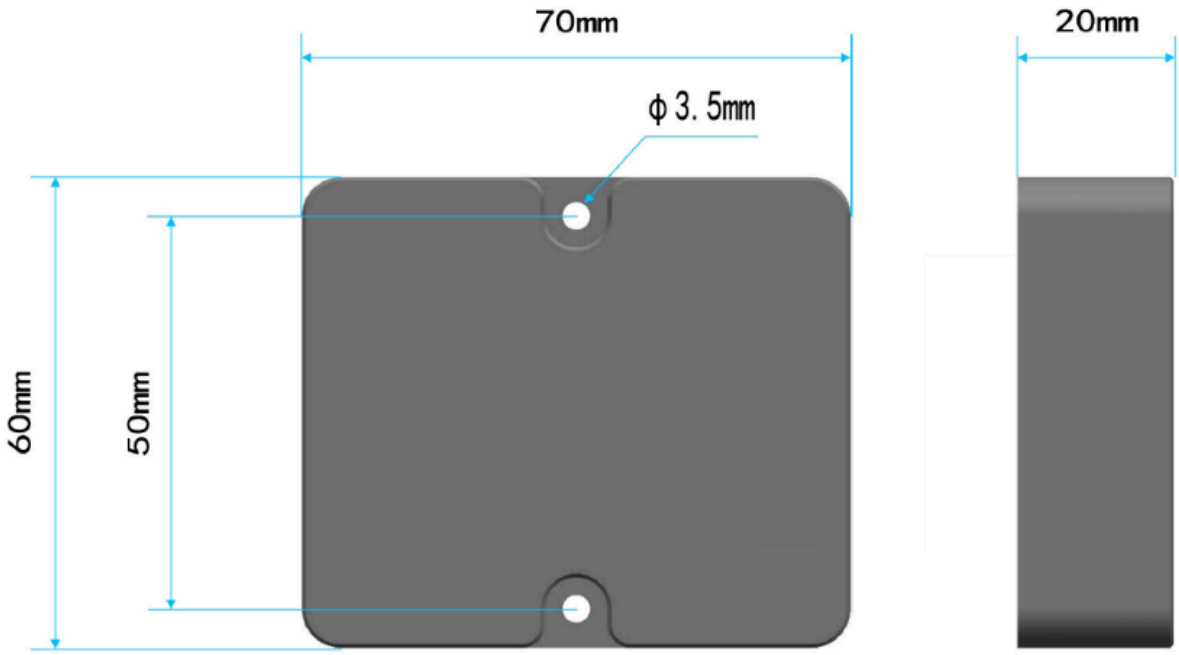
-20°C to +85°C

1.5 Applications

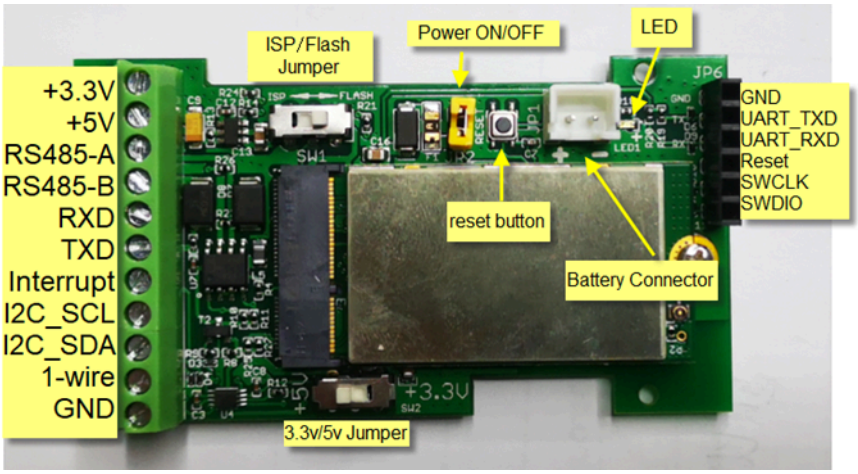
- Horizontal distance measurement
- Liquid level measurement
- Parking management system
- Object proximity and presence detection
- Intelligent trash can management system
- Robot obstacle avoidance
- Automatic control
- Sewer
- Bottom water level monitoring

1.6 Installation

Sensor measure direction and angle is as below. When install the sensor, please make sure the sensor direct to object.



1.7 Pin mapping and power on



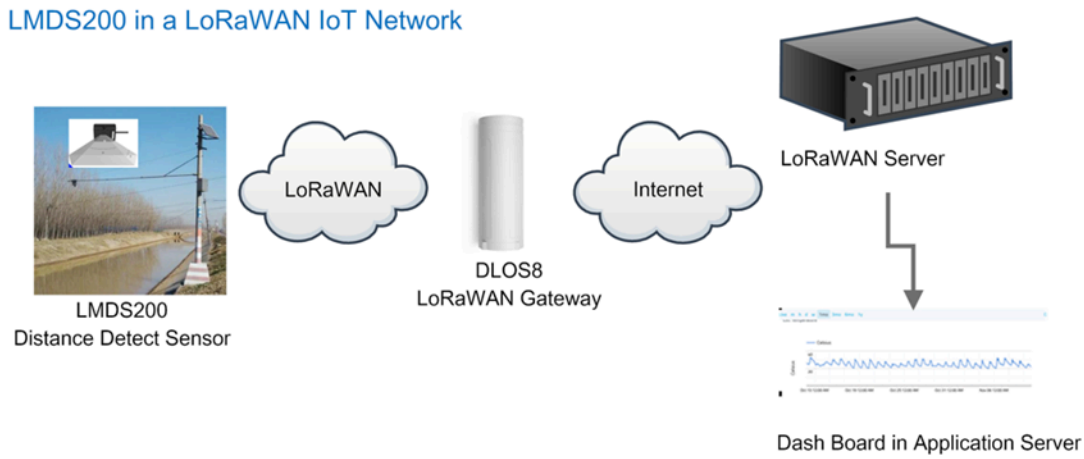
2. Operation Mode

2.1 How it works

Each LMDS200 is shipped with a worldwide unique set of OTAA keys. To use LMDS200 in a LoRaWAN network, user needs to input the OTAA keys in the LoRaWAN network server. So LMDS200 can join the LoRaWAN network and start to transmit sensor data.

2.2 Example to use for LoRaWAN network

Following is an example for how to join the TTN v3 LoRaWAN Network. Below is the network structure; we use the DLOS8 as a LoRaWAN gateway in this example.

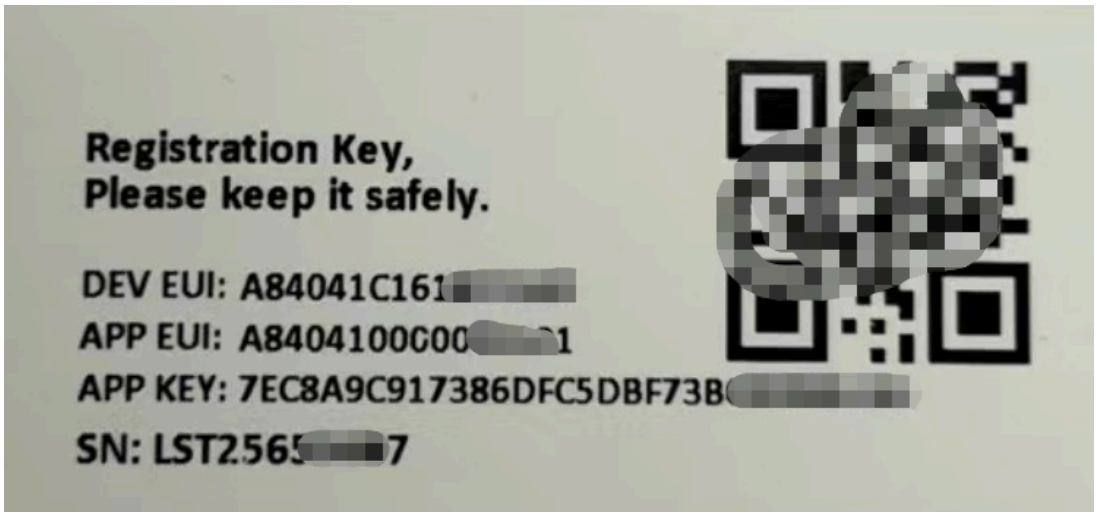


- In this user case, the LMDS200 is installed on top of river to detect the water level and send the level info to the LoRaWAN server. The LMDS200 will uplink different types of messages to the LoRaWAN server. See Uplink payload for detail.

Assume the LoRaWAN Gateway DLOS8 is already set to connect to the TTN V3 network . We need to add the LMDS200 device in TTN V3:

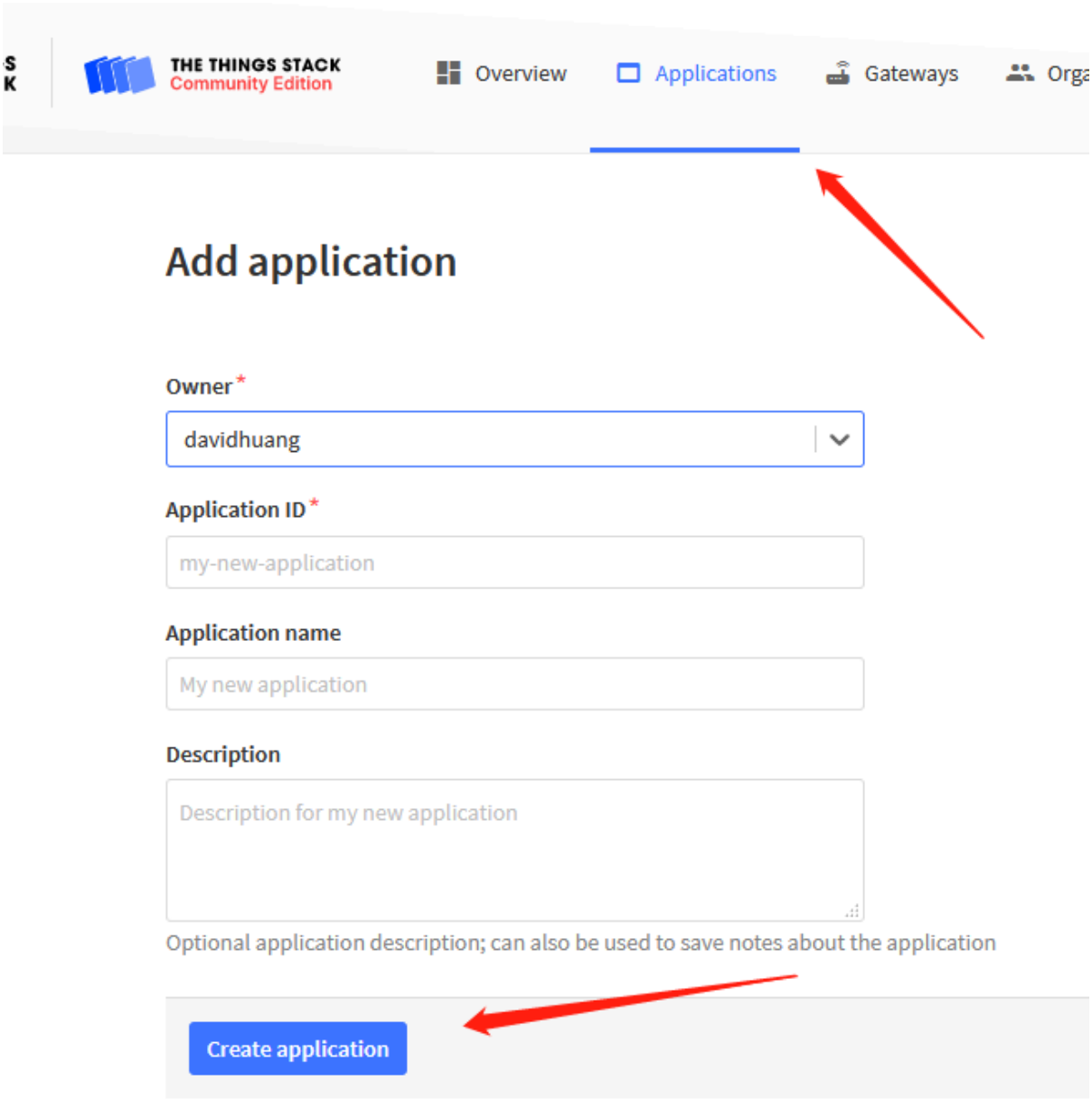
Step 1: Create a device in TTN with the OTAA keys from LMDS200.

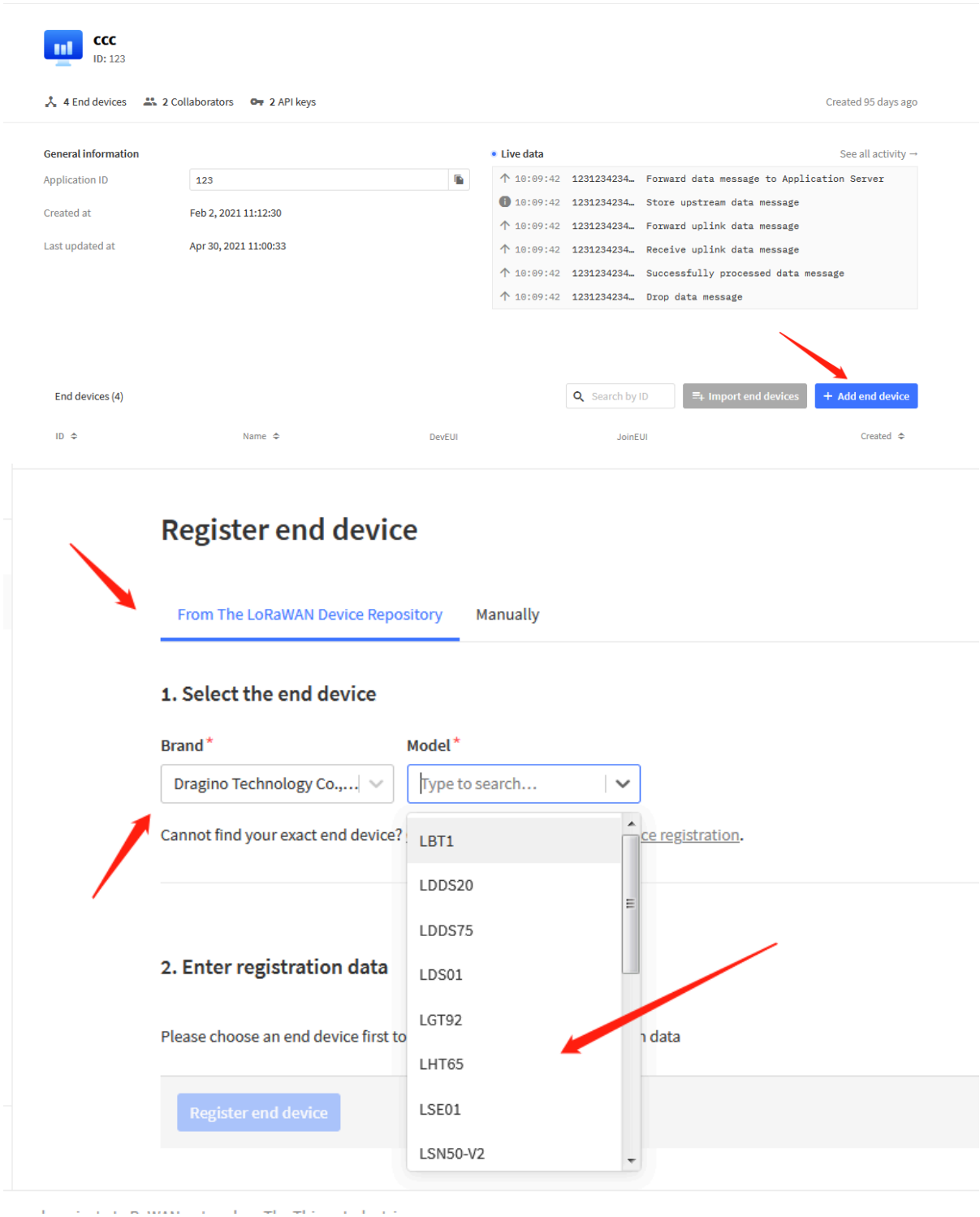
Each LMDS200 is shipped with a sticker with the default device keys, user can find this sticker in the box. it looks like below.

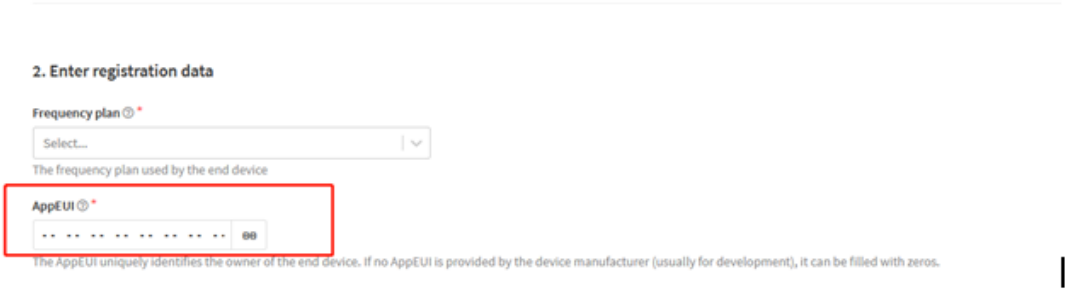


Users can enter these keys in the LoRaWAN Server portal. Below is the TTN V3 screenshot:

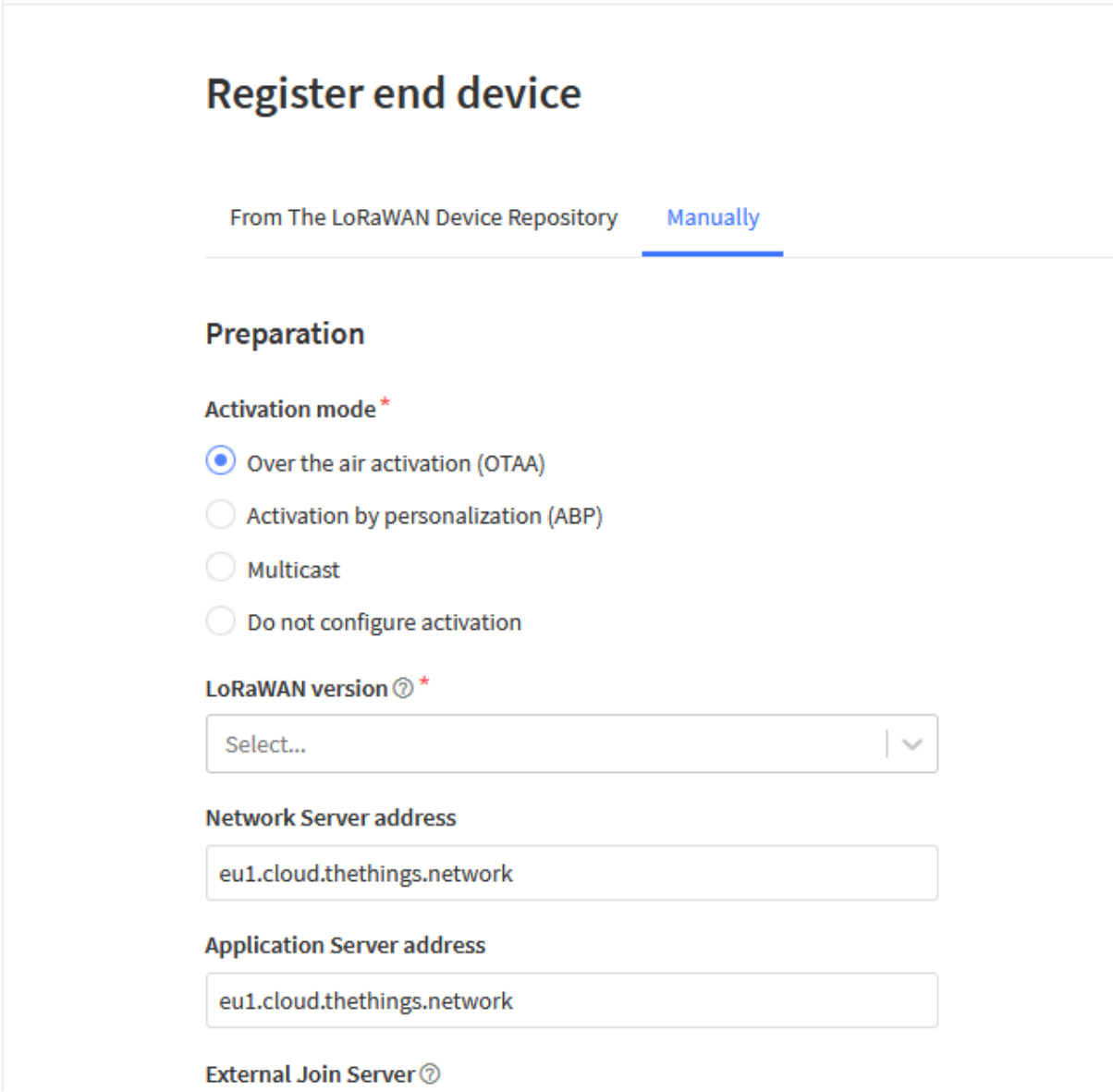
Add APP EUI in the application.




ccc
ID: 123
4 End devices
2 Collaborators
2 API keys
Created 95 days ago
General information
Application ID
123
Created at
Feb 2, 2021 11:12:30
Last updated at
Apr 30, 2021 11:00:33
Live data
See all activity →
10:09:42 1231234234… Forward data message to Application Server
10:09:42 1231234234… Store upstream data message
10:09:42 1231234234… Forward uplink data message
10:09:42 1231234234… Receive uplink data message
10:09:42 1231234234… Successfully processed data message
10:09:42 1231234234… Drop data message
End devices (4)
Search by ID
Import end devices
+ Add end device
ID
Name
DevEUI
JoinEUI
Created
Register end device
From The LoRaWAN Device Repository
Manually
1. Select the end device
Brand *
Dragino Technology Co.,...
Model *
Type to search...
Cannot find your exact end device?
ce registration.
LBT1
LDDS20
LDDS75
LDS01
LGT92
LHT65
LSE01
LSN50-V2
2. Enter registration data
Please choose an end device first to
data
Register end device



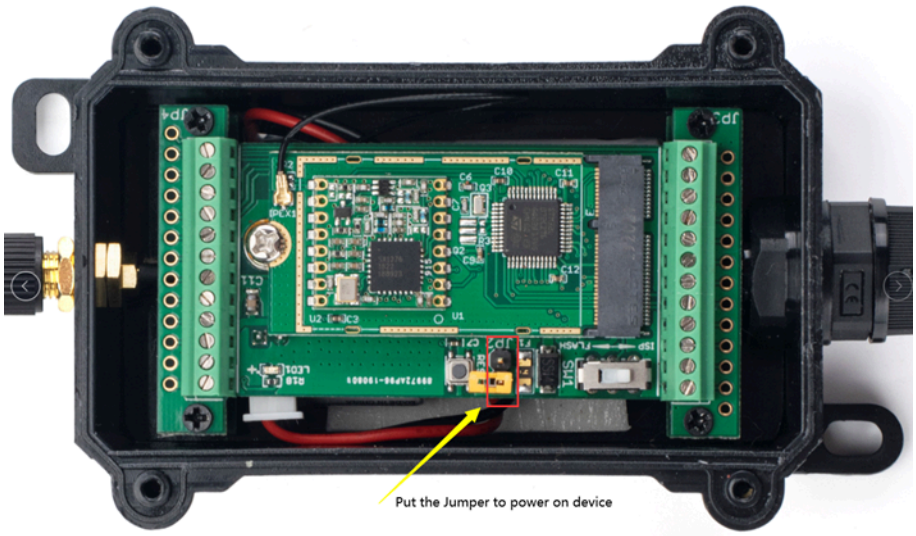
You can also choose to create the device manually.



Add APP KEY and DEV EUI

Step 2: Power on LMDS200

Put a Jumper on JP2 to power on the device. (The Switch must be in FLASH position).



Put the jumper to power on LMDS200 and it will auto-join to the TTN V3 network. After join success, it will start to upload sensor data to TTN V3 and the user can see it in the panel.

2.3 Uplink Payload

Uplink payloads have two types:

- Distance Value: Use FPORT=2
- Other control commands: Use other FPORT fields.

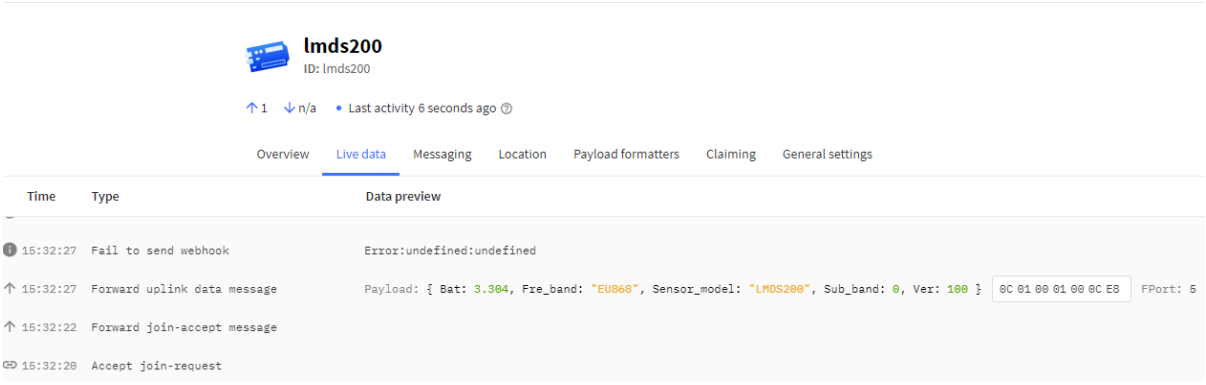
The application server should parse the correct value based on FPORT settings.

2.3.1 Device Status, FPORT=5

Include device configure status. Once LMDS200 Joined the network, it will uplink this message to the server.

Users can also use the downlink command (0x26 01) to ask LMDS200 to resend Device Status.

Device Status (FPORT=5)					
Size(bytes)	**1**	**2**	**1**	**1**	**2**
Value	Sensor Model	Firmware Version	Frequency Band	Sub-band	BAT



- **Sensor Model**: For LMDS200, this value is 0x0C
- **Firmware Version**: 0x0100, Means: v1.0.0 version
- **Frequency Band**:

0x01: EU868

0x02: US915

0x03: IN865

0x04: AU915

0x05: KZ865

0x06: RU864

0x07: AS923

0x08: AS923-1

0x09: AS923-2

0x0a: AS923-3

0x0b: CN470

0x0c: EU433

0x0d: KR920

0x0e: MA869

- **Sub-Band:**
  - AU915 and US915:value 0x00 ~ 0x08
  - CN470: value 0x0B ~ 0x0C
  - Other Bands: Always 0x00
- **Battery Info:**

Check the battery voltage.

Ex1: 0x0B45 = 2885mV

Ex2: 0x0B49 = 2889mV

2.3.2 Sensor Configuration, FPORT=4

LMDS200 will only send this command after getting the downlink command (0x26 02) from the server.

Sensor Configuration FPORT=4				
Size(bytes)	**3**	**1**	**4**	**1**
Value	TDC (unit:sec)	ATDC (unit:min)	Alarm Settings	Interrupt Settings

2.3.3 Distance, Uplink FPORT=2

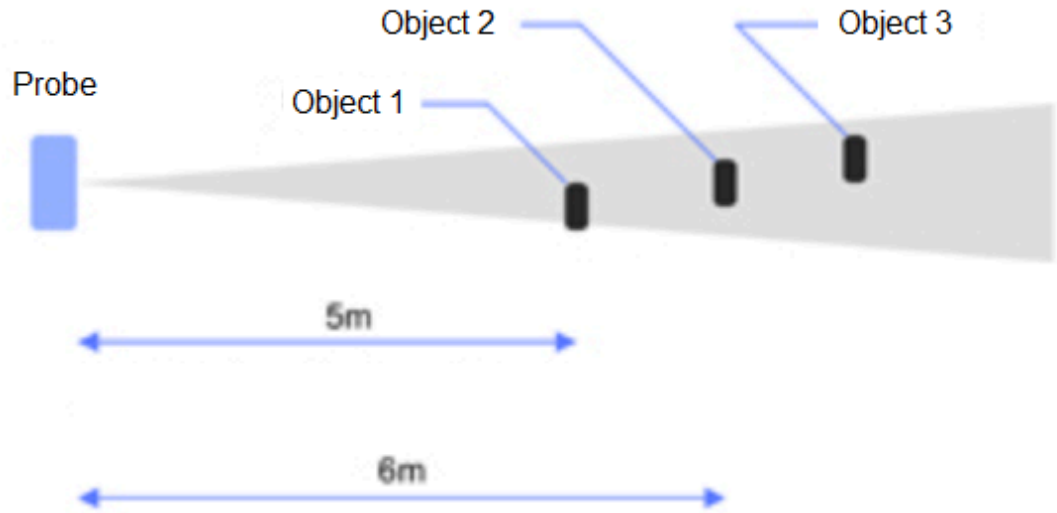
LMDS200 will send this uplink **after** Device Status once join the LoRaWAN network successfully. And LMDS200 will:

1. periodically send this uplink every 1 hour (TDC time), this interval can be changed.
2. periodically send this uplink every 1 minute in Alarm Mode.
3. send this uplink while there is interrupt event.

Uplink Payload totals 11 bytes.

Distance Value, FPORT=2				
Size(bytes)	**2**	**2**	**2**	**1**
Value	BAT	Object1 Distance	Object2 Distance	Status & Alarm

Status & Alarm field			
Size(bit)	**6**	**1**	**1**
Value	DALARM Counter	Distance Alarm 0: Normal Value 1: Distance Alarm	Interrupt Alarm 0: No Alarm 1: external Interrupt Alarm



Object1 Distance:

Distance between sensor probe to the first object. (unit: cm)

For example, if the data you get from the register is 0x00 0x73, the distance between the sensor and the measured object is **0073(H) = 115 (D) = 115 cm.**

Notice: There are two special values for object 1 distance:

- **0x0001**: Probe not detected
- **0x0002**: Reading Invalid (exceed the valid range of the probe)

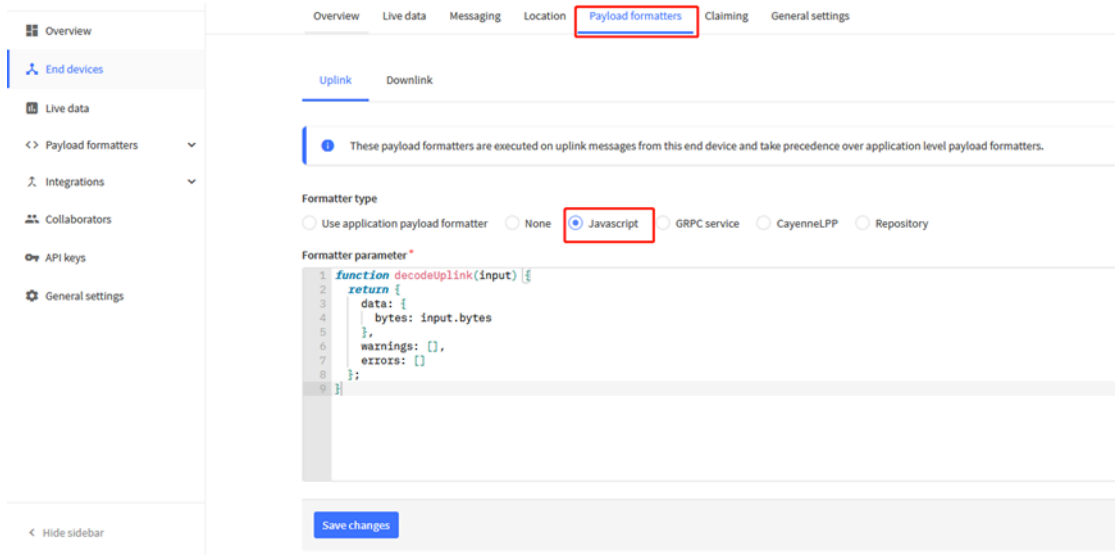
Object2 Distance:

Distance between sensor probe to the second object. (unit: cm)

DALARM Counter : Alarm Counter.

14:30:18	Forward uplink data message	Payload: { Bat: 3.328, DALARM_count: 19, Distance_alarm: 1, Interrupt_alarm: 0, dis1: 115, dis2: 164 }	0D 00 00 73 00 A4 4E FP
14:29:18	Fail to send webhook	Error:undefined:undefined	
14:29:18	Fail to send webhook	Error:undefined:undefined	
14:29:18	Fail to send webhook	Error:undefined:undefined	
14:29:18	Fail to send webhook	Error:undefined:undefined	
14:29:18	Forward uplink data message	Payload: { Bat: 3.328, DALARM_count: 18, Distance_alarm: 1, Interrupt_alarm: 0, dis1: 115, dis2: 164 }	0D 00 00 73 00 A4 4A FP
14:28:18	Fail to send webhook	Error:undefined:undefined	
14:28:18	Fail to send webhook	Error:undefined:undefined	
14:28:18	Fail to send webhook	Error:undefined:undefined	
14:28:18	Fail to send webhook	Error:undefined:undefined	
14:28:18	Forward uplink data message	Payload: { Bat: 3.33, DALARM_count: 17, Distance_alarm: 1, Interrupt_alarm: 0, dis1: 115, dis2: 164 }	0D 02 00 73 00 A4 46 FPo

2.3.4 Decoder in TTN V3



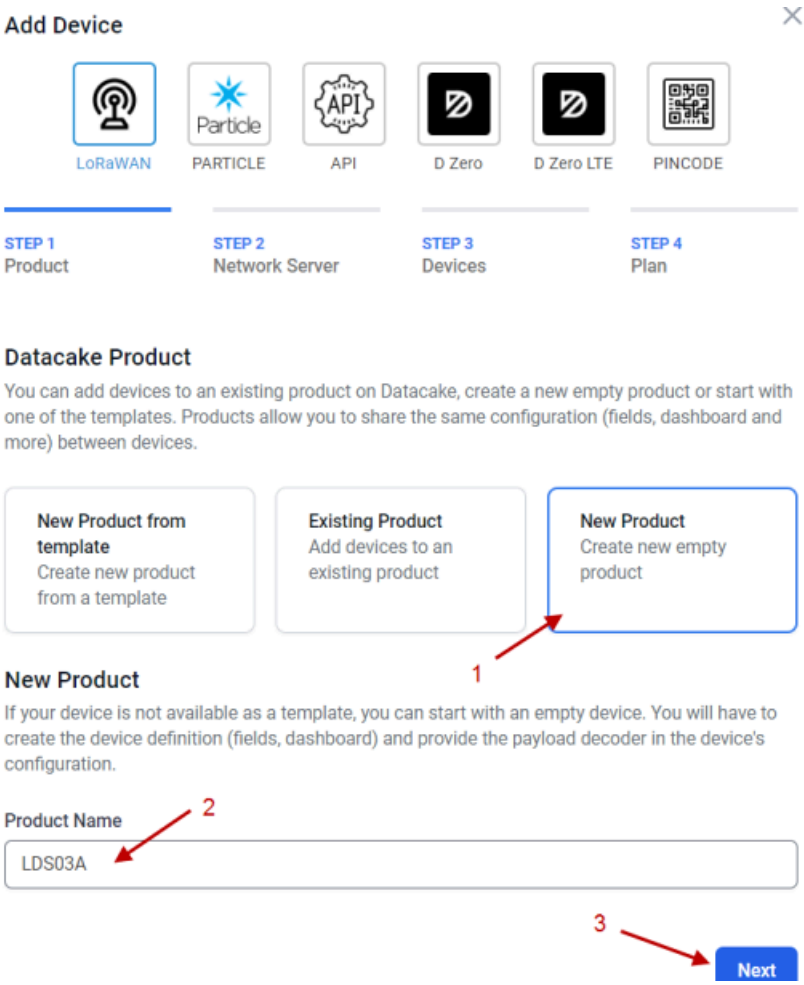
Please check the decoder from this link: https://github.com/dragino/dragino-end-node-decoder

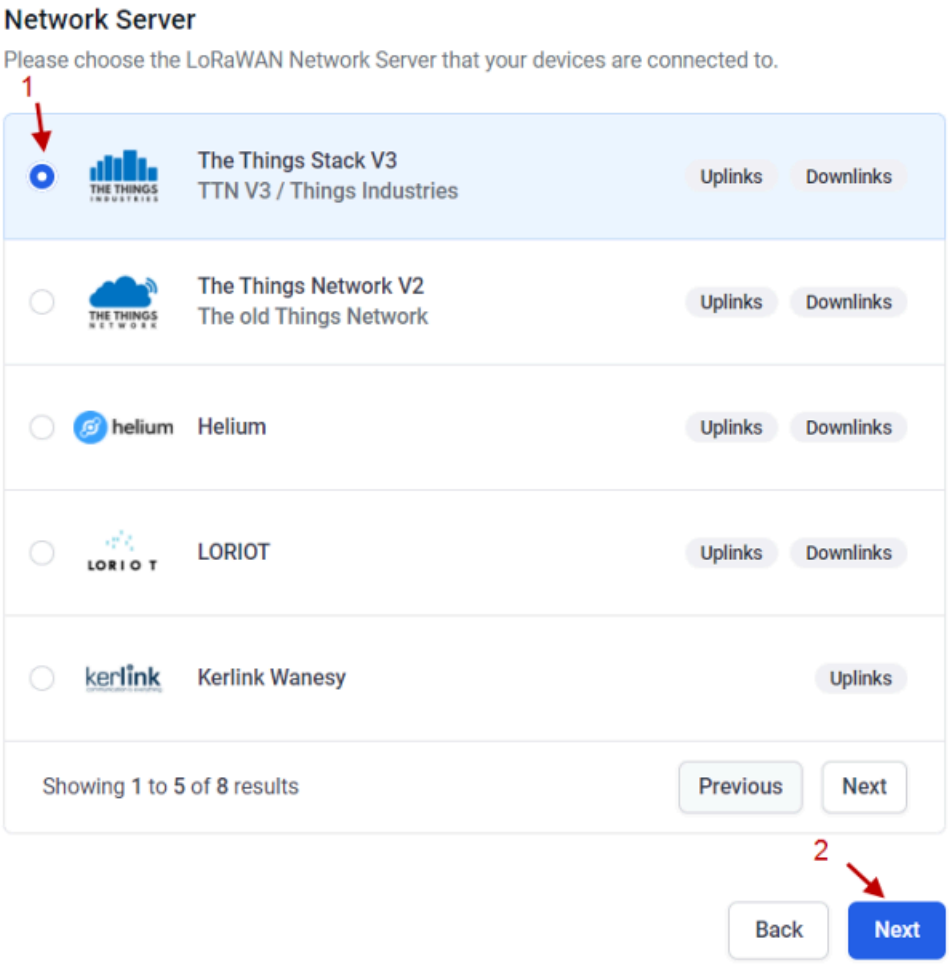
2.4 Show data on Datacake

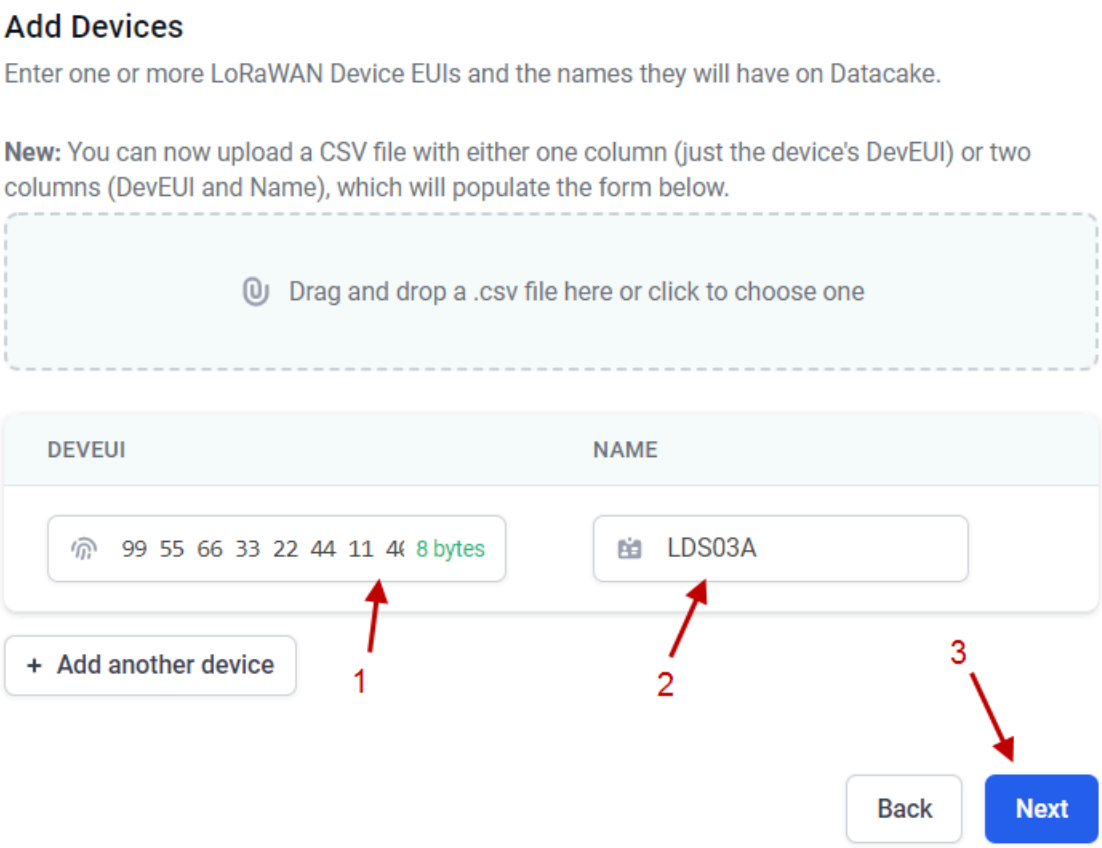
Datacake IoT platform provides a human-friendly interface to show the sensor data, once we have sensor data in TTN V3, we can use Datacake to connect to TTN V3 and see the data in Datacake. Below are the steps:

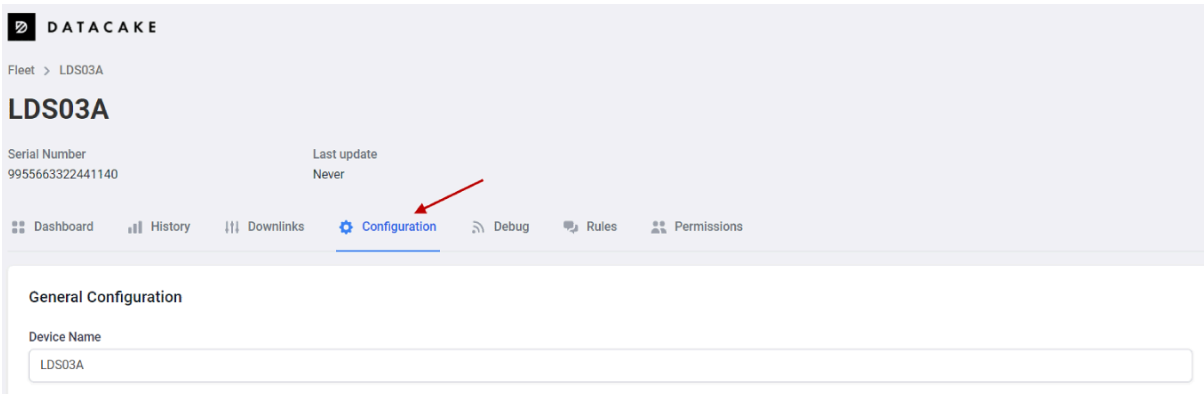
Step 1: Link TTNv3 to DATACAKE

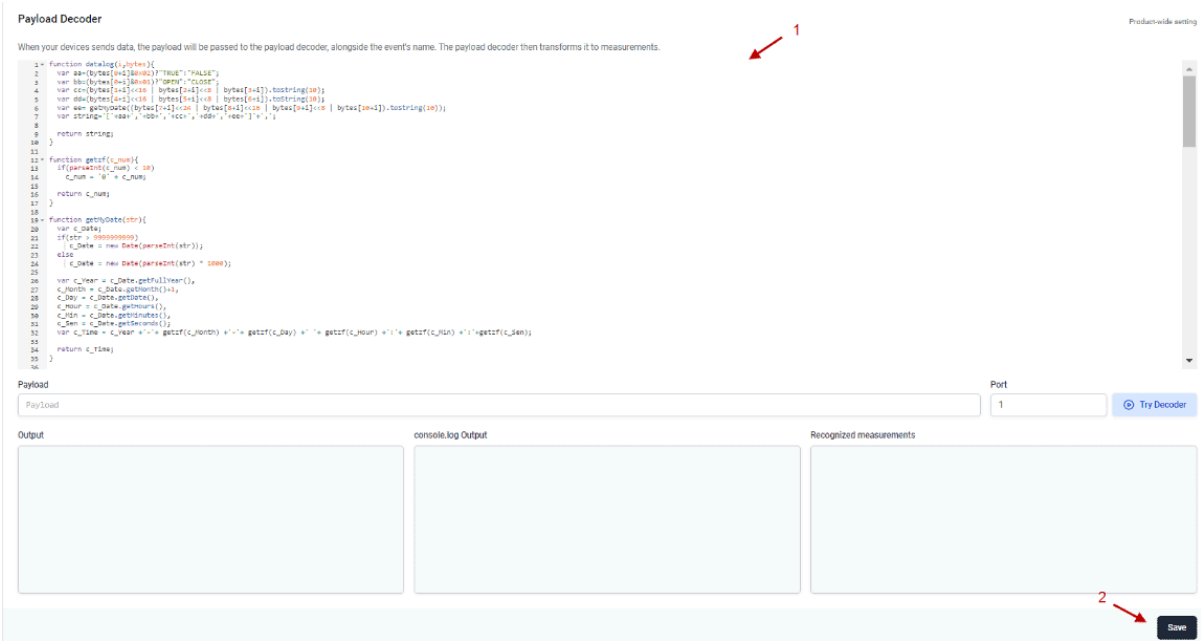
Step 2: Configure LMDS200 in Datacake

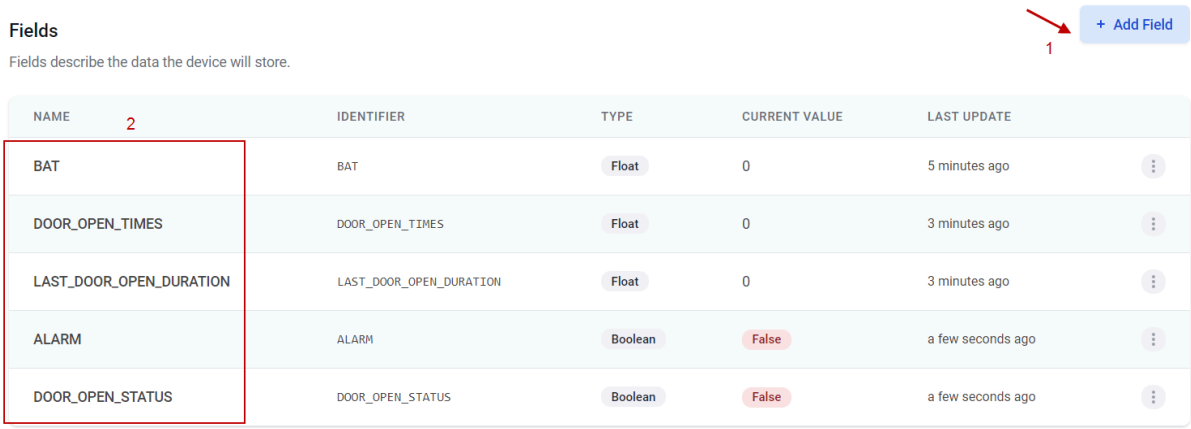

Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Datacake Product
You can add devices to an existing product on Datacake, create a new empty product or start with one of the templates. Products allow you to share the same configuration (fields, dashboard and more) between devices.
New Product from template
Create new product from a template
Existing Product
Add devices to an existing product
New Product
Create new empty product
1
New Product
If your device is not available as a template, you can start with an empty device. You will have to create the device definition (fields, dashboard) and provide the payload decoder in the device's configuration.
Product Name
2
LDS03A
3
Next

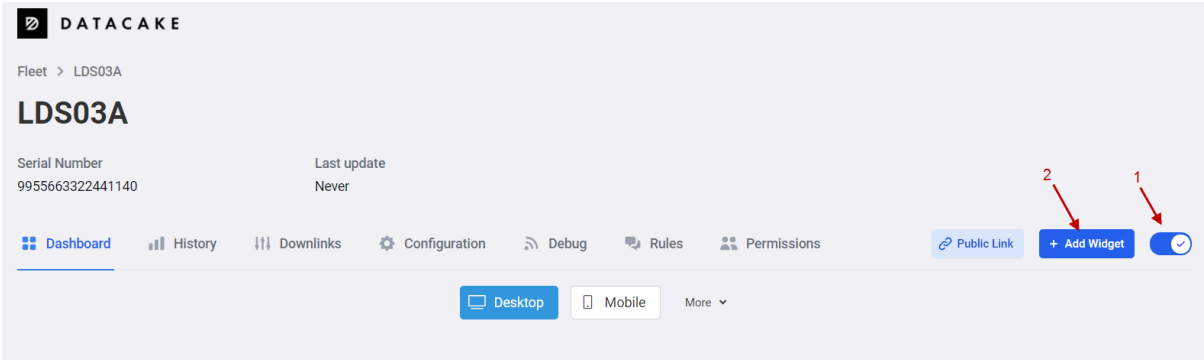

Network Server
Please choose the LoRaWAN Network Server that your devices are connected to.
1
The Things Stack V3
TTN V3 / Things Industries
Uplinks
Downlinks
The Things Network V2
The old Things Network
Uplinks
Downlinks
helium
Helium
Uplinks
Downlinks
LORIOT
LORIOT
Uplinks
Downlinks
kerlink
Kerlink Wanesy
Uplinks
Showing 1 to 5 of 8 results
Previous
Next
2
Back
Next

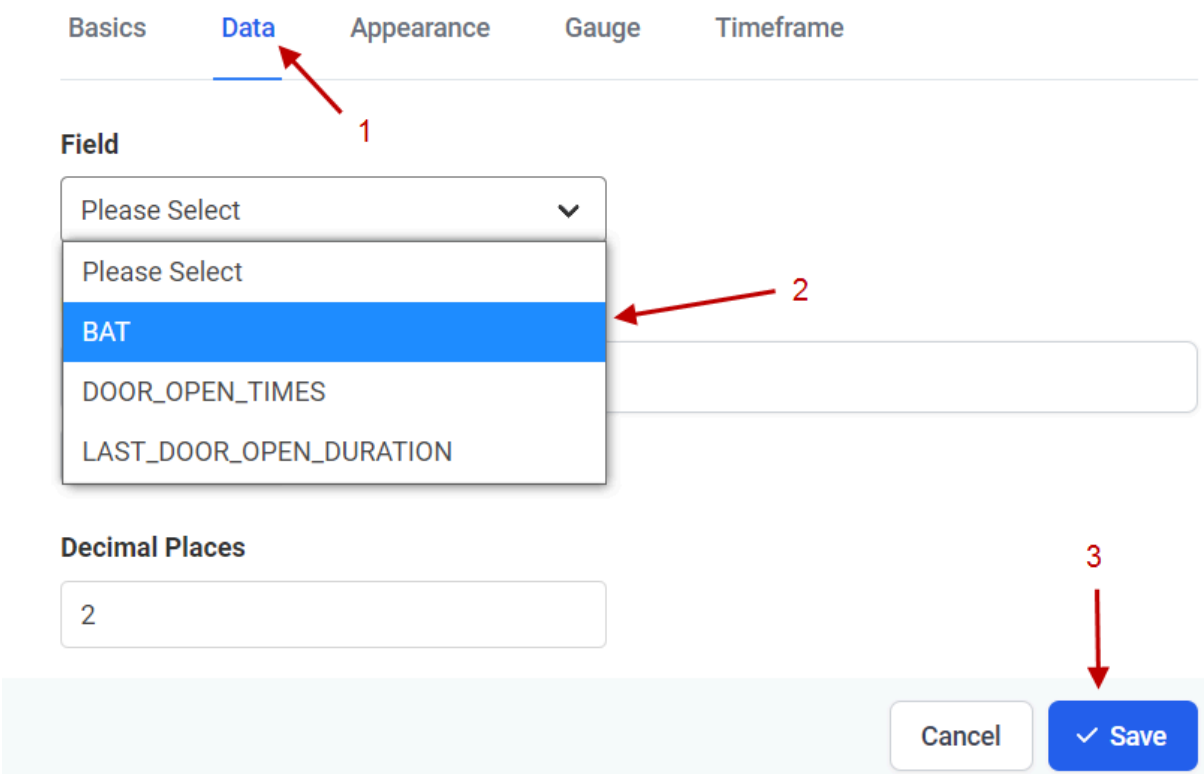

Add Devices
Enter one or more LoRaWAN Device EUIs and the names they will have on Datacake.
New: You can now upload a CSV file with either one column (just the device's DevEUI) or two columns (DevEUI and Name), which will populate the form below.
Drag and drop a .csv file here or click to choose one
DEVEUI
NAME
99 55 66 33 22 44 11 4(8 bytes
LDS03A
+ Add another device
1
2
3
Back
Next

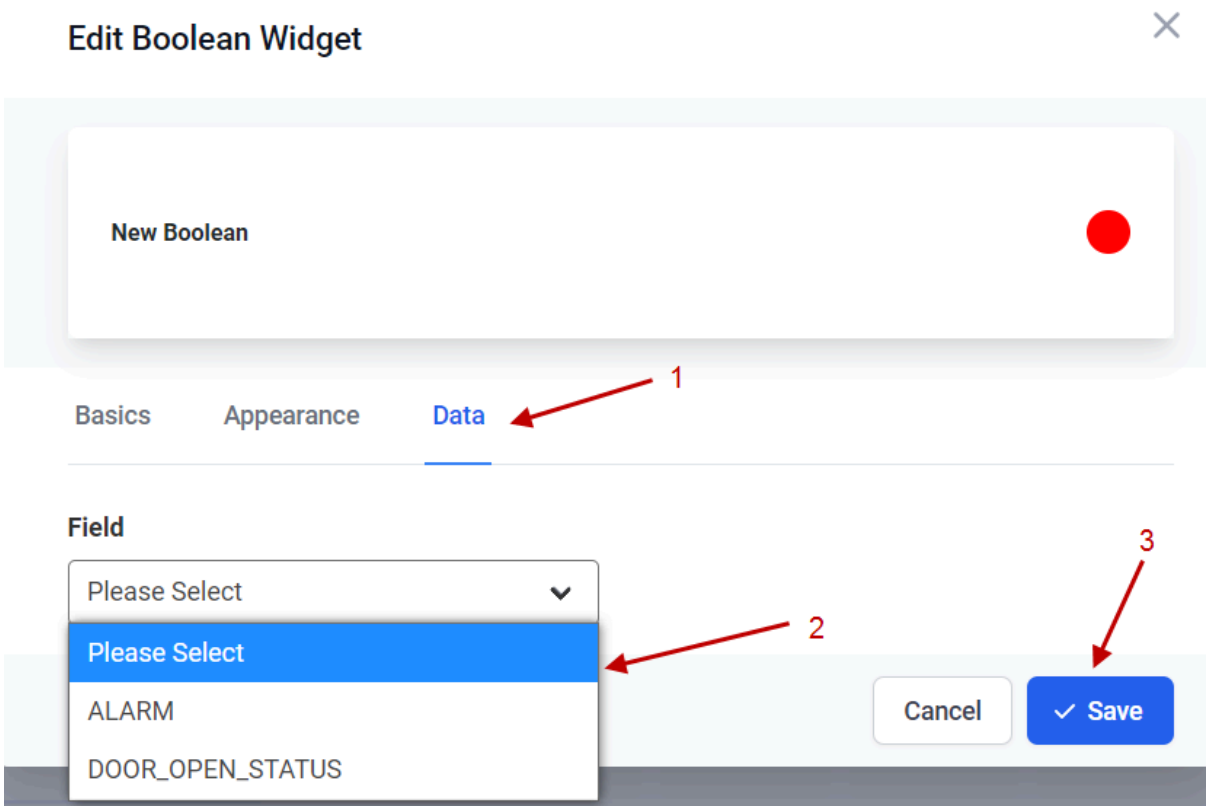

DATACAKE
Fleet > LDS03A
LDS03A
Serial Number
9955663322441140
Last update
Never
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
General Configuration
Device Name
LDS03A

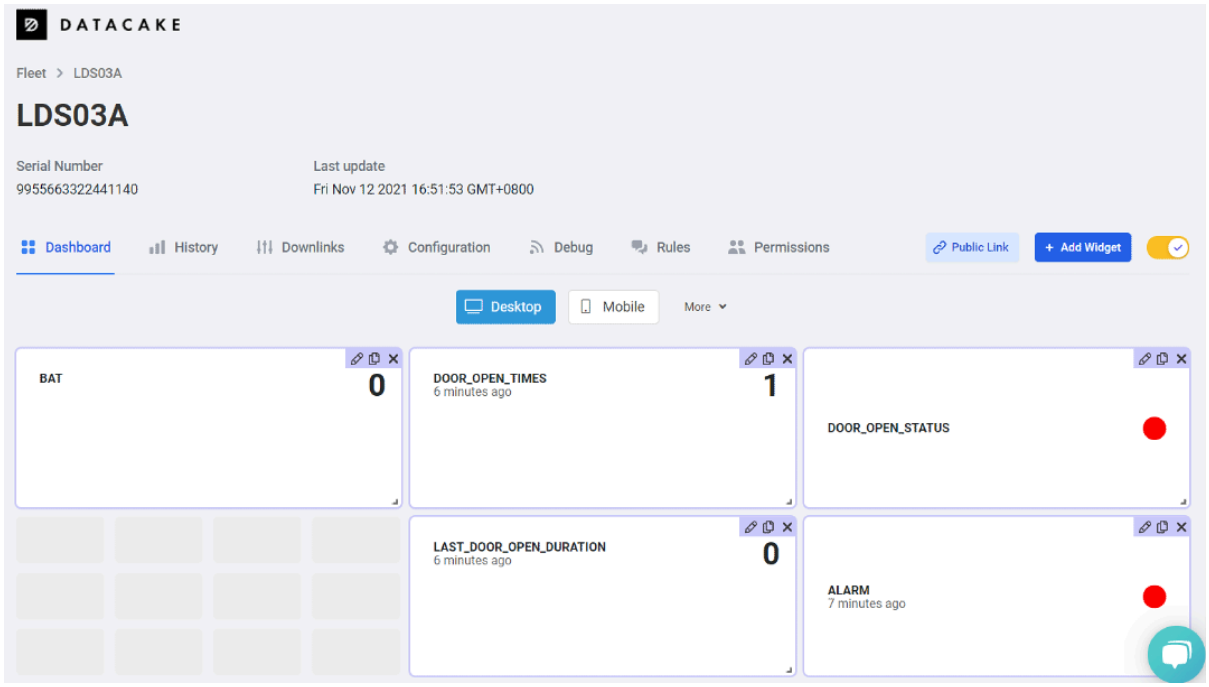

Payload Decoder
When your devices sends data, the payload will be passed to the payload decoder, alongside the event's name. The payload decoder then transforms it to measurements.
Product-wide setting
1
Payload
Port
Try Decoder
Output
console.log Output
Recognized measurements
2
Save


Fields
Fields describe the data the device will store.
+ Add Field
1
2
NAME
IDENTIFIER
TYPE
CURRENT VALUE
LAST UPDATE
BAT
BAT
Float
0
5 minutes ago
DOOR_OPEN_TIMES
DOOR_OPEN_TIMES
Float
0
3 minutes ago
LAST_DOOR_OPEN_DURATION
LAST_DOOR_OPEN_DURATION
Float
0
3 minutes ago
ALARM
ALARM
Boolean
False
a few seconds ago
DOOR_OPEN_STATUS
DOOR_OPEN_STATUS
Boolean
False
a few seconds ago


DATACAKE
Fleet > LDS03A
LDS03A
Serial Number
9955663322441140
Last update
Never
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
Public Link
+ Add Widget
Desktop
Mobile
More
2
1


Basics
Data
Appearance
Gauge
Timeframe
1
Field
Please Select
Please Select
BAT
DOOR_OPEN_TIMES
LAST_DOOR_OPEN_DURATION
2
Decimal Places
2
3
Cancel
Save





3. Configure LMDS200 via AT Command or LoRaWAN Downlink

Use can configure LMDS200 via AT Command or LoRaWAN Downlink.

- AT Command Connection: See FAQ.
- LoRaWAN Downlink instruction for different platforms: IoT LoRaWAN Server

There are two kinds of commands to configure LMDS200, they are:

- **General Commands**.

These commands are to configure:

- General system settings like: uplink interval.
- LoRaWAN protocol & radio related command.

They are same for all Dragino Device which support DLWS-005 LoRaWAN Stack**(Note**)**. These commands can be found on the wiki: End Device AT Commands and Downlink Command

- **Commands special design for LMDS200**

These commands only valid for LMDS200, as below:

3.1 Set Transmit Interval Time(0x01)

Feature: Change LoRaWAN End Node Transmit Interval.

AT Command: AT+TDC

Command Example	Function	Response
AT+TDC=?	Show current transmit Interval	30000 OK the interval is 30000ms = 30s
AT+TDC=60000	Set Transmit Interval	OK Set transmit interval to 60000ms = 60 seconds

Downlink Command: 0x01

Format: Command Code (0x01) followed by 3 bytes time value.

If the downlink payload=0100003C, it means set the END Node's Transmit Interval to 0x00003C=60(S), while type code is 01.

- Example 1: Downlink Payload: 0100001E // Set Transmit Interval (TDC) = 30 seconds
- Example 2: Downlink Payload: 0100003C // Set Transmit Interval (TDC) = 60 seconds

3.2 Set Alarm Transmit Interval Time(0x0D)

Feature: Change LoRaWAN End Node Alarm Transmit Interval. Default Value: 1 minute

AT Command: AT+ATDC

Command Example	Function	Response
AT+ATDC=?	Show current alarm transmit Interval	1 OK the interval is 1 minute
AT+ATDC=1	Set Alarm Transmit Interval	OK Set alarm transmit interval to 1 minute

Downlink Command: 0x0D

Format: Command Code (0x0D) followed by 1 byte for time value.

If the downlink payload=0D02, it means set the END Node's Alarm Transmit Interval to 2 minutes, while type code is 0D.

3.3 Set Alarm Distance (0xA2)

LMDS200 supports Alarm Feature, when LMDS200 detect the distance exceed the alarm settings, LMDS200 will Enter Alarm Mode and use the ATDC interval (default is 1 minute) to uplink Distance value. Alarm mode will last for 60 uplinks (default 1 hour) and can be close by downlink command 0xA300.

Note: Alarm mode only valid for the Distance 1(the Closest Object)

User can set Alarm Distance to enable/disable Alarm Mode.

AT+ALARMC=AABBCCDD

- AABB: Hex value for Alarm low threshold, CCDD: Hex value for Alarm high threshold
- When 0xAABB=0, and 0xCCDD≠0, Alarm trigger when higher than max
- When 0xAABB≠0, and 0xCCDD =0xFFFF, Alarm trigger when lower than min
- When 0xAABB≠0 and 0xCCDD≠0, Alarm trigger when higher than max or lower than min

Example:

AT+ALARMC=006400C8 // Alarm when < 100 or higher than 200.

Downlink Payload:

0x(A2 00 01 00 00) // Same as AT+ALARMC=00010000

3.4 Enter/Exit Alarm Mode (0xA3)

Feature: Enter/Exit Alarm mode:

AT Command: AT+ALARM=0(Exit Alarm Mode or AT+ALARM=1 (Enter Alarm Mode)

Downlink Command:

0xA3 00 // Exit Alarm Mode.

0xA3 01 // Enter Alarm Mode. Enter Alarm mode will use ATDC interval in the next 59 uplinks.

3.5 Set Interrupt Mode(0x06)

Feature, Set Interrupt mode for GPIO_EXIT.

AT Command: AT+INTMOD

Command Example	Function	Response
AT+INTMOD=?	Show current interrupt mode	0 OK the mode is 0 = No interruption
AT+INTMOD=2	Set the interrupt triggering mode 0. (Disable Interrupt), 1. (Trigger by rising and falling edge) 2. (Trigger by falling edge) 3. (Trigger by rising edge)	OK

Downlink Command: 0x06

Format: Command Code (0x06) followed by 3 bytes.

This means that the interrupt mode of the end node is set to 0x000003=3 (rising edge trigger), and the type code is 06.

- Example 1: Downlink Payload: 06000000 // Turn off interrupt mode
- Example 2: Downlink Payload: 06000003 // Set the interrupt mode to rising edge trigger

4. Battery & Power Consumption

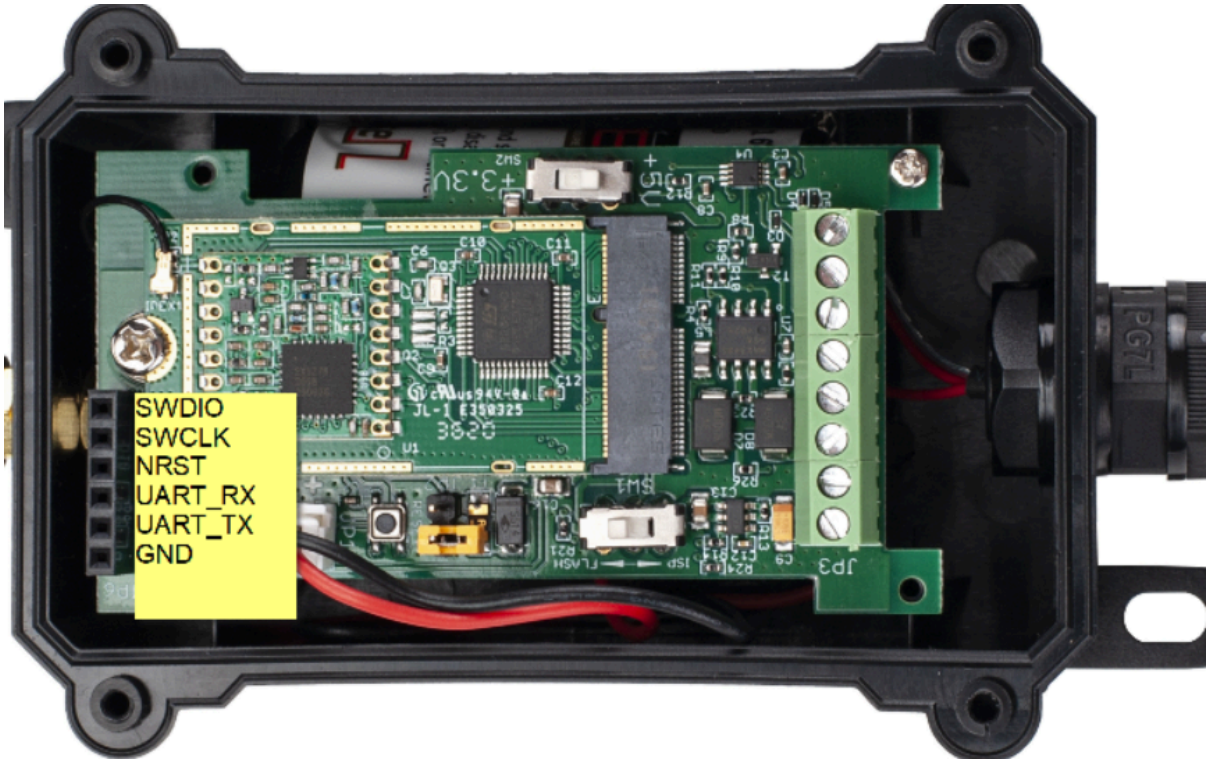
LMDS200 uses ER26500 + SPC1520 battery pack. See below link for detail information about the battery info and how to replace.

Battery Info & Power Consumption Analyze .

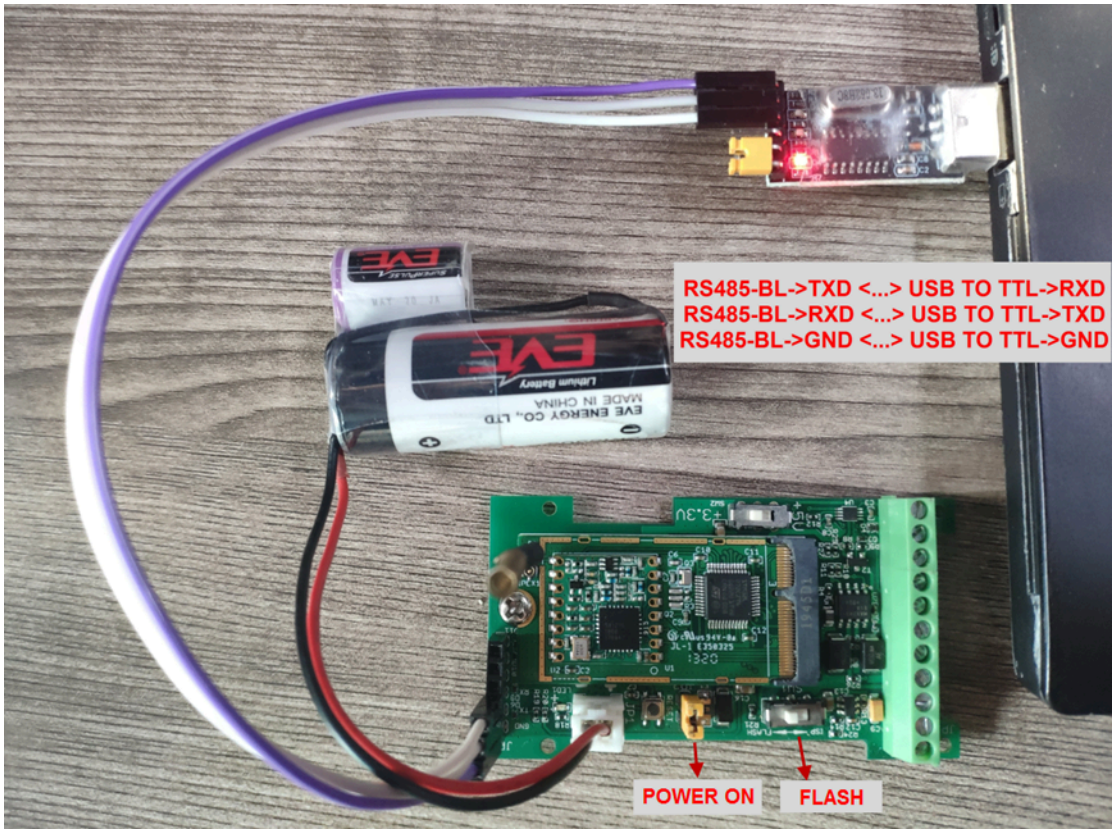
5. FAQ

5.1 How to use AT Command to configure LMDS200

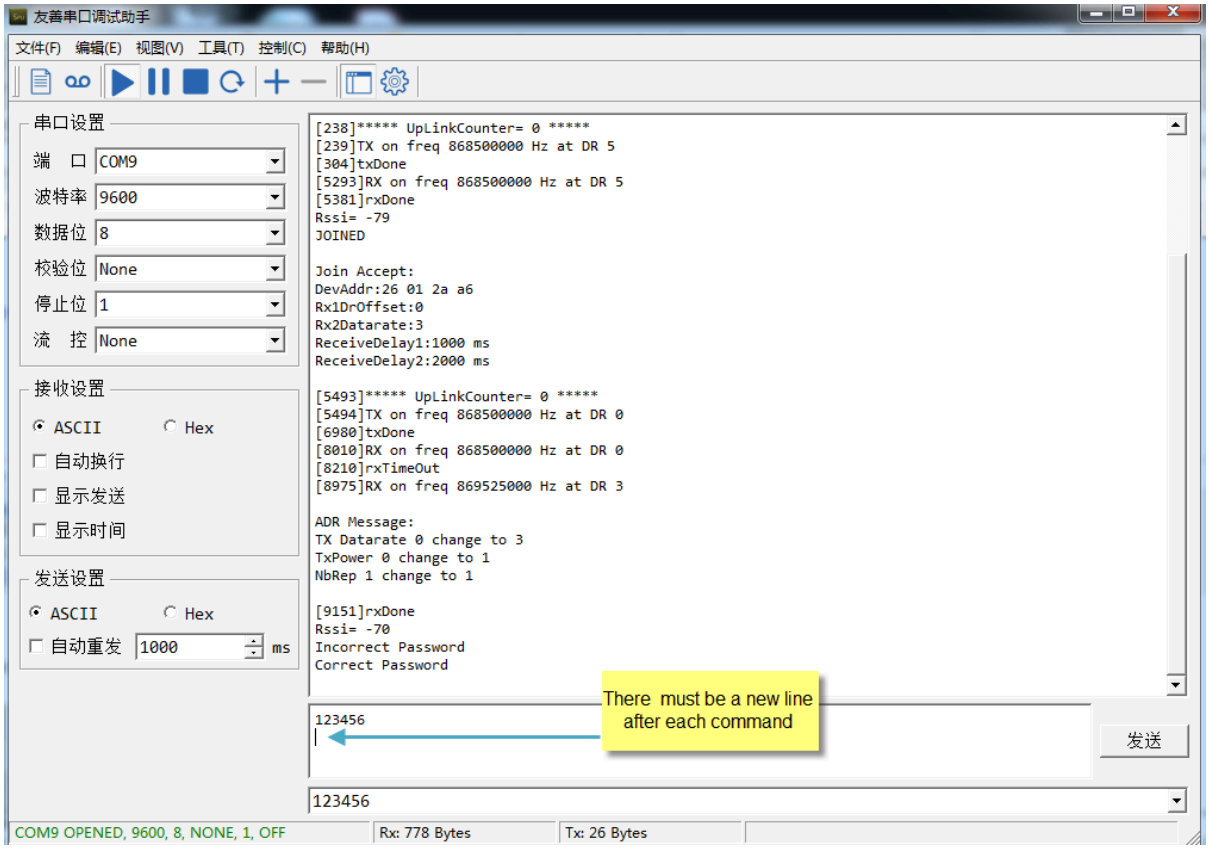
LMDS200 UART connection photo



LMDS200 supports AT Command set. User can use a USB to TTL adapter plus the 3.5mm Program Cable to connect to LMDS200 to use AT command, as below.



In the PC, you need to set the serial baud rate to **9600** to access the serial console for LMDS200. LMDS200 will output system info once power on as below:



5.2 How to upgrade the firmware?

A new firmware might be available for:

- Support new features
- For bug fix
- Change LoRaWAN bands.

Instruction for how to upgrade: http://wiki.dragino.com/xwiki/bin/view/Main/Firmware%20Upgrade%20Instruction%20for%20STM32%20base%20products/#H2.HardwareUpgradeMethodSupportList

Firmware location: https://www.dragino.com/downloads/index.php?dir=LoRa_End_Node/LMDS200/Firmware/

5.3 How to change the LoRa Frequency Bands/Region

You can follow the instructions for how to upgrade image.
When downloading the images, choose the required image file for download.

6. Trouble Shooting

6.1 AT Command input doesn't work

In the case if user can see the console output but can't type input to the device. Please check if you already include the **ENTER** while sending out the command. Some serial tool doesn't send **ENTER** while press the send key, user need to add ENTER in their string.

7. Order Info

Part Number **: LMDS200-XX**

XX: The default frequency band

- **AS923 :** LoRaWAN AS923 band
- **AU915 :** LoRaWAN AU915 band
- **EU433 :** LoRaWAN EU433 band
- **EU868 :** LoRaWAN EU868 band
- **KR920 :** LoRaWAN KR920 band
- **US915 :** LoRaWAN US915 band
- **IN865 :** LoRaWAN IN865 band
- **CN470 :** LoRaWAN CN470 band

8. Packing Info

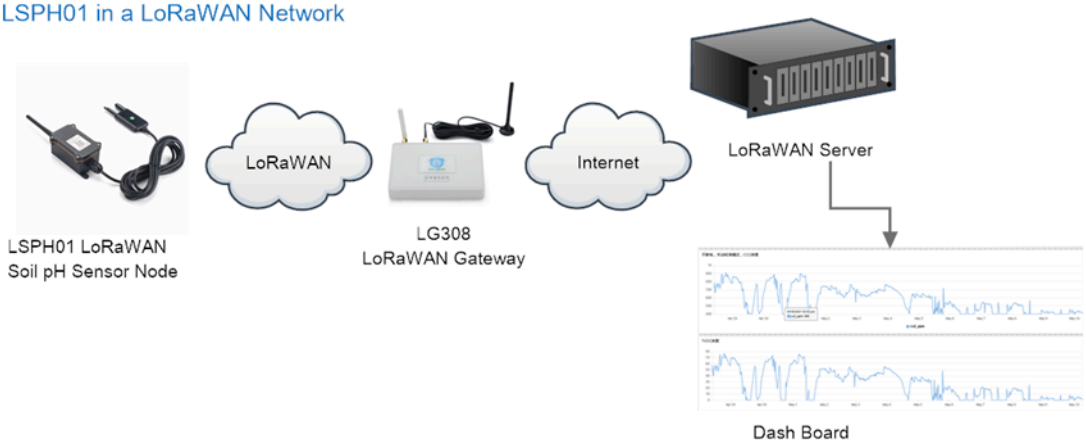
Package Includes:

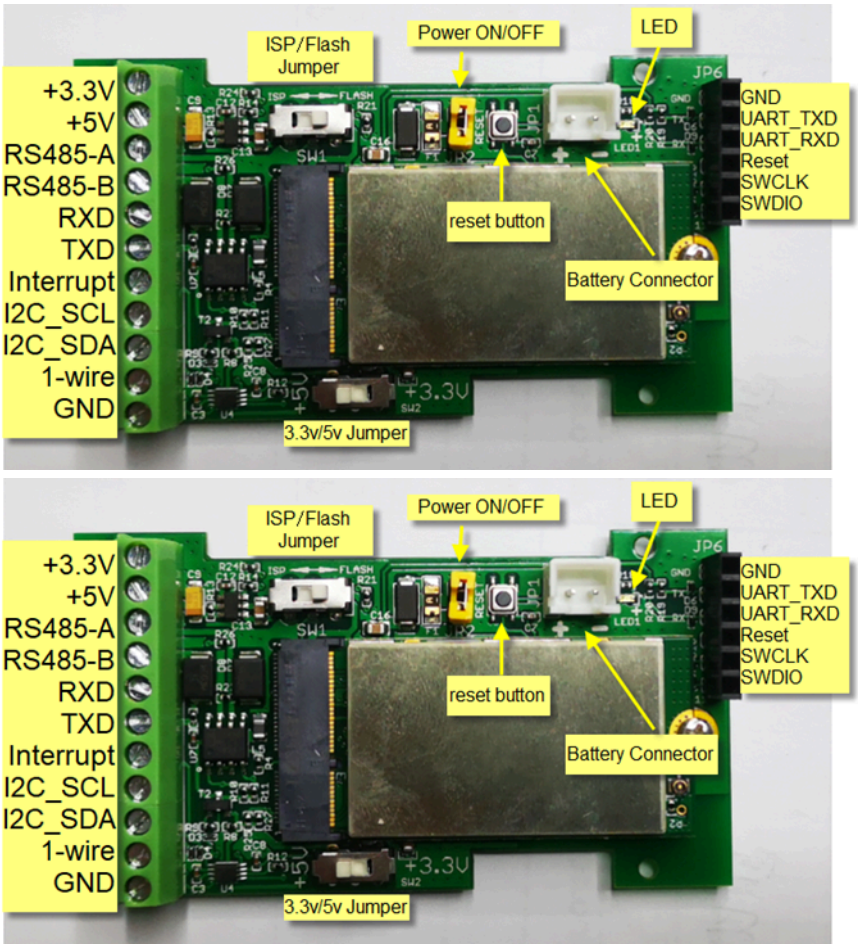
LMDS200 LoRaWAN Microwave Radar Distance Sensor x 1

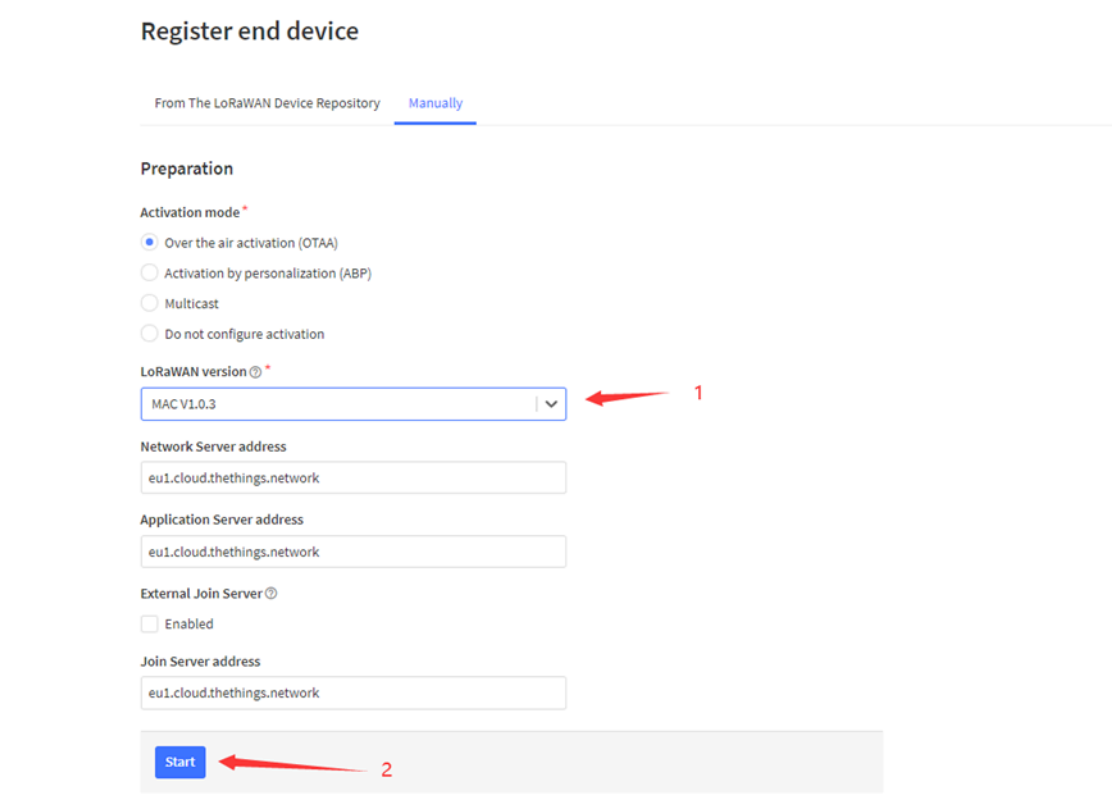
9. Support

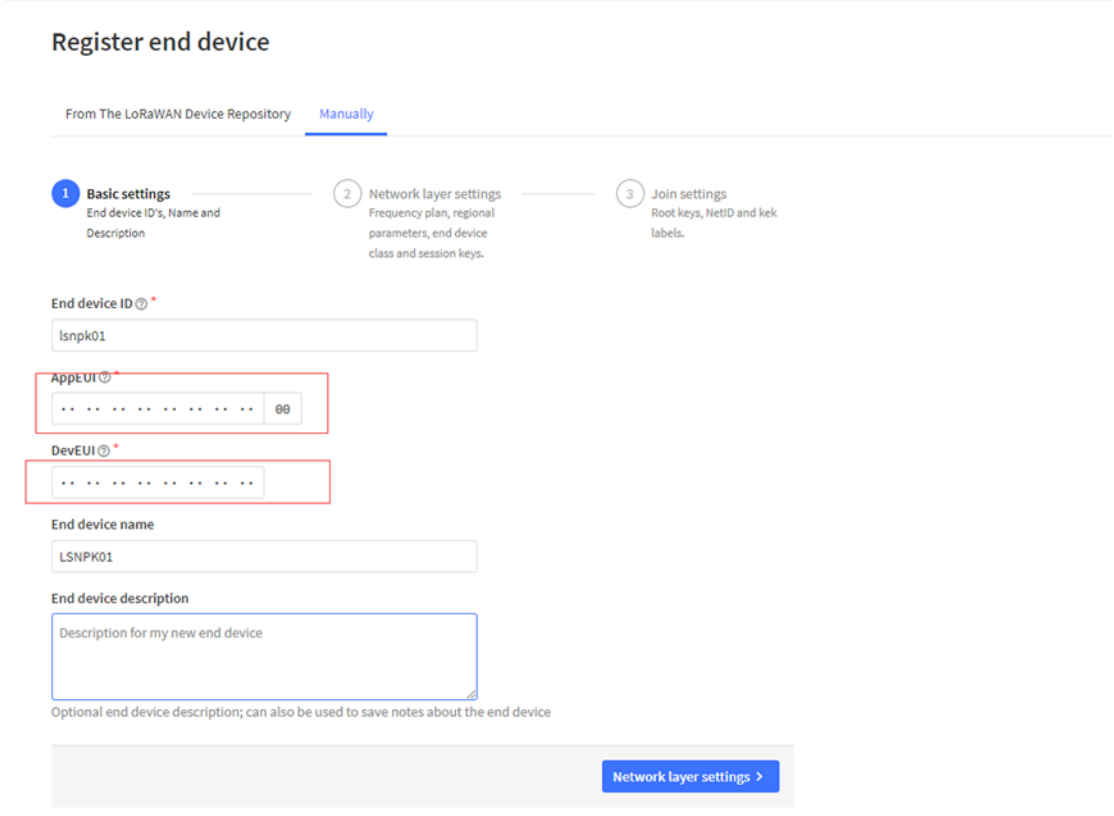
- Support is provided Monday to Friday, from 09:00 to 18:00 GMT+8. Due to different timezones we cannot offer live support. However, your questions will be answered as soon as possible in the before-mentioned schedule.
- Provide as much information as possible regarding your enquiry (product models, accurately describe your problem and steps to replicate it etc) and send a mail to support@dragino.com.

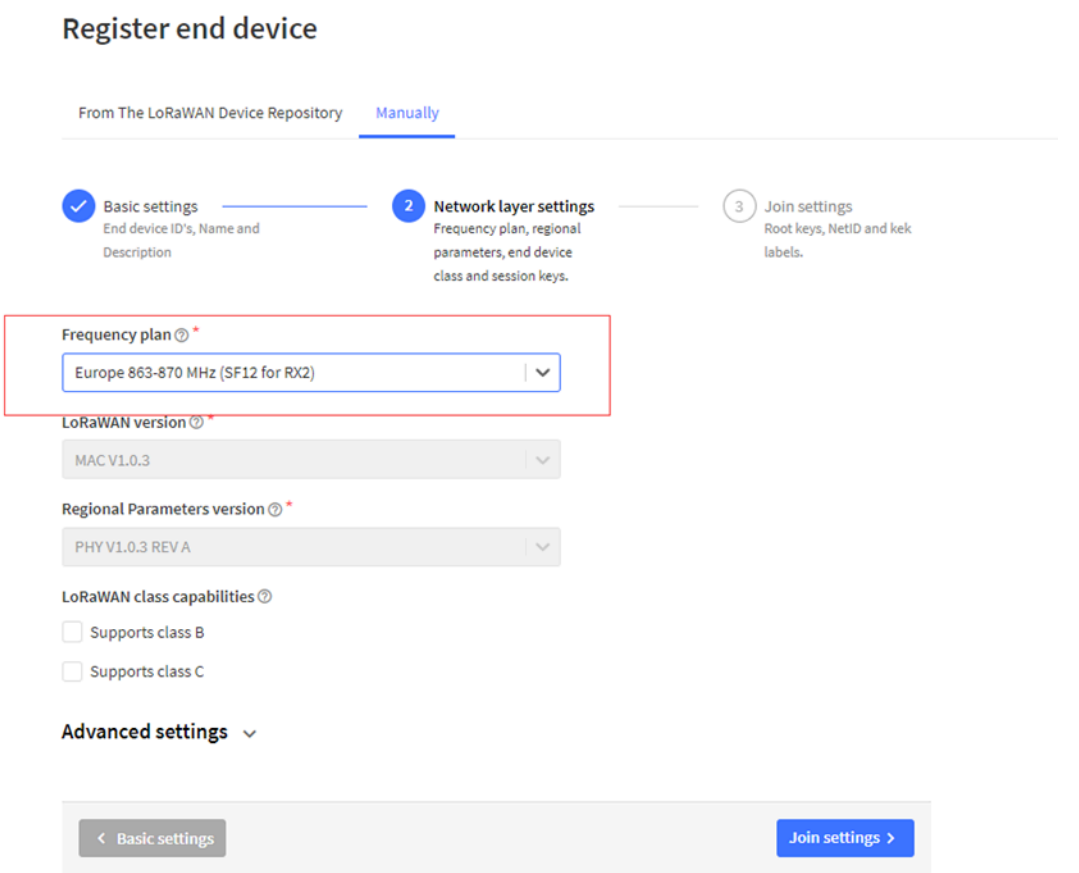
LSPH01 in a LoRaWAN Network

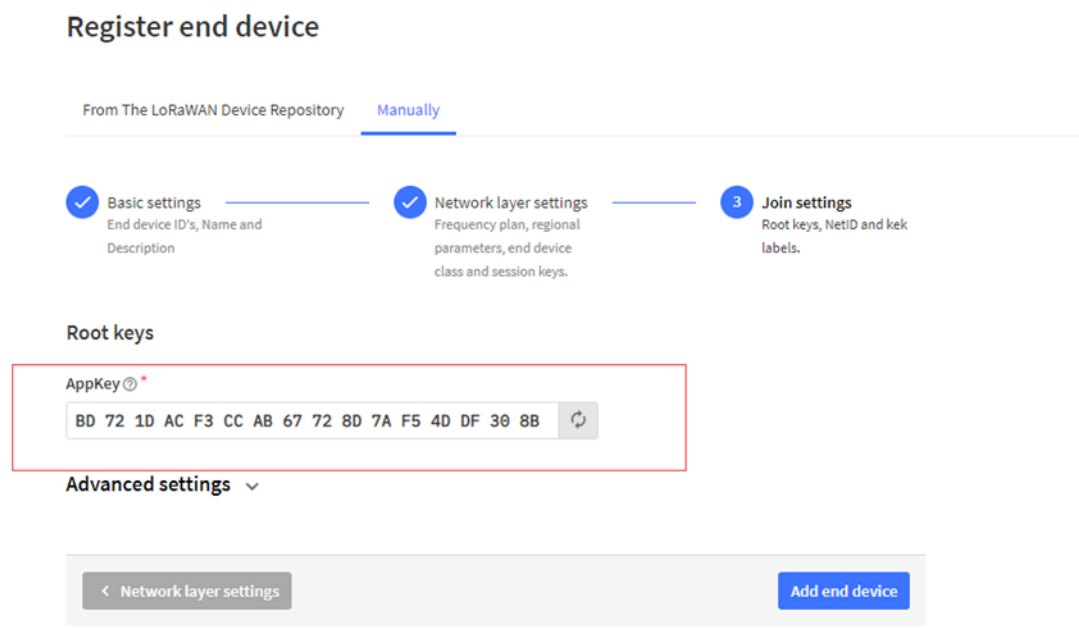


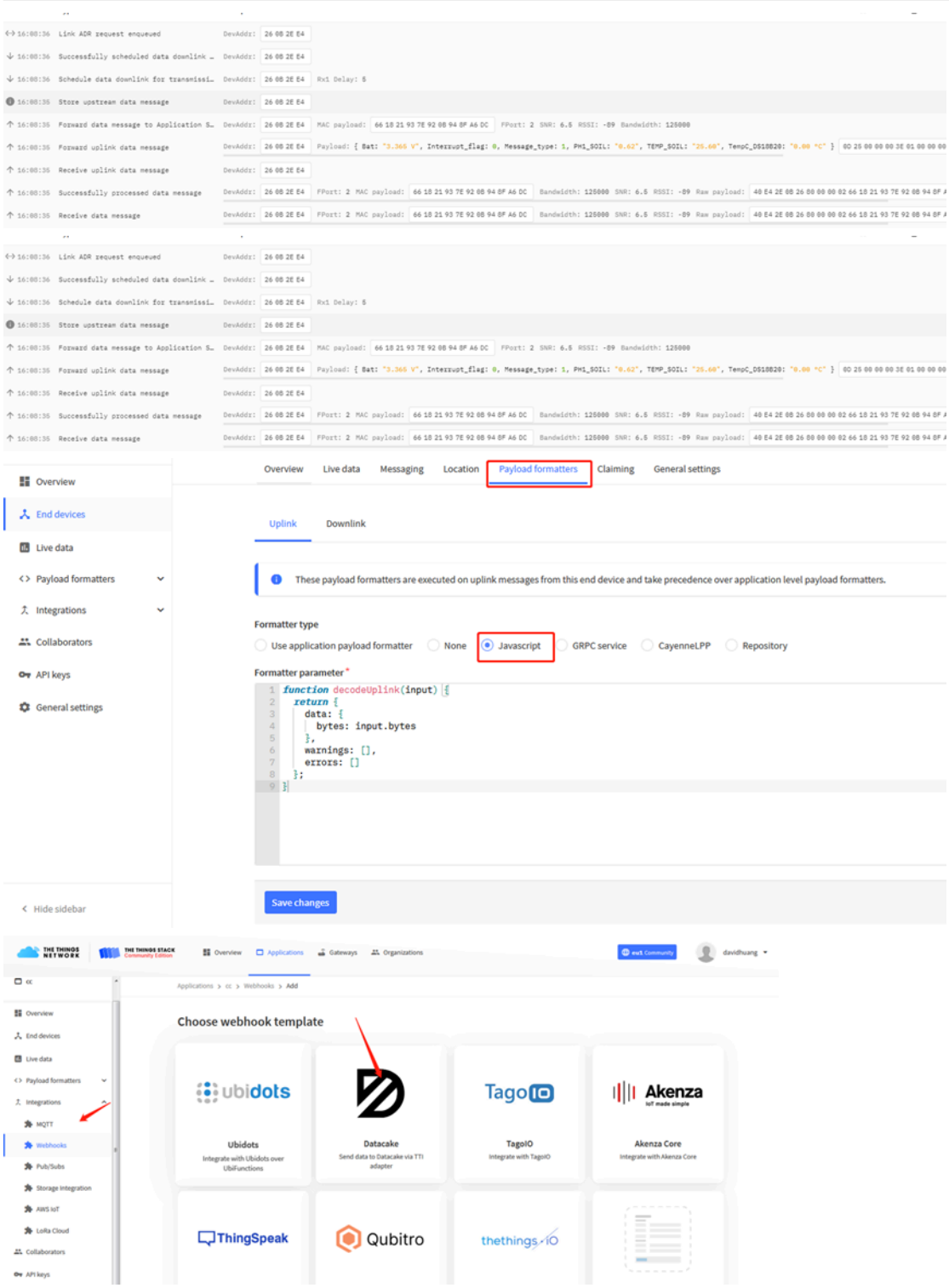

ISP/Flash Jumper
Power ON/OFF
LED
+3.3V
+5V
RS485-A
RS485-B
RXD
TXD
Interrupt
I2C_SCL
I2C_SDA
1-wire
GND
GND
UART_TXD
UART_RXD
Reset
SWCLK
SWDIO
reset button
Battery Connector
3.3v/5v Jumper


Register end device
From The LoRaWAN Device Repository
Manually
Preparation
Activation mode *
Over the air activation (OTAA)
Activation by personalization (ABP)
Multicast
Do not configure activation
LoRaWAN version *
MAC V1.0.3
1
Network Server address
eu1.cloud.thethings.network
Application Server address
eu1.cloud.thethings.network
External Join Server
Enabled
Join Server address
eu1.cloud.thethings.network
Start
2

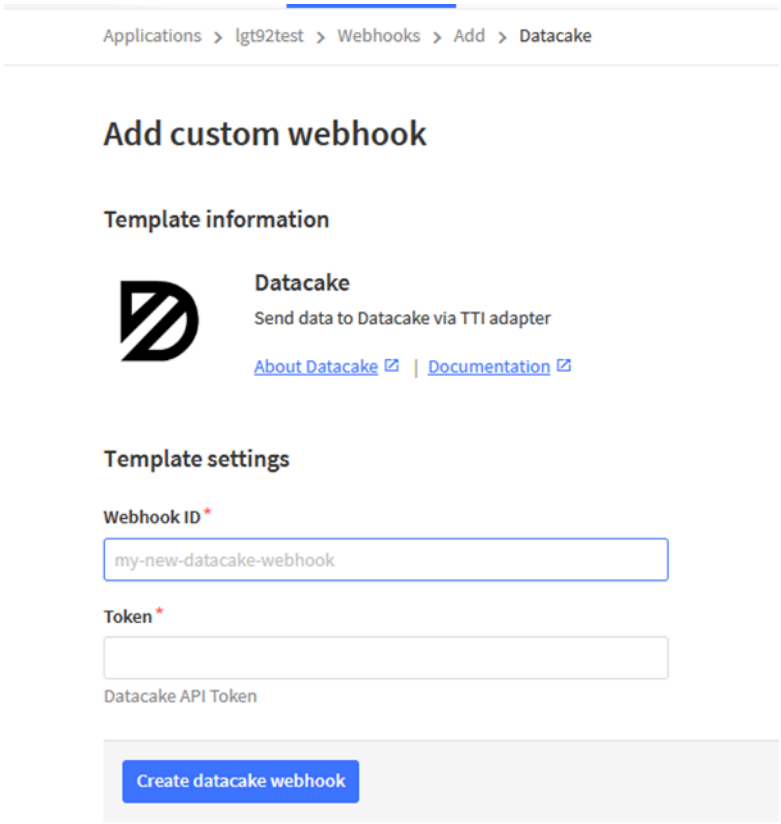

Register end device
From The LoRaWAN Device Repository
Manually
1 Basic settings
End device ID's, Name and Description
2 Network layer settings
Frequency plan, regional parameters, end device class and session keys.
3 Join settings
Root keys, NetID and kek labels.
End device ID *
lsnpk01
AppEUI *
00
DevEUI *
End device name
LSNPK01
End device description
Description for my new end device
Optional end device description; can also be used to save notes about the end device
Network layer settings >

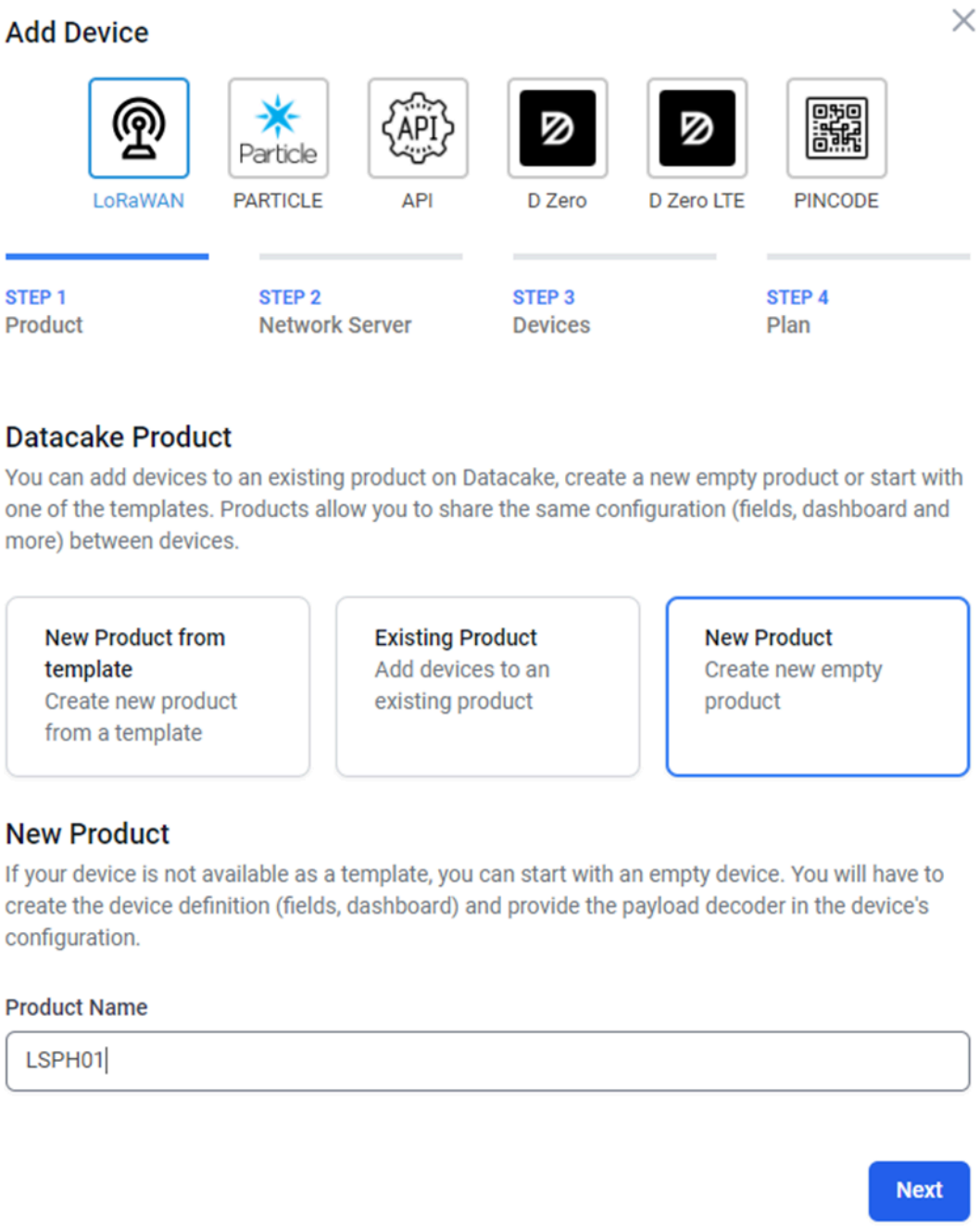

Register end device
From The LoRaWAN Device Repository
Manually
Basic settings
End device ID's, Name and Description
2
Network layer settings
Frequency plan, regional parameters, end device class and session keys.
3
Join settings
Root keys, NetID and kek labels.
Frequency plan *
Europe 863-870 MHz (SF12 for RX2)
LoRaWAN version *
MAC V1.0.3
Regional Parameters version *
PHY V1.0.3 REV A
LoRaWAN class capabilities
Supports class B
Supports class C
Advanced settings
Basic settings
Join settings

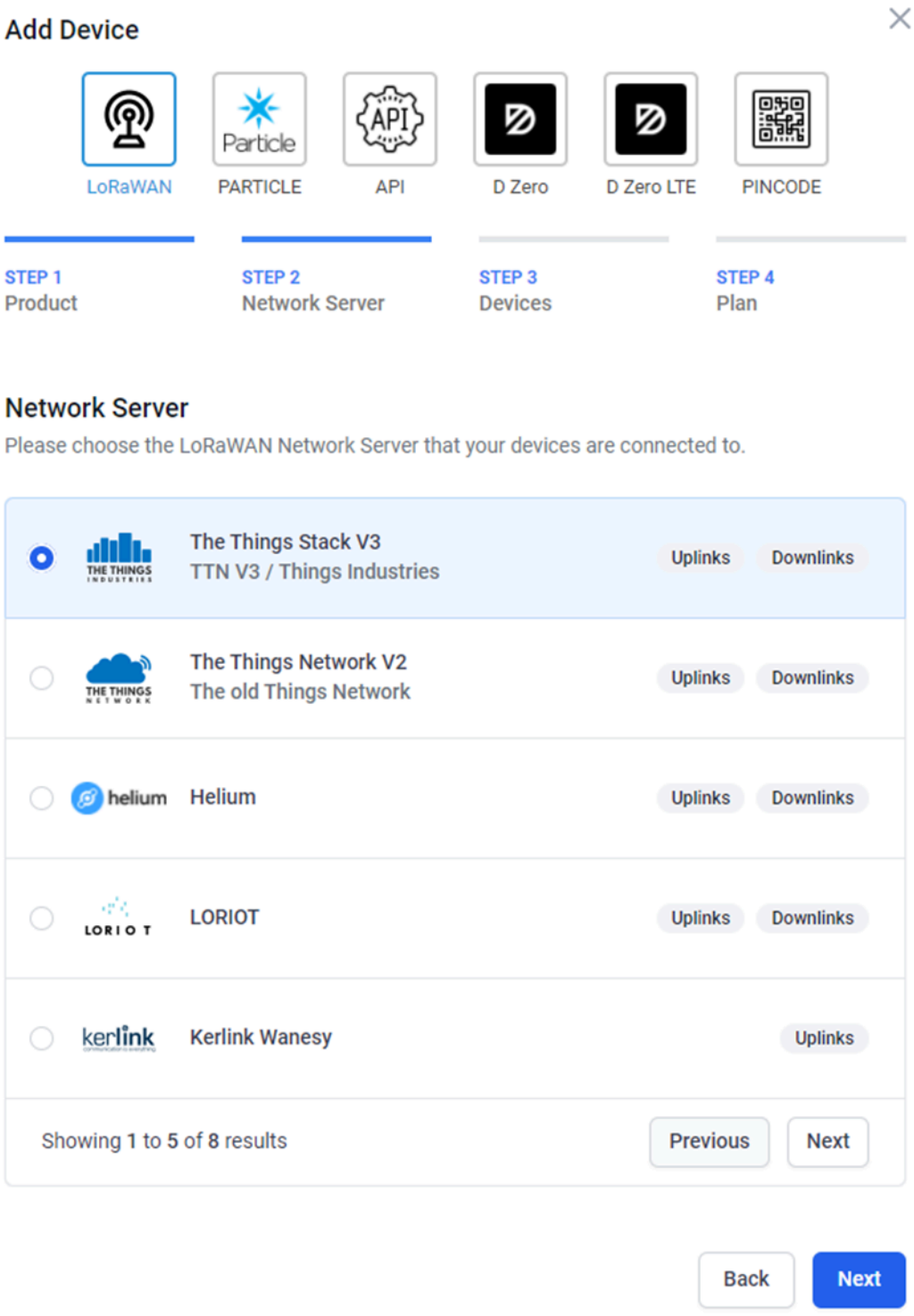

Register end device
From The LoRaWAN Device Repository
Manually
Basic settings
End device ID's, Name and Description
Network layer settings
Frequency plan, regional parameters, end device class and session keys.
3
Join settings
Root keys, NetID and kek labels.
Root keys
AppKey *
BD 72 1D AC F3 CC AB 67 72 8D 7A F5 4D DF 30 8B
Advanced settings
Network layer settings
Add end device

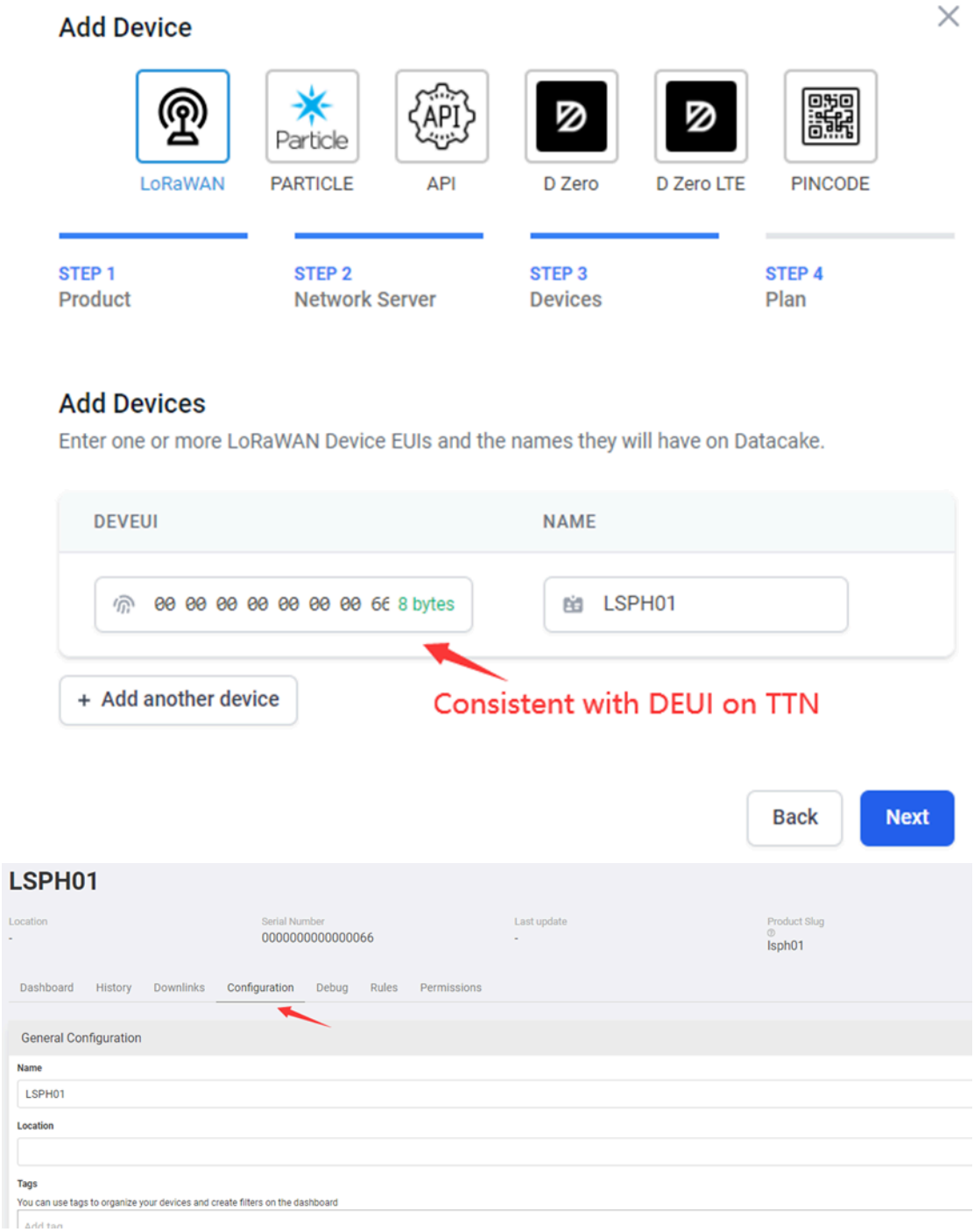

Overview
End devices
Live data
Payload formatters
Integrations
Collaborators
API keys
General settings
Hide sidebar
Overview
Live data
Messaging
Location
Payload formatters
Claiming
General settings
Uplink
Downlink
These payload formatters are executed on uplink messages from this end device and take precedence over application level payload formatters.
Formatter type
Use application payload formatter
None
Javascript
GRPC service
CayenneLPP
Repository
Formatter parameter
function decodeUplink(input) {
return {
data: {
bytes: input.bytes
},
warnings: [],
errors: []
};
}
Save changes

Choose webhook template
ubidots
Ubidots
Integrate with Ubidots over UbiFunctions
Datacake
Send data to Datacake via TTI adapter
TagoIO
TagoIO
Integrate with TagoIO
Akenza
Akenza Core
Integrate with Akenza Core
ThingSpeak
Qubitro
thethings.iO
MQTT
Webhooks
Pub/Subs
Storage Integration
AWS IoT
LoRa Cloud

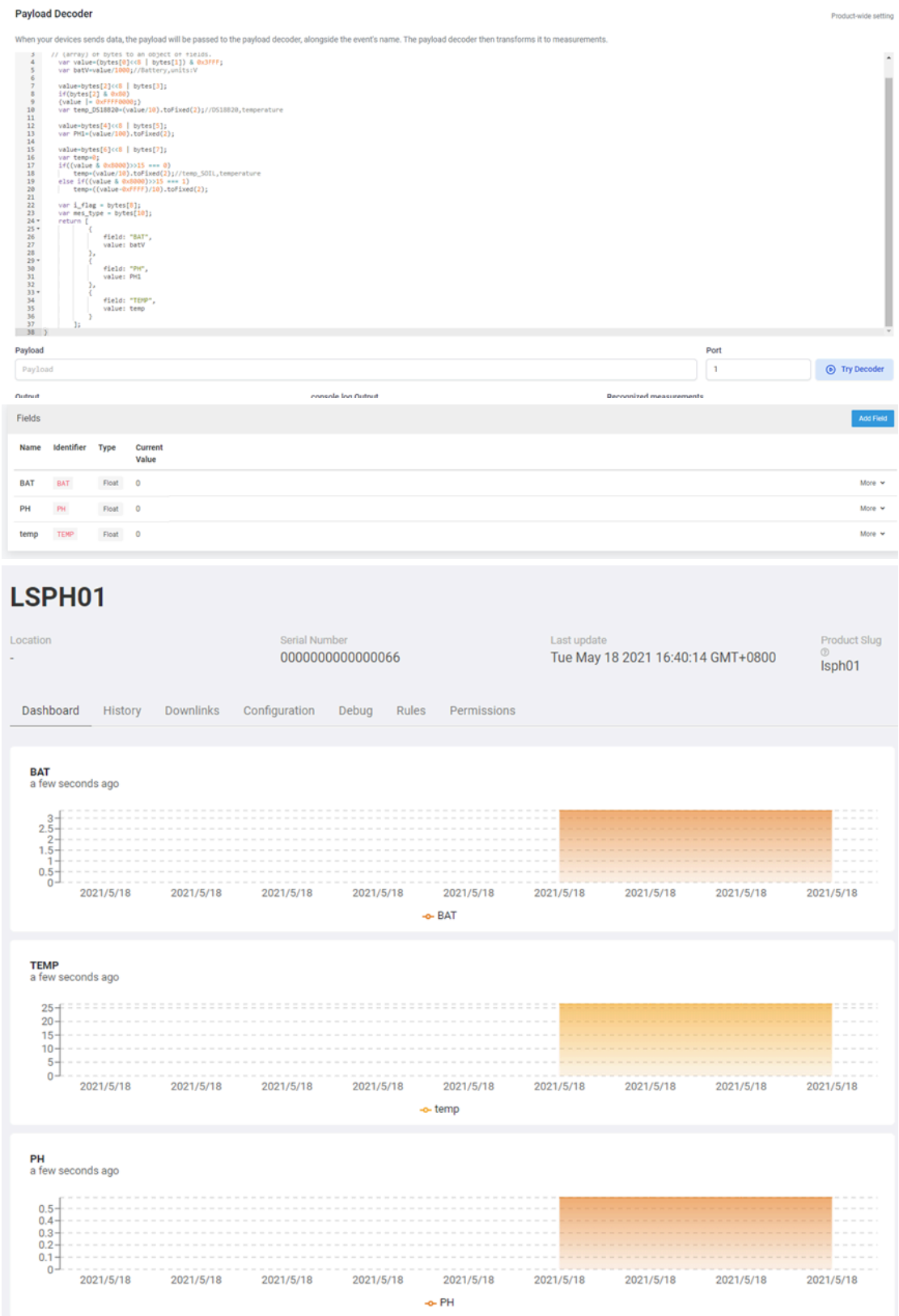

Applications > lgt92test > Webhooks > Add > Datacake
Add custom webhook
Template information
Datacake
Send data to Datacake via TTI adapter
About Datacake | Documentation
Template settings
Webhook ID *
my-new-datacake-webhook
Token *
Datacake API Token
Create datacake webhook


Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Datacake Product
You can add devices to an existing product on Datacake, create a new empty product or start with one of the templates. Products allow you to share the same configuration (fields, dashboard and more) between devices.
New Product from template
Create new product from a template
Existing Product
Add devices to an existing product
New Product
Create new empty product
New Product
If your device is not available as a template, you can start with an empty device. You will have to create the device definition (fields, dashboard) and provide the payload decoder in the device's configuration.
Product Name
LSPH01
Next

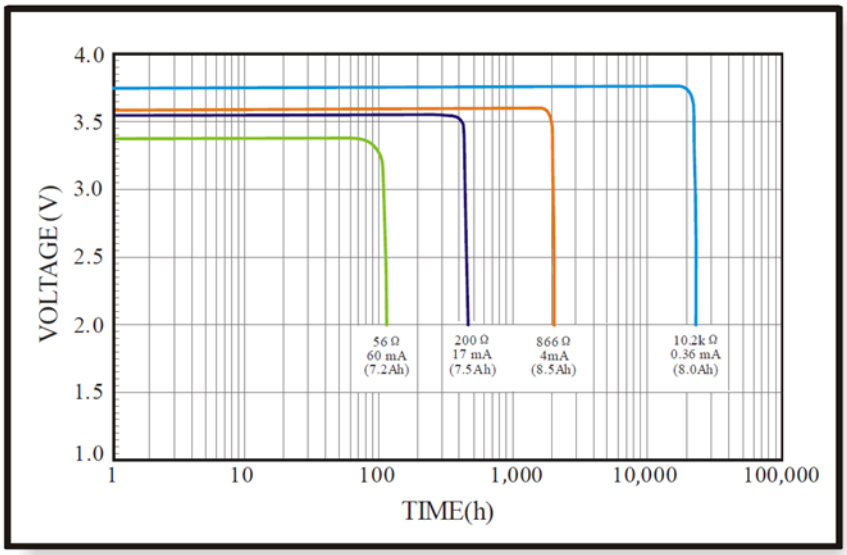

Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Network Server
Please choose the LoRaWAN Network Server that your devices are connected to.
The Things Stack V3
TTN V3 / Things Industries
Uplinks
Downlinks
The Things Network V2
The old Things Network
Uplinks
Downlinks
Helium
Uplinks
Downlinks
LORIOT
Uplinks
Downlinks
Kerlink Wanesy
Uplinks
Showing 1 to 5 of 8 results
Previous
Next
Back
Next

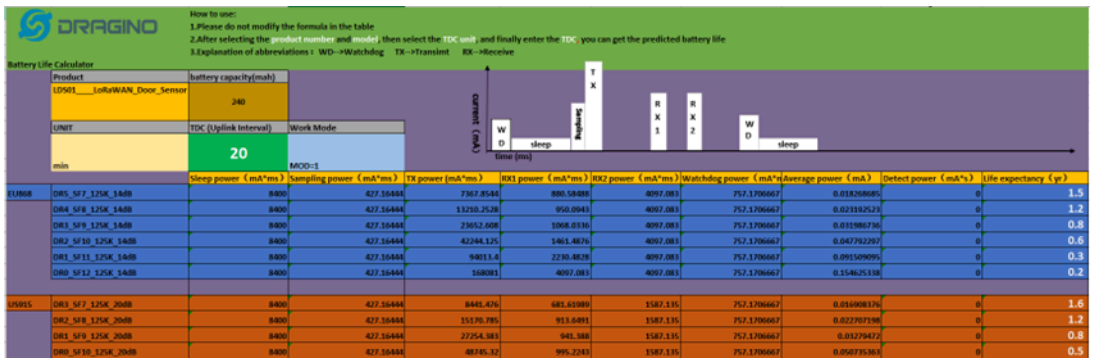

Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Add Devices
Enter one or more LoRaWAN Device EUIs and the names they will have on Datacake.
DEVEUI
NAME
00 00 00 00 00 00 00 6E 8 bytes
LSPH01
+ Add another device
Consistent with DEUI on TTN
Back
Next

LSPH01
Location
-
Serial Number
0000000000000066
Last update
-
Product Slug
lsph01
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
General Configuration
Name
LSPH01
Location
Tags
You can use tags to organize your devices and create filters on the dashboard


Payload Decoder
Product-wide setting
When your devices sends data, the payload will be passed to the payload decoder, alongside the event's name. The payload decoder then transforms it to measurements.
// Payload Decoder
function Decoder(bytes, port) {
// Decode an uplink message from a buffer
// (array) of bytes to an object of fields.
var value=(bytes[0]<<8 | bytes[1]) & 0x3FFF;
var batV=value/1000;//Battery,units:V
value=bytes[2]<<8 | bytes[3];
if(bytes[2] & 0x80)
{value |= 0xFFFF0000;}
var temp_DS18B20=(value/10).toFixed(2);//DS18B20,temperature
value=bytes[4]<<8 | bytes[5];
var PH1=(value/100).toFixed(2);
value=bytes[6]<<8 | bytes[7];
var temp=0;
if((value & 0x8000)>>15 === 0)
temp=(value/10).toFixed(2);//temp_SOIL,temperature
else if((value & 0x8000)>>15 === 1)
temp=((value-0xFFFF)/10).toFixed(2);
var i_flag = bytes[8];
var mes_type = bytes[10];
return [
{
field: "BAT",
value: batV
},
{
field: "PH",
value: PH1
},
{
field: "TEMP",
value: temp
}
];
}
Payload
Payload
Port
1
Try Decoder
Output
console log Output
Recognized measurements
Fields
Add Field
Name
Identifier
Type
Current Value
BAT
BAT
Float
0
More
PH
PH
Float
0
More
temp
TEMP
Float
0
More
LSPH01
Location
-
Serial Number
0000000000000066
Last update
Tue May 18 2021 16:40:14 GMT+0800
Product Slug
lsph01
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
BAT
a few seconds ago
3
2.5
2
1.5
1
0.5
0
2021/5/18
BAT
TEMP
a few seconds ago
25
20
15
10
5
0
temp
PH
a few seconds ago
0.5
0.4
0.3
0.2
0.1
0
PH

1. Typical discharge profile at +20℃(Typical value)





DRAGINO

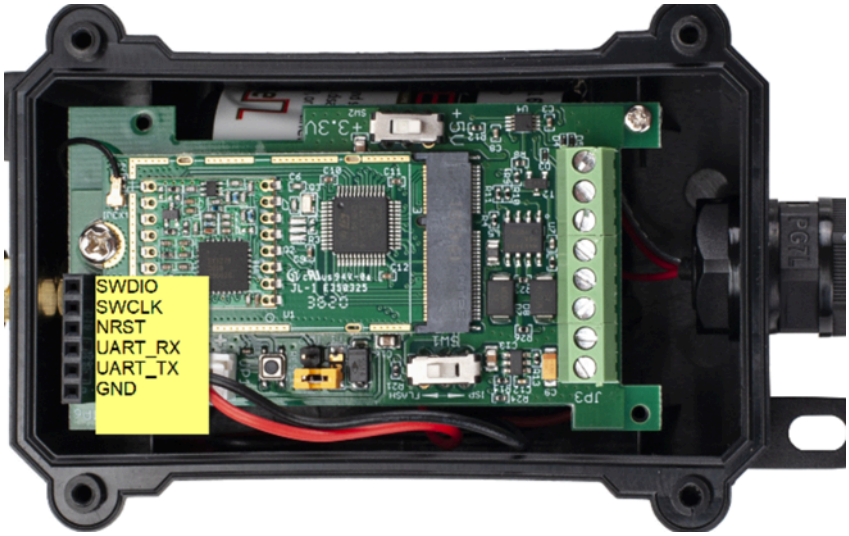
How to use:
1.Please do not modify the formula in the table
2.After selecting the product number and model, then select the TDC unit, and finally enter the TDC, you can get the predicted battery life
3.Explanation of abbreviations : WD-->Watchdog TX-->Transimt RX-->Receive

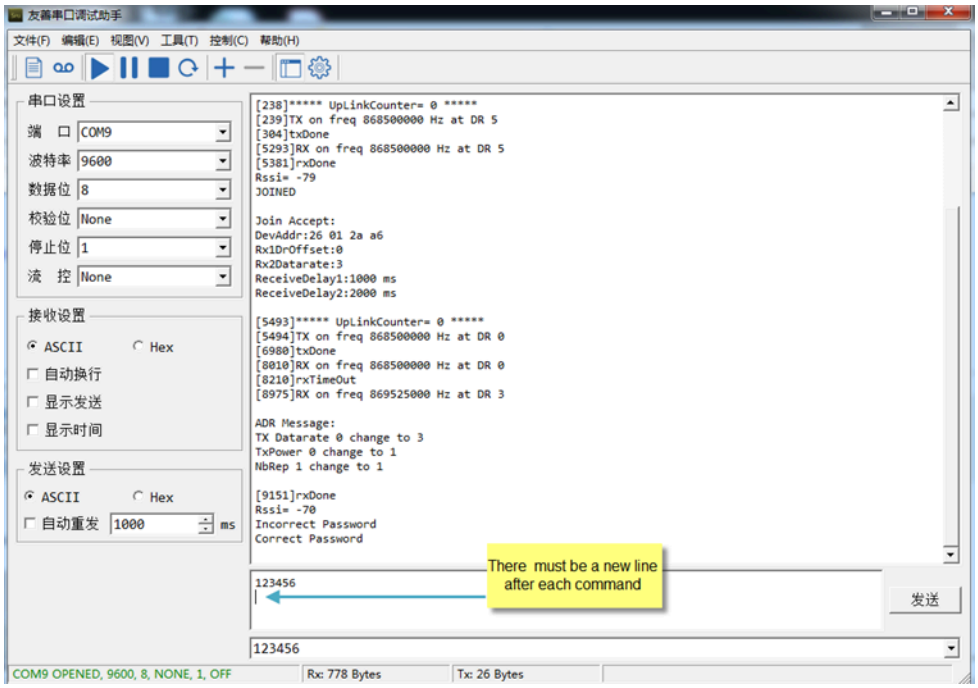
Battery Life Calculator

Product	battery capacity(mah)
LDS01___LoRaWAN_Door_Sensor	240

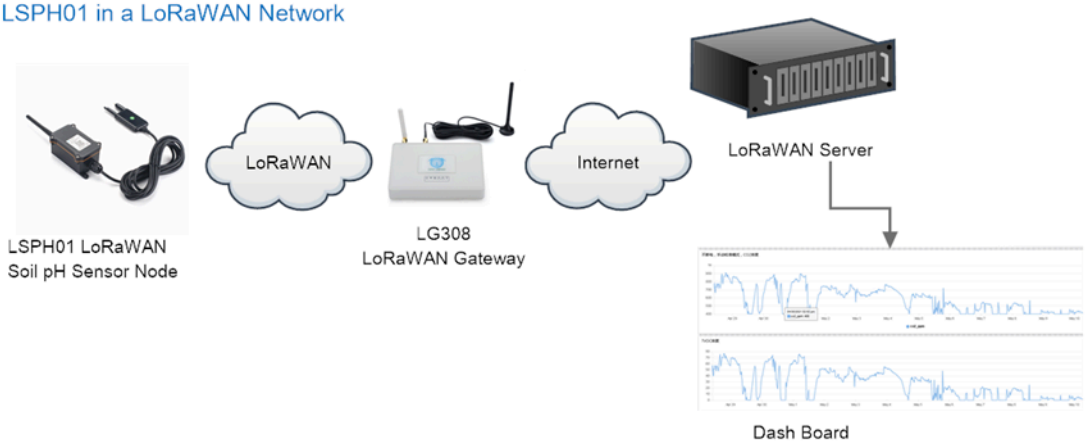
UNIT	TDC (Uplink Interval)	Work Mode
min	20	MOD=1

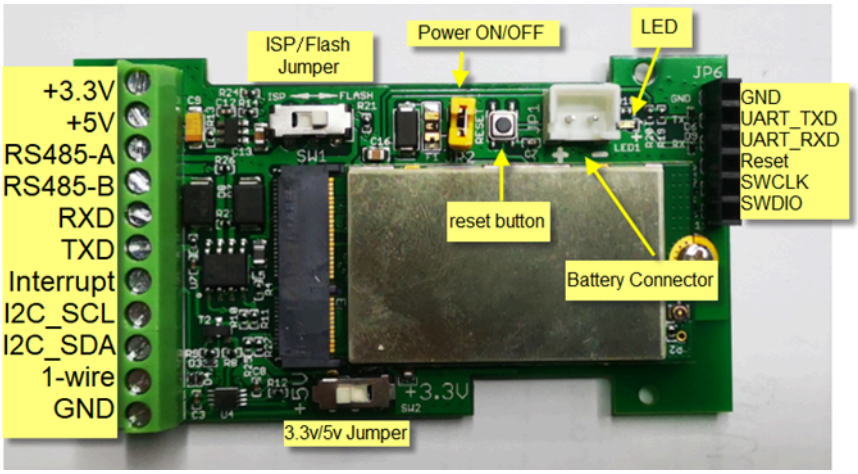
		Sleep power（mA*ms）	Sampling power（mA*ms）	TX power (mA*ms)	RX1 power（mA*ms）	RX2 power（mA*ms）	Watchdog power（mA*ms）	Average power（mA）	Detect power（mA*s）	Life expectancy（yr）
EU868	DR5_SF7_125K_14dB	8400	427.16444	7367.8544	880.58488	4097.083	757.1706667	0.018268685	0	1.5
	DR4_SF8_125K_14dB	8400	427.16444	13250.2528	950.0943	4097.083	757.1706667	0.023192523	0	1.2
	DR3_SF9_125K_14dB	8400	427.16444	23652.608	1068.0336	4097.083	757.1706667	0.031986736	0	0.8
	DR2_SF10_125K_14dB	8400	427.16444	42244.125	1461.4876	4097.083	757.1706667	0.047792297	0	0.6
	DR1_SF11_125K_14dB	8400	427.16444	94013.4	2230.4828	4097.083	757.1706667	0.091509095	0	0.3
	DR0_SF12_125K_14dB	8400	427.16444	168081	4097.083	4097.083	757.1706667	0.154625338	0	0.2
US915	DR3_SF7_125K_20dB	8400	427.16444	8441.476	681.61989	1587.135	757.1706667	0.016908176	0	1.6
	DR2_SF8_125K_20dB	8400	427.16444	15170.785	913.6491	1587.135	757.1706667	0.022707198	0	1.2
	DR1_SF9_125K_20dB	8400	427.16444	27254.383	941.388	1587.135	757.1706667	0.03279472	0	0.8
	DR0_SF10_125K_20dB	8400	427.16444	48745.32	995.2243	1587.135	757.1706667	0.050735363	0	0.5


SWDIO
SWCLK
NRST
UART_RX
UART_TX
GND

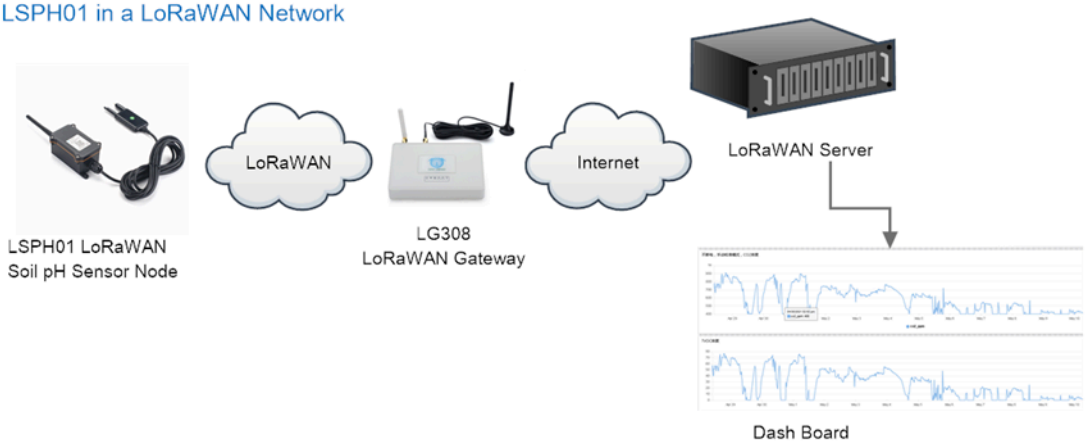

友善串口调试助手
文件(F) 编辑(E) 视图(V) 工具(T) 控制(C) 帮助(H)
串口设置
端 口 COM9
波特率 9600
数据位 8
校验位 None
停止位 1
流 控 None
接收设置
ASCII Hex
自动换行
显示发送
显示时间
发送设置
ASCII Hex
自动重发 1000 ms
[238]***** UpLinkCounter= 0 *****
[239]TX on freq 868500000 Hz at DR 5
[304]txDone
[5293]RX on freq 868500000 Hz at DR 5
[5381]rxDone
Rssi= -79
JOINED
Join Accept:
DevAddr:26 01 2a a6
Rx1DrOffset:0
Rx2Datarate:3
ReceiveDelay1:1000 ms
ReceiveDelay2:2000 ms
[5493]***** UpLinkCounter= 0 *****
[5494]TX on freq 868500000 Hz at DR 0
[6980]txDone
[8010]RX on freq 868500000 Hz at DR 0
[8210]rxTimeOut
[8975]RX on freq 869525000 Hz at DR 3
ADR Message:
TX Datarate 0 change to 3
TxPower 0 change to 1
NbRep 1 change to 1
[9151]rxDone
Rssi= -70
Incorrect Password
Correct Password
There must be a new line after each command
123456
发送
123456
COM9 OPENED, 9600, 8, NONE, 1, OFF
Rx: 778 Bytes
Tx: 26 Bytes

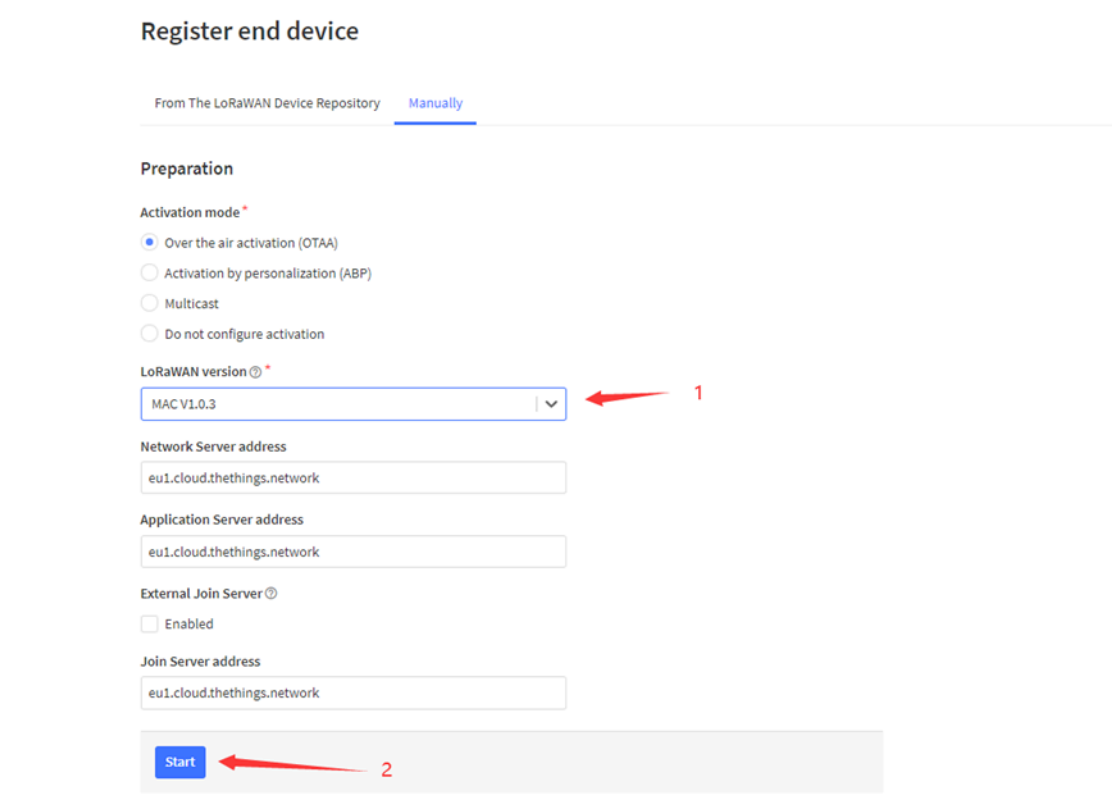
LSPH01 in a LoRaWAN Network

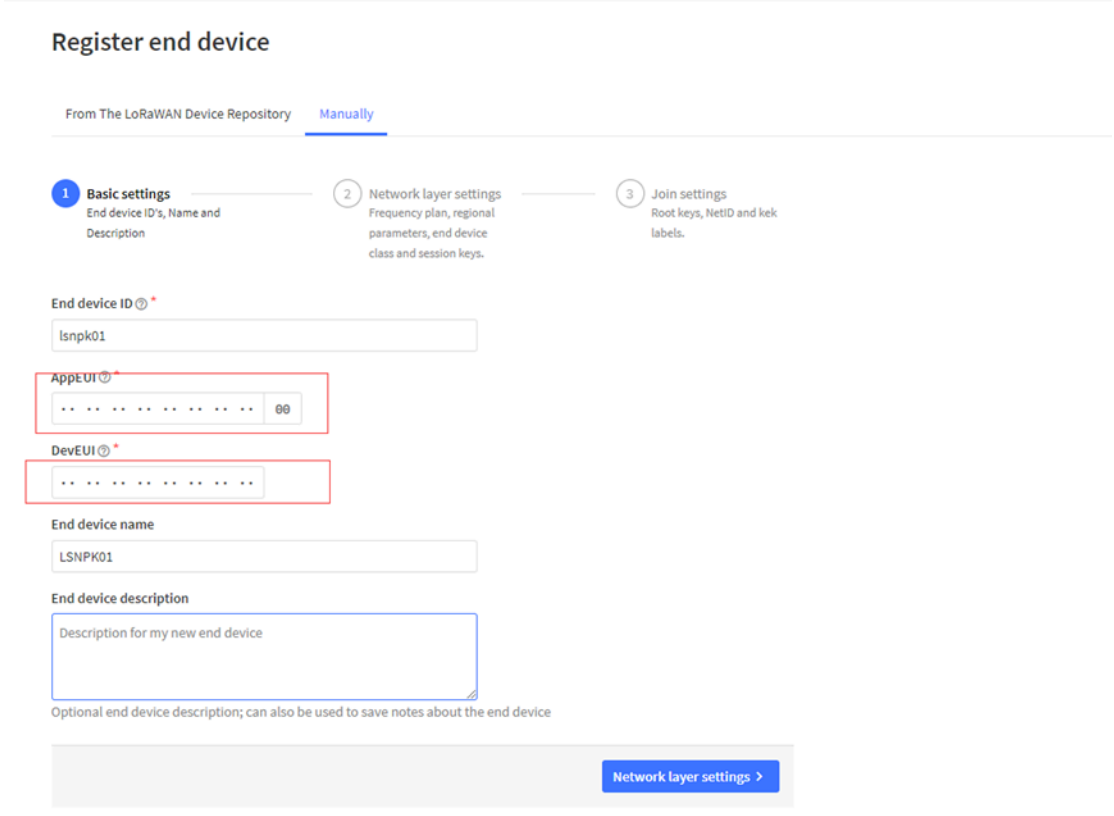




LSPH01 in a LoRaWAN Network




Register end device
From The LoRaWAN Device Repository
Manually
Preparation
Activation mode *
Over the air activation (OTAA)
Activation by personalization (ABP)
Multicast
Do not configure activation
LoRaWAN version *
MAC V1.0.3
1
Network Server address
eu1.cloud.thethings.network
Application Server address
eu1.cloud.thethings.network
External Join Server
Enabled
Join Server address
eu1.cloud.thethings.network
Start
2


Register end device
From The LoRaWAN Device Repository
Manually
1 Basic settings
End device ID's, Name and Description
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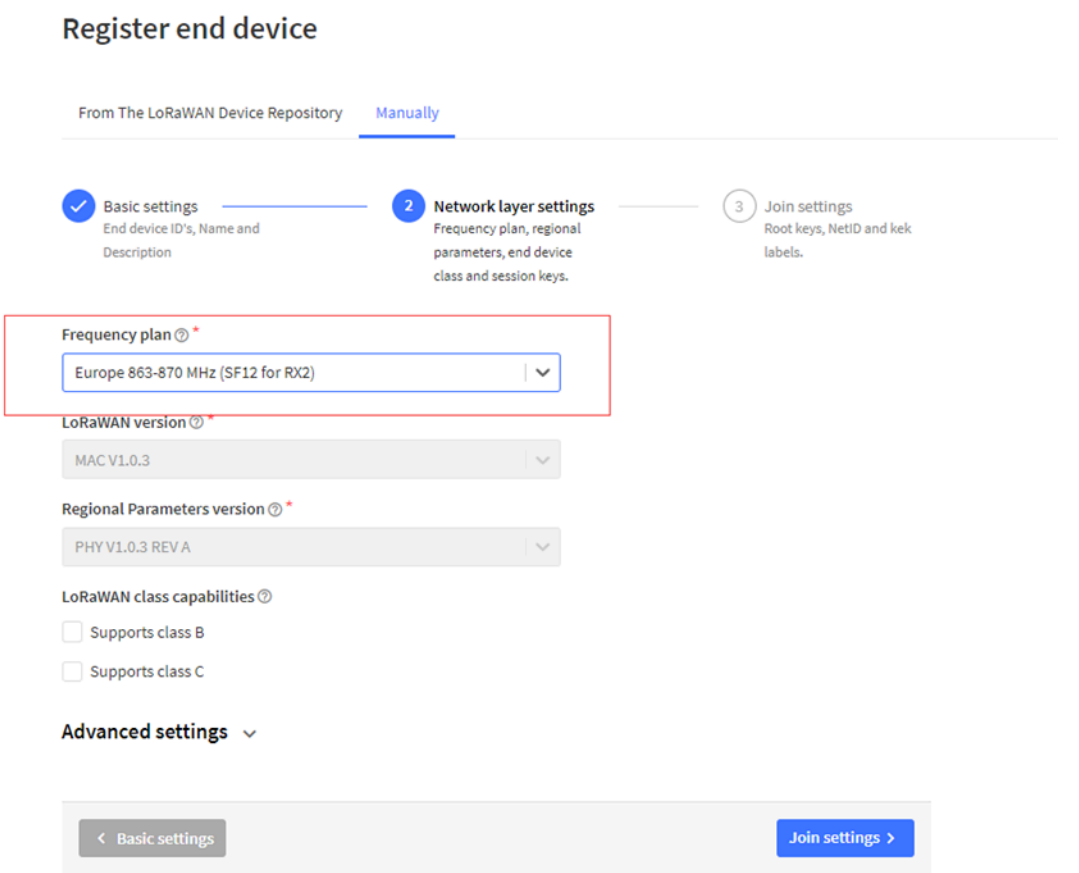
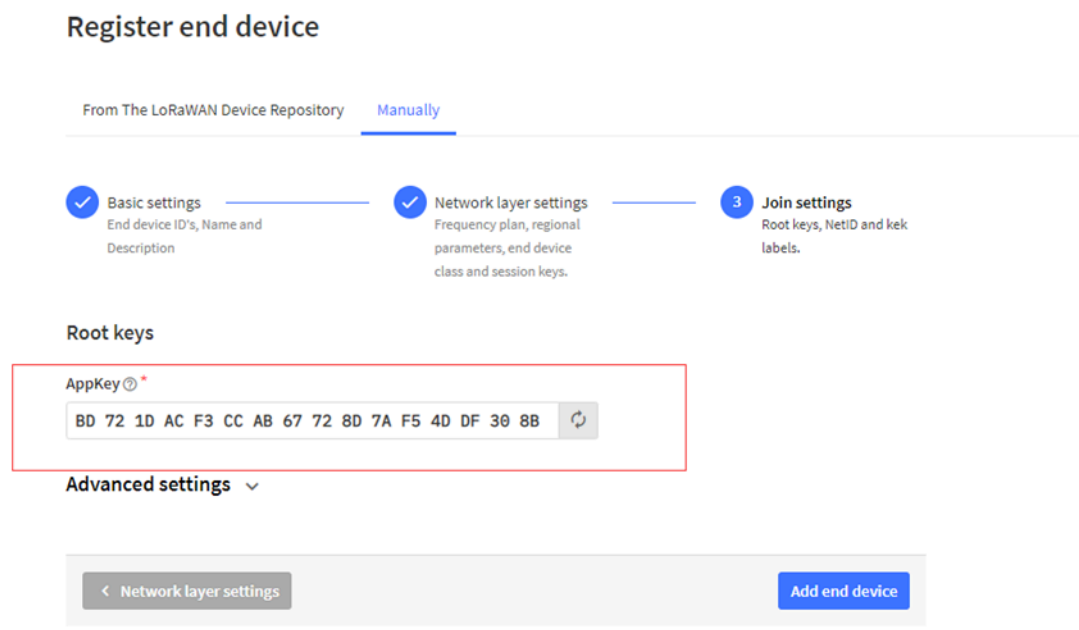
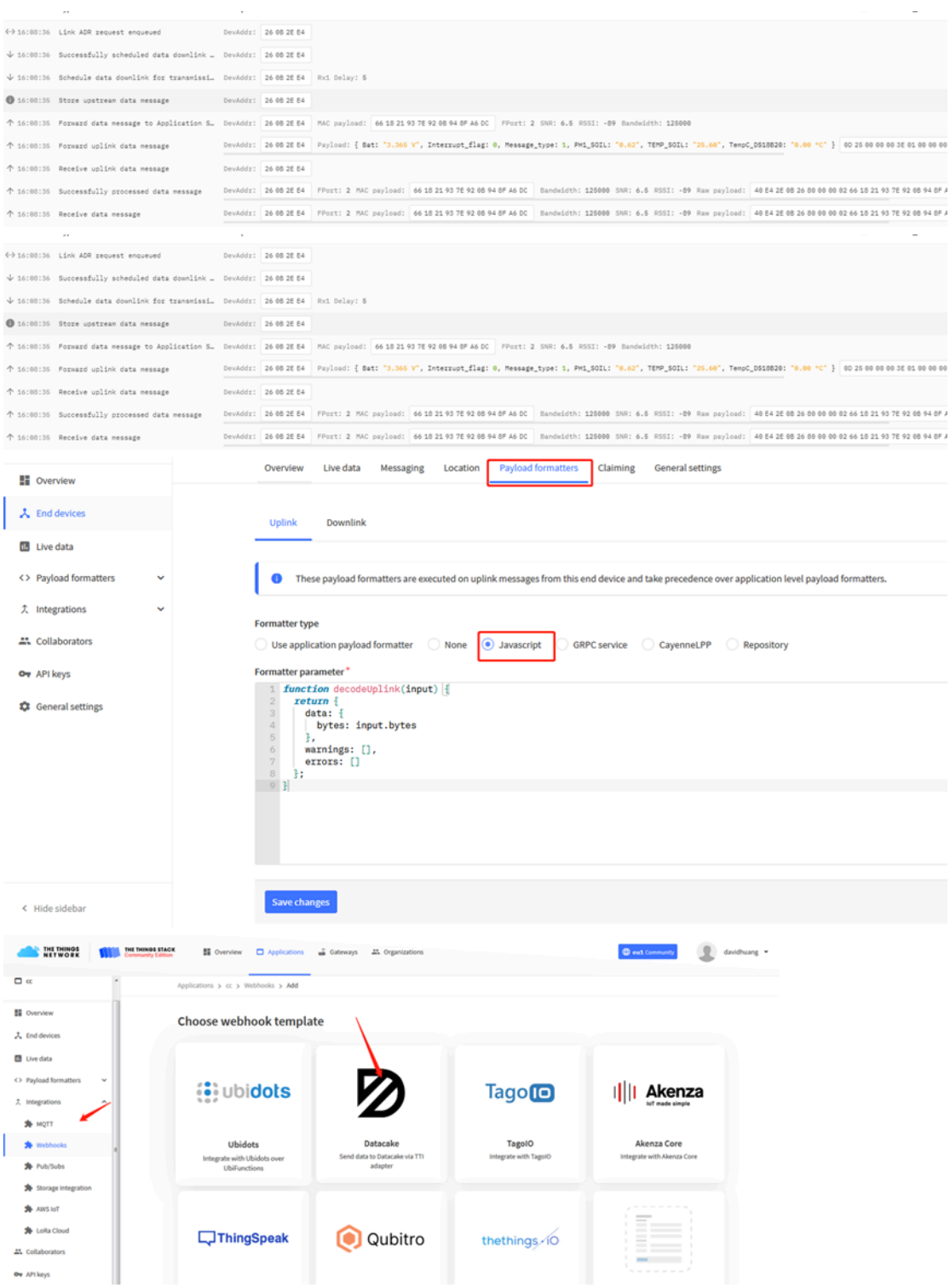
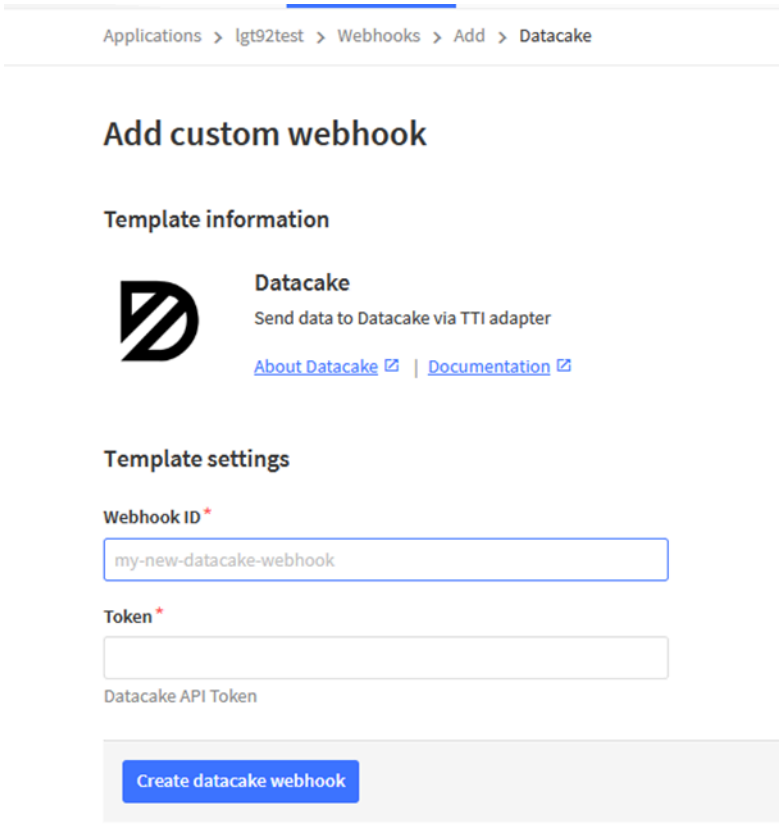
Frequency plan, regional parameters, end device class and session keys.
3 Join settings
Root keys, NetID and kek labels.
End device ID *
lsnpk01
AppEUI *
00
DevEUI *
End device name
LSNPK01
End device description
Description for my new end device
Optional end device description; can also be used to save notes about the end device
Network layer settings >

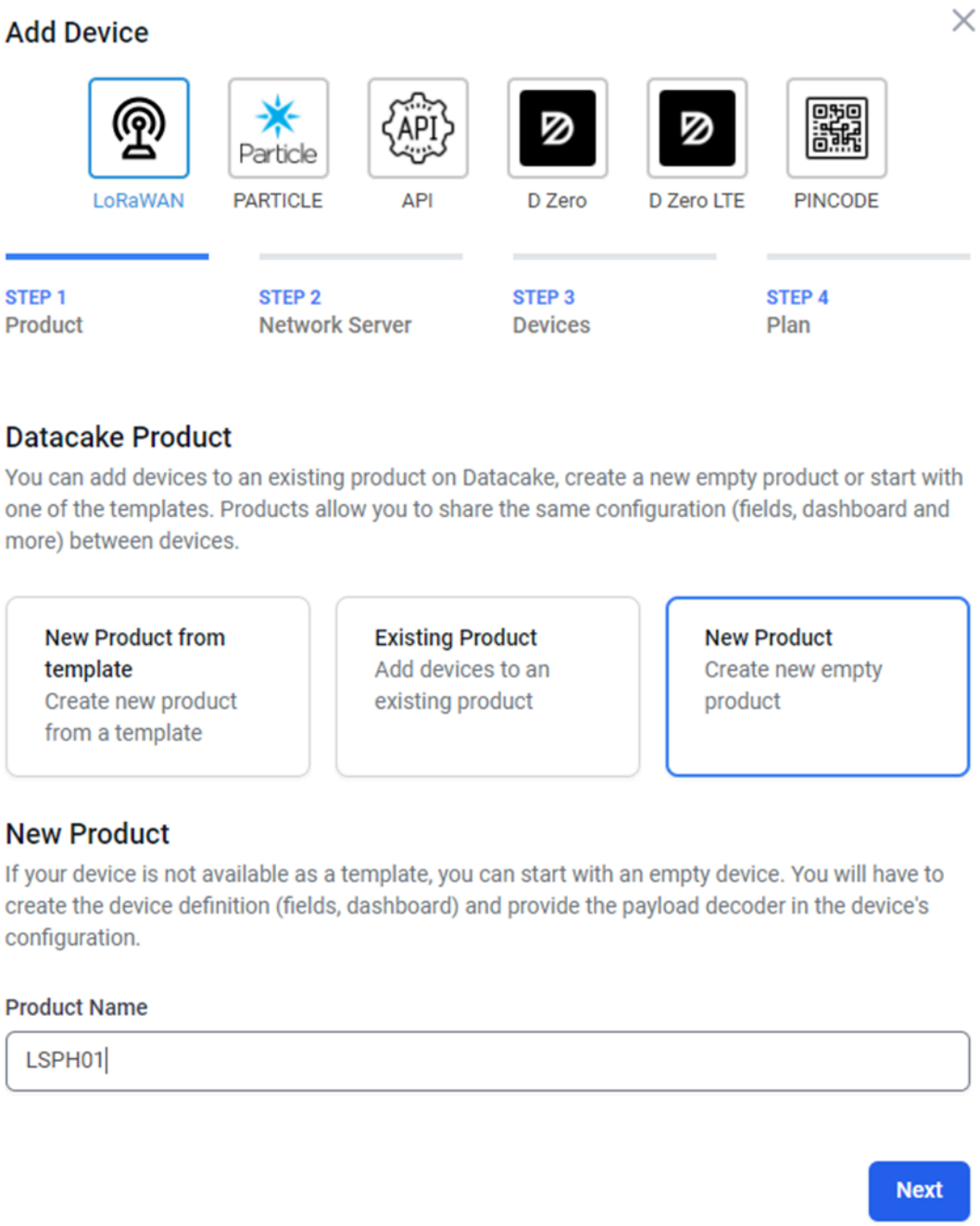

Register end device
From The LoRaWAN Device Repository
Manually
Basic settings
End device ID's, Name and Description
2
Network layer settings
Frequency plan, regional parameters, end device class and session keys.
3
Join settings
Root keys, NetID and kek labels.
Frequency plan *
Europe 863-870 MHz (SF12 for RX2)
LoRaWAN version *
MAC V1.0.3
Regional Parameters version *
PHY V1.0.3 REV A
LoRaWAN class capabilities
Supports class B
Supports class C
Advanced settings
Basic settings
Join settings

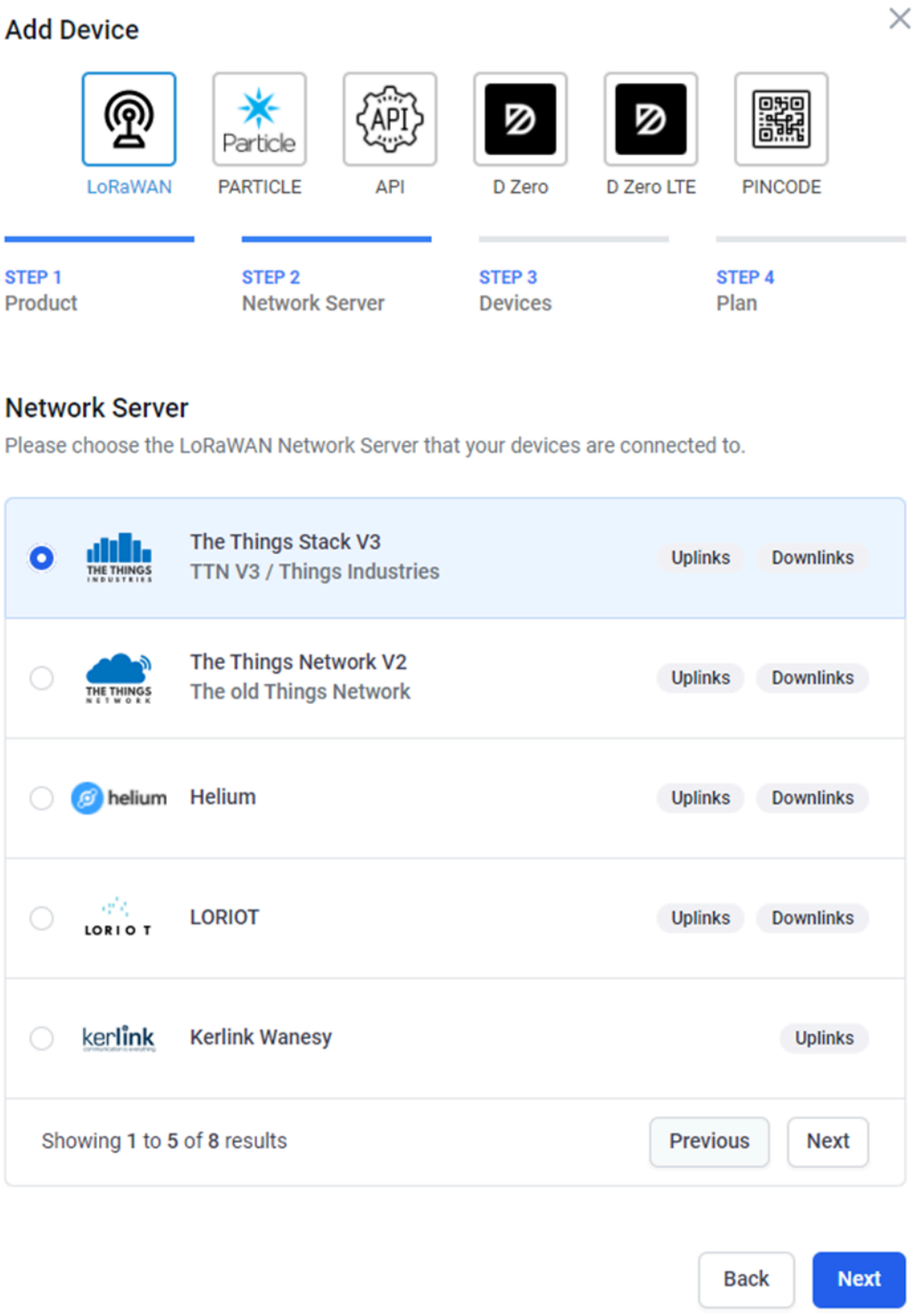

Register end device
From The LoRaWAN Device Repository
Manually
Basic settings
End device ID's, Name and Description
Network layer settings
Frequency plan, regional parameters, end device class and session keys.
3
Join settings
Root keys, NetID and kek labels.
Root keys
AppKey *
BD 72 1D AC F3 CC AB 67 72 8D 7A F5 4D DF 30 8B
Advanced settings
Network layer settings
Add end device

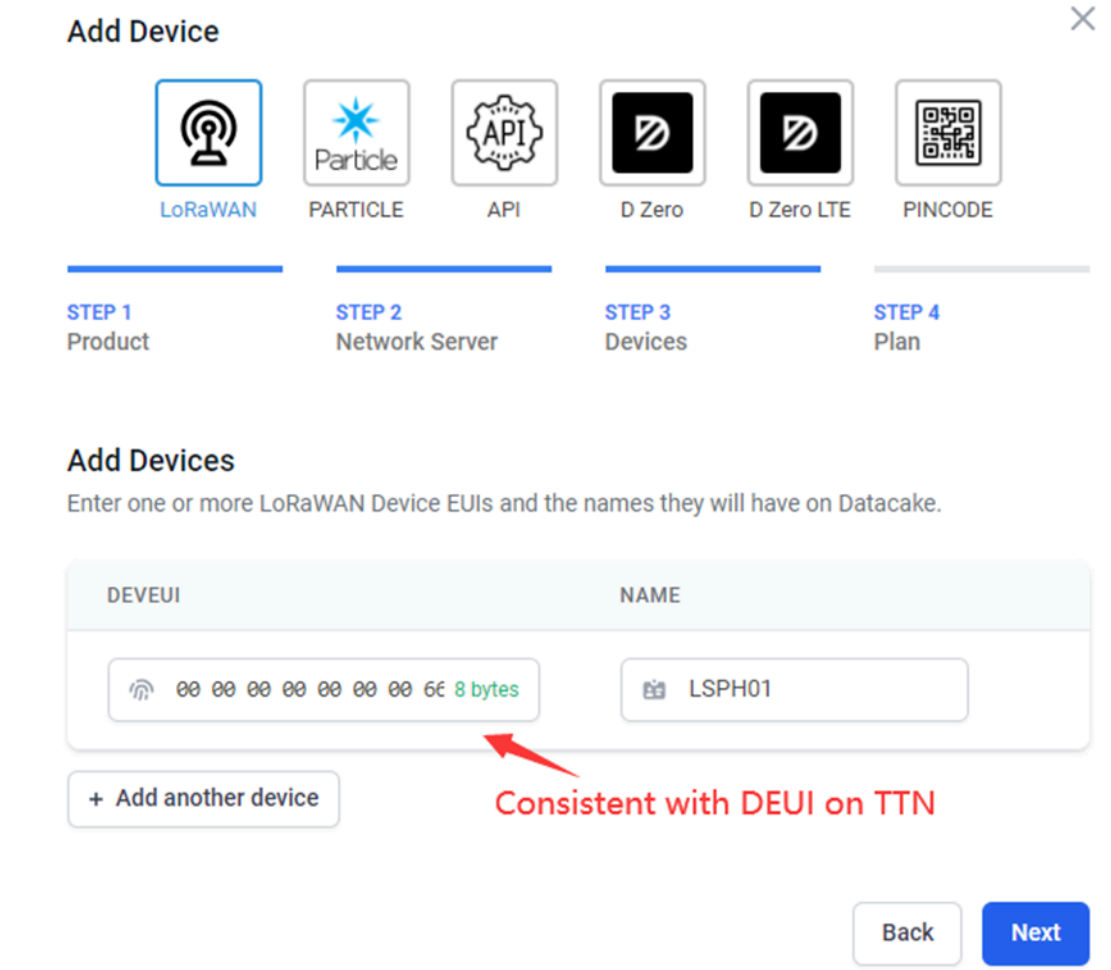

Overview
End devices
Live data
Payload formatters
Integrations
Collaborators
API keys
General settings
Hide sidebar
Overview
Live data
Messaging
Location
Payload formatters
Claiming
General settings
Uplink
Downlink
These payload formatters are executed on uplink messages from this end device and take precedence over application level payload formatters.
Formatter type
Use application payload formatter
None
Javascript
GRPC service
CayenneLPP
Repository
Formatter parameter
function decodeUplink(input) {
return {
data: {
bytes: input.bytes
},
warnings: [],
errors: []
};
}
Save changes

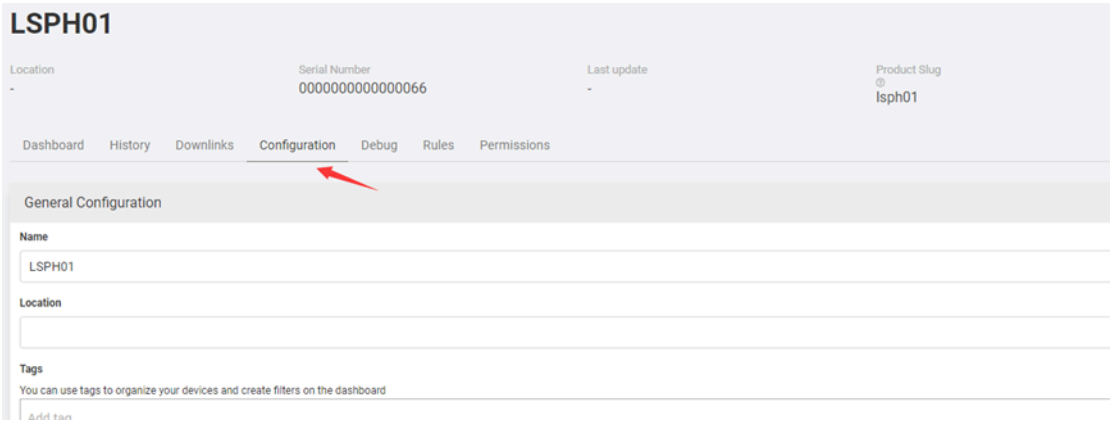
Choose webhook template
Ubidots
Datacake
TagoIO
Akenza
ThingSpeak
Qubitro
thethings.iO

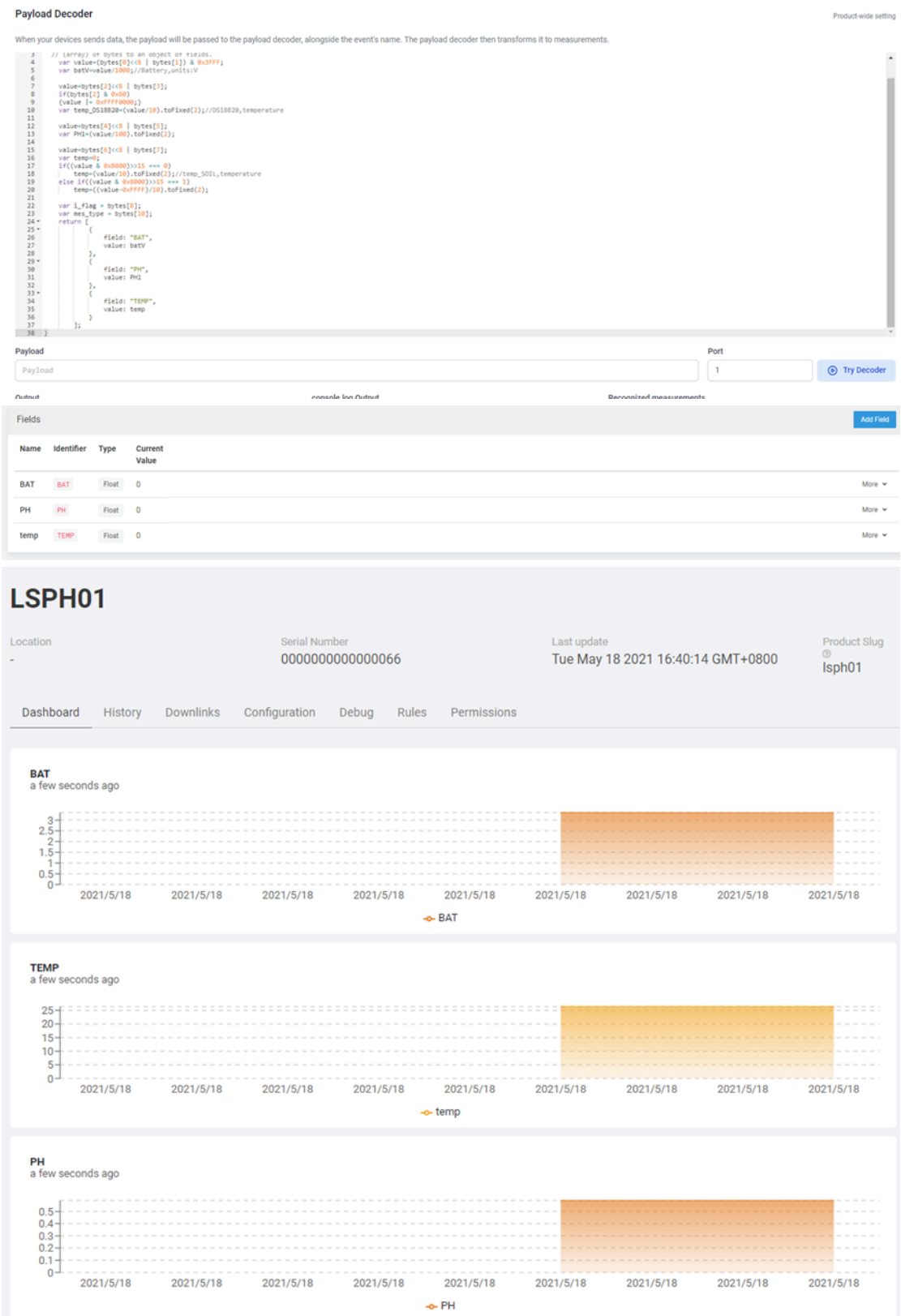

Applications > lgt92test > Webhooks > Add > Datacake
Add custom webhook
Template information
Datacake
Send data to Datacake via TTI adapter
About Datacake | Documentation
Template settings
Webhook ID *
my-new-datacake-webhook
Token *
Datacake API Token
Create datacake webhook


Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Datacake Product
You can add devices to an existing product on Datacake, create a new empty product or start with one of the templates. Products allow you to share the same configuration (fields, dashboard and more) between devices.
New Product from template
Create new product from a template
Existing Product
Add devices to an existing product
New Product
Create new empty product
New Product
If your device is not available as a template, you can start with an empty device. You will have to create the device definition (fields, dashboard) and provide the payload decoder in the device's configuration.
Product Name
LSPH01
Next

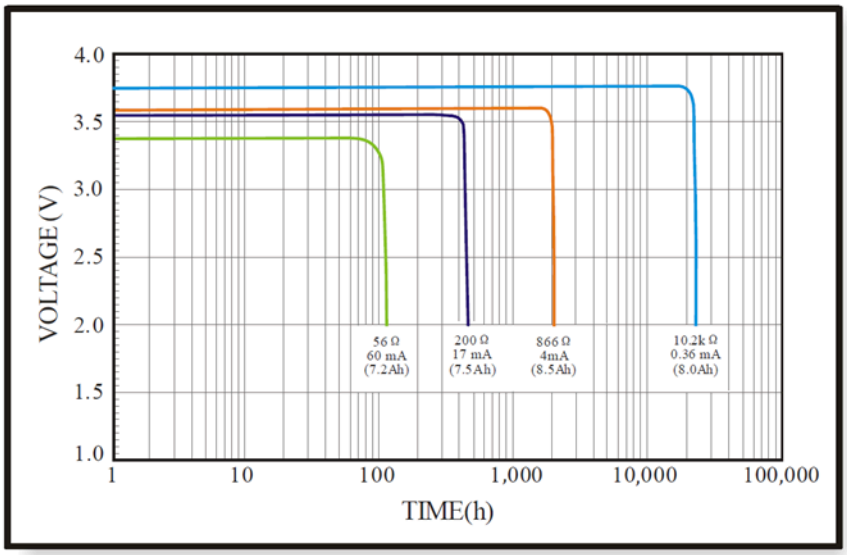

Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Network Server
Please choose the LoRaWAN Network Server that your devices are connected to.
The Things Stack V3
TTN V3 / Things Industries
Uplinks
Downlinks
The Things Network V2
The old Things Network
Uplinks
Downlinks
Helium
Uplinks
Downlinks
LORIOT
Uplinks
Downlinks
Kerlink Wanesy
Uplinks
Showing 1 to 5 of 8 results
Previous
Next
Back
Next

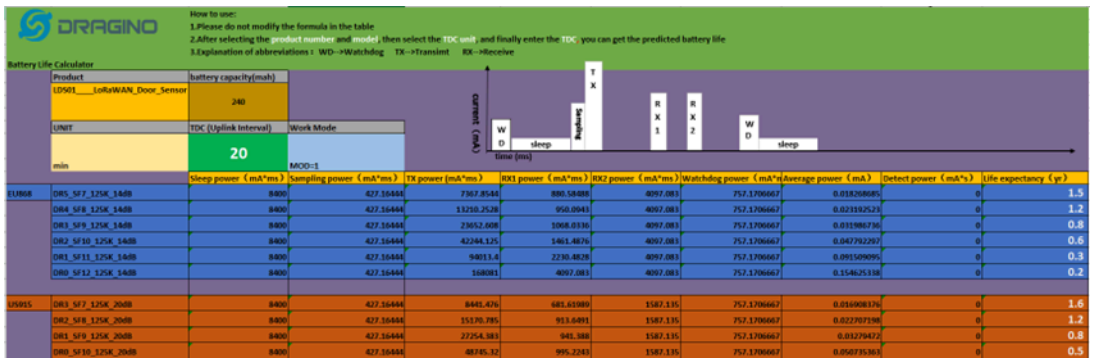

Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Add Devices
Enter one or more LoRaWAN Device EUIs and the names they will have on Datacake.
DEVEUI
NAME
00 00 00 00 00 00 00 6E 8 bytes
LSPH01
+ Add another device
Consistent with DEUI on TTN
Back
Next


LSPH01
Location
-
Serial Number
0000000000000066
Last update
-
Product Slug
lsph01
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
General Configuration
Name
LSPH01
Location
Tags
You can use tags to organize your devices and create filters on the dashboard


Payload Decoder
Product-wide setting
When your devices sends data, the payload will be passed to the payload decoder, alongside the event's name. The payload decoder then transforms it to measurements.
// (array) or bytes to an object or fields.
function Decoder(bytes, port) {
var value=(bytes[0]<<8 | bytes[1]) & 0x3FFF;
var batV=value/1000;//Battery,units:V
value=bytes[2]<<8 | bytes[3];
if(bytes[2] & 0x80)
{value |= 0xFFFF0000;}
var temp_DS18B20=(value/10).toFixed(2);//DS18B20,temperature
value=bytes[4]<<8 | bytes[5];
var PH1=(value/100).toFixed(2);
value=bytes[6]<<8 | bytes[7];
var temp=0;
if((value & 0x8000)>>15 === 0)
temp=(value/10).toFixed(2);//temp_SOIL,temperature
else if((value & 0x8000)>>15 === 1)
temp=((value-0xFFFF)/10).toFixed(2);
var i_flag = bytes[8];
var mes_type = bytes[10];
return [
{
field: "BAT",
value: batV
},
{
field: "PH",
value: PH1
},
{
field: "TEMP",
value: temp
}
];
}
Payload
Payload
Port
1
Try Decoder
Output
console log Output
Recognized measurements
Fields
Add Field
Name
Identifier
Type
Current Value
BAT
BAT
Float
0
More
PH
PH
Float
0
More
temp
TEMP
Float
0
More
LSPH01
Location
-
Serial Number
0000000000000066
Last update
Tue May 18 2021 16:40:14 GMT+0800
Product Slug
lsph01
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
BAT
a few seconds ago
3
2.5
2
1.5
1
0.5
0
2021/5/18
BAT
TEMP
a few seconds ago
25
20
15
10
5
0
temp
PH
a few seconds ago
0.5
0.4
0.3
0.2
0.1
0
PH

1. Typical discharge profile at +20℃(Typical value)





DRAGINO

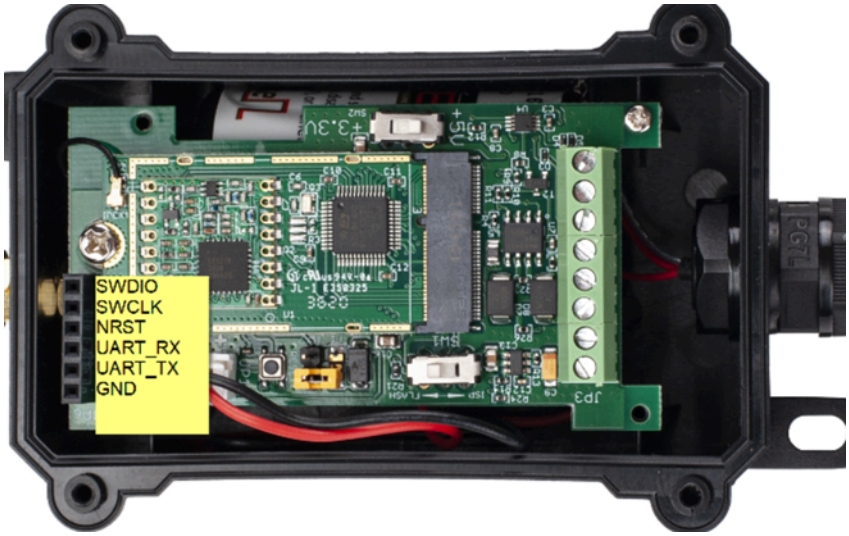
How to use:
1.Please do not modify the formula in the table
2.After selecting the product number and model, then select the TDC unit, and finally enter the TDC, you can get the predicted battery life
3.Explanation of abbreviations : WD-->Watchdog TX-->Transimt RX-->Receive

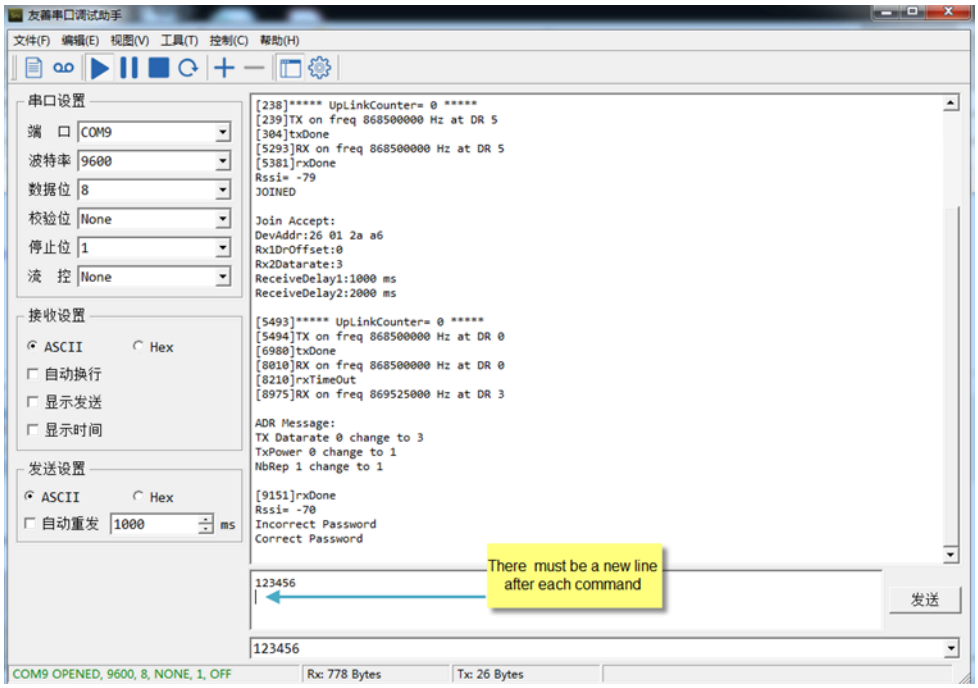
Battery Life Calculator

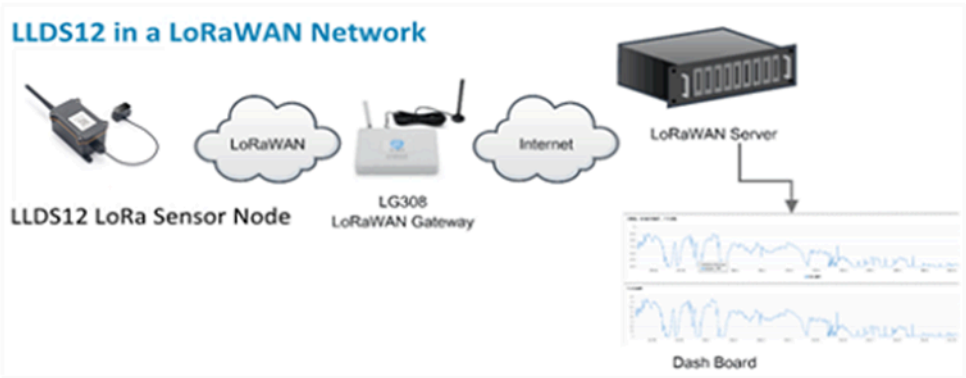
Product	battery capacity(mah)
LDS01___LoRaWAN_Door_Sensor	240

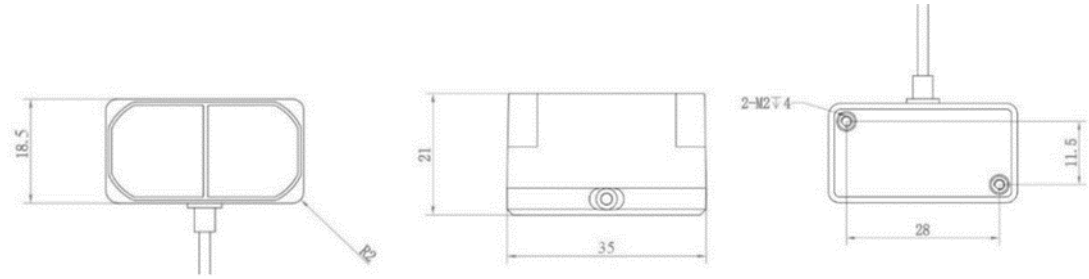
UNIT	TDC (Uplink Interval)	Work Mode
min	20	MOD=1

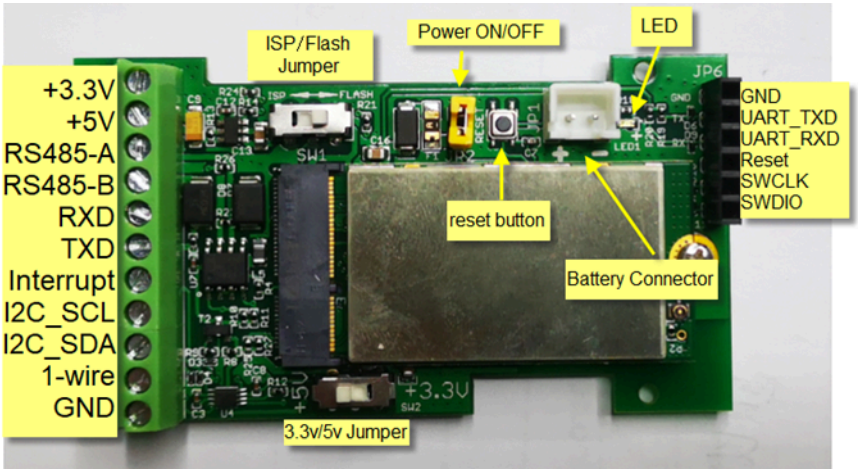
		Sleep power （mA*ms）	Sampling power （mA*ms）	TX power (mA*ms)	RX1 power （mA*ms）	RX2 power （mA*ms）	Watchdog power （mA*ms）	Average power （mA）	Detect power （mA*s）	Life expectancy （yr）
EU868	DR5_SF7_125K_14dB	8400	427.16444	7367.8544	880.58488	4097.083	757.1706667	0.018268685	0	1.5
	DR4_SF8_125K_14dB	8400	427.16444	13250.2528	950.0943	4097.083	757.1706667	0.023192523	0	1.2
	DR3_SF9_125K_14dB	8400	427.16444	23652.608	1068.0336	4097.083	757.1706667	0.031986736	0	0.8
	DR2_SF10_125K_14dB	8400	427.16444	42244.125	1461.4876	4097.083	757.1706667	0.047792297	0	0.6
	DR1_SF11_125K_14dB	8400	427.16444	94013.4	2230.4828	4097.083	757.1706667	0.091509095	0	0.3
	DR0_SF12_125K_14dB	8400	427.16444	168081	4097.083	4097.083	757.1706667	0.154625338	0	0.2
US915	DR3_SF7_125K_20dB	8400	427.16444	8441.476	681.61989	1587.135	757.1706667	0.016908176	0	1.6
	DR2_SF8_125K_20dB	8400	427.16444	15170.785	913.6491	1587.135	757.1706667	0.022707198	0	1.2
	DR1_SF9_125K_20dB	8400	427.16444	27254.383	941.388	1587.135	757.1706667	0.03279472	0	0.8
	DR0_SF10_125K_20dB	8400	427.16444	48745.32	995.2243	1587.135	757.1706667	0.050735363	0	0.5

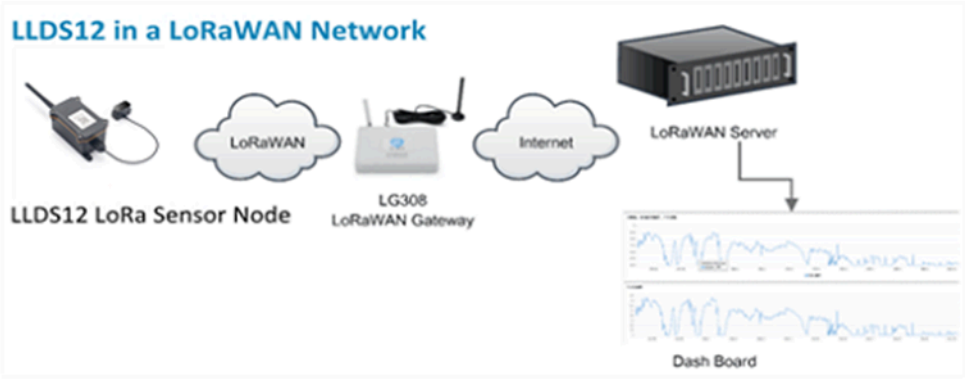

SWDIO
SWCLK
NRST
UART_RX
UART_TX
GND


友善串口调试助手
文件(F) 编辑(E) 视图(V) 工具(T) 控制(C) 帮助(H)
串口设置
端 口 COM9
波特率 9600
数据位 8
校验位 None
停止位 1
流 控 None
接收设置
ASCII Hex
自动换行
显示发送
显示时间
发送设置
ASCII Hex
自动重发 1000 ms
[238]***** UpLinkCounter= 0 *****
[239]TX on freq 868500000 Hz at DR 5
[304]txDone
[5293]RX on freq 868500000 Hz at DR 5
[5381]rxDone
Rssi= -79
JOINED
Join Accept:
DevAddr:26 01 2a a6
Rx1DrOffset:0
Rx2Datarate:3
ReceiveDelay1:1000 ms
ReceiveDelay2:2000 ms
[5493]***** UpLinkCounter= 0 *****
[5494]TX on freq 868500000 Hz at DR 0
[6980]txDone
[8010]RX on freq 868500000 Hz at DR 0
[8210]rxTimeOut
[8975]RX on freq 869525000 Hz at DR 3
ADR Message:
TX Datarate 0 change to 3
TxPower 0 change to 1
NbRep 1 change to 1
[9151]rxDone
Rssi= -70
Incorrect Password
Correct Password
There must be a new line after each command
123456
发送
123456
COM9 OPENED, 9600, 8, NONE, 1, OFF
Rx: 778 Bytes
Tx: 26 Bytes


LLDS12 in a LoRaWAN Network
LoRaWAN
Internet
LoRaWAN Server
LLDS12 LoRa Sensor Node
LG308
LoRaWAN Gateway
Dash Board







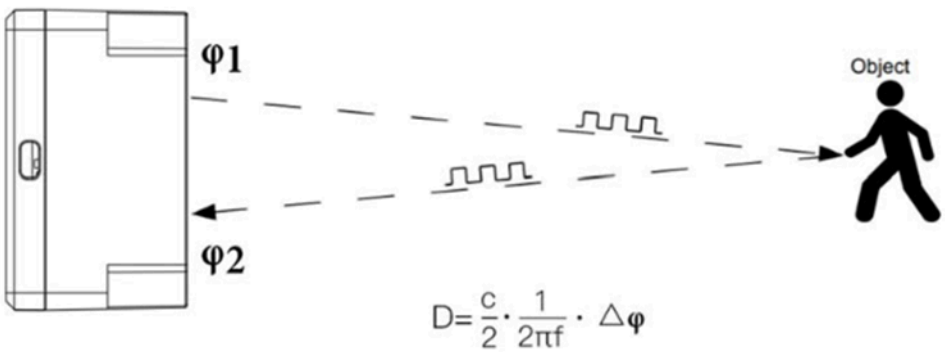


Figure 1 Schematics of TOF Principle

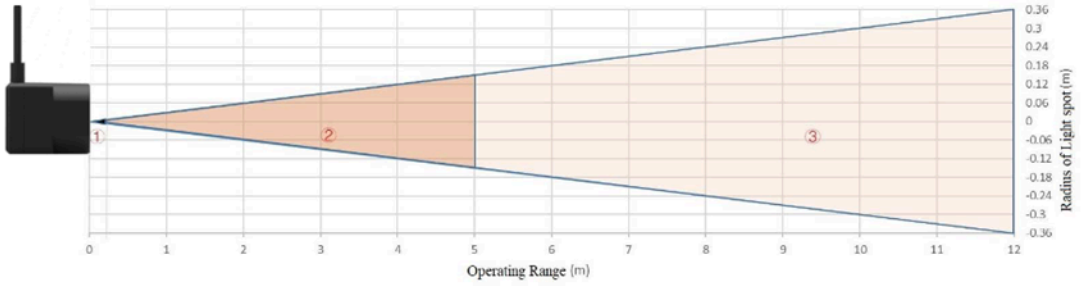
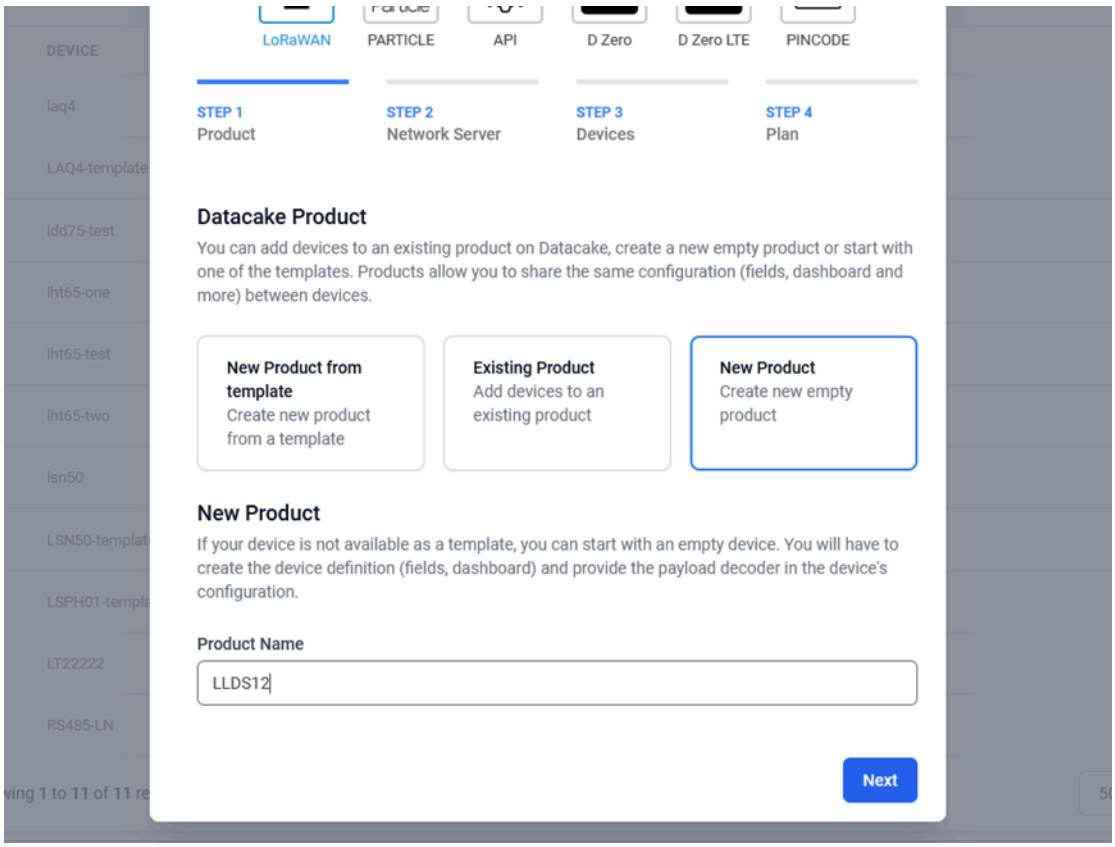


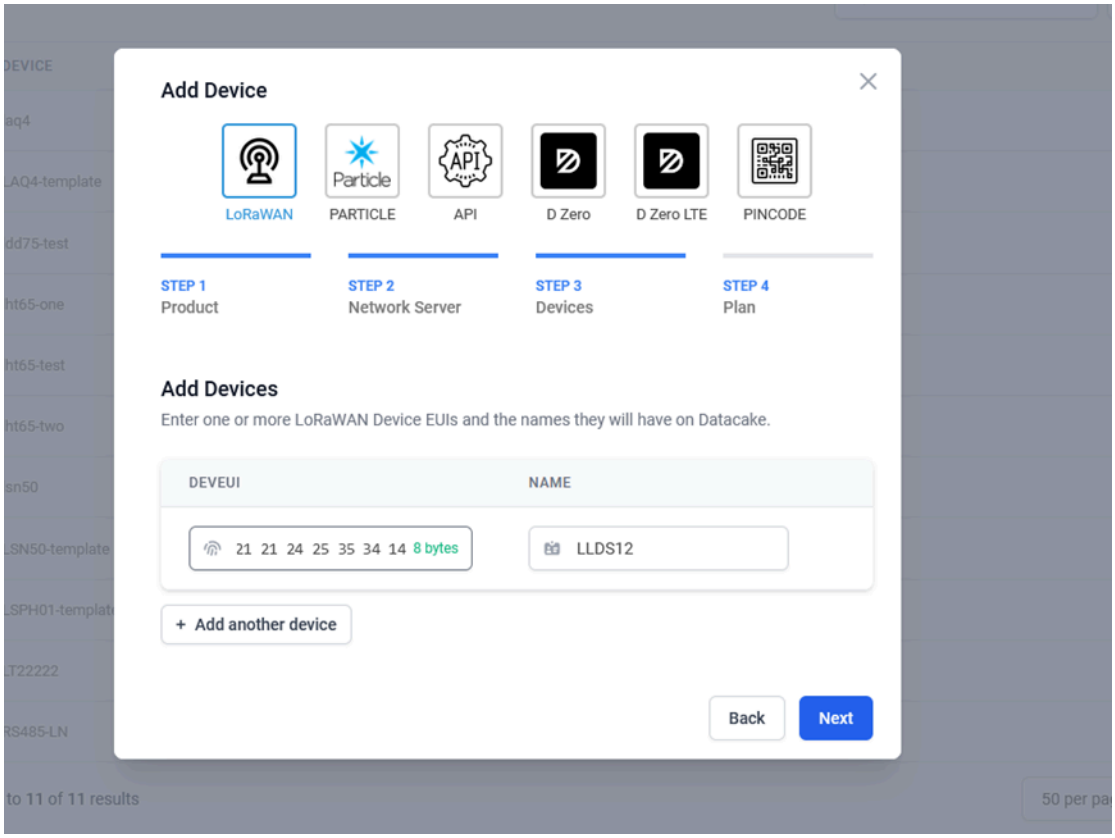
Figure 2 Schematic diagram of size of light spot

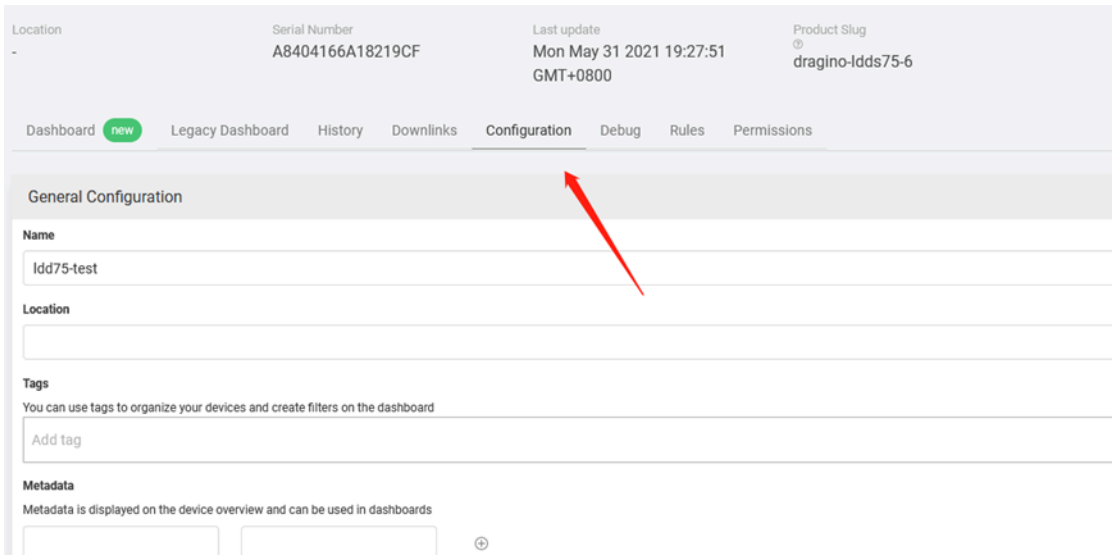
$$d = D \cdot \tan\beta$$

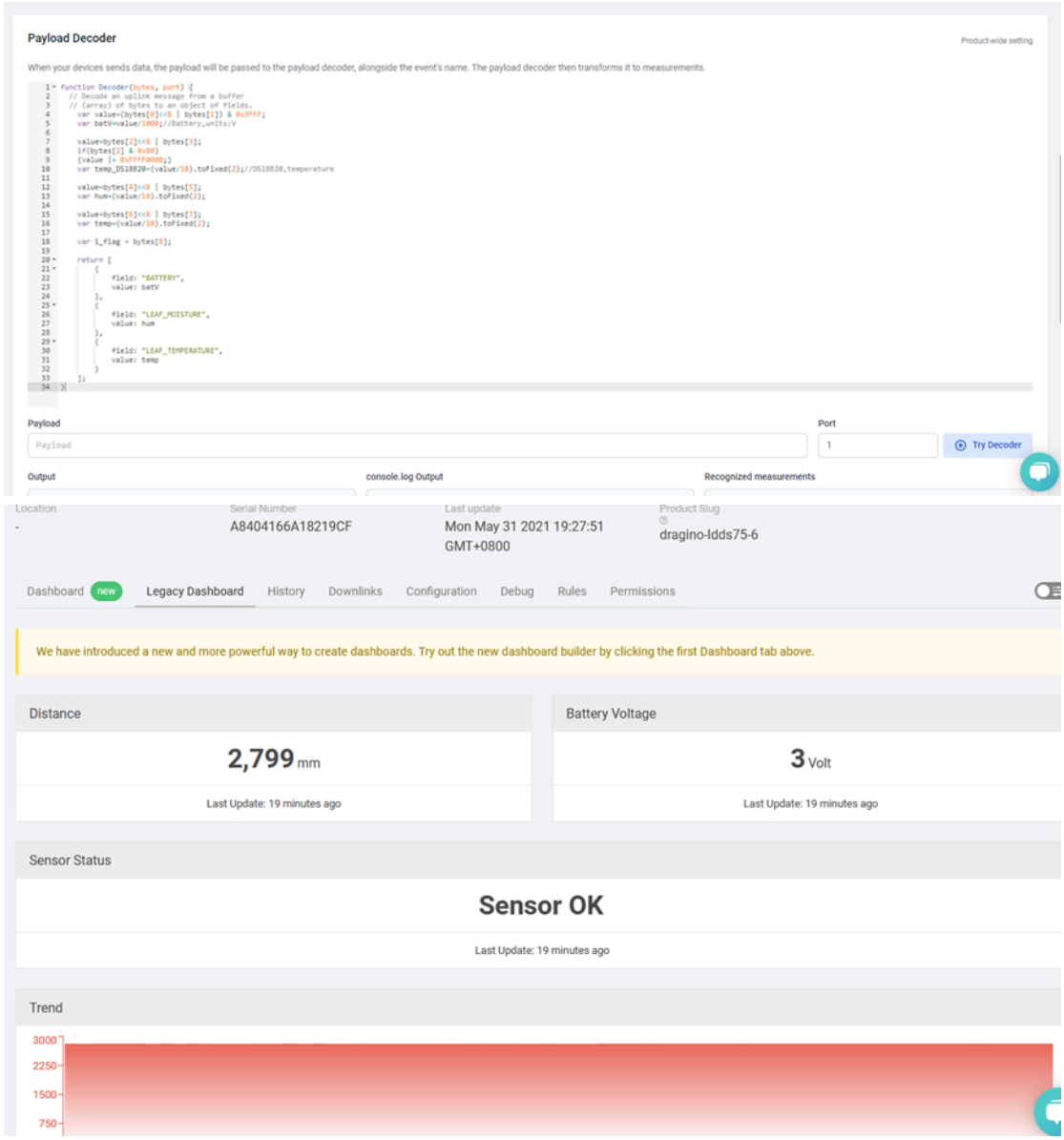
Table 2 the Minimum side length of effective detection corresponding to Detecting Range

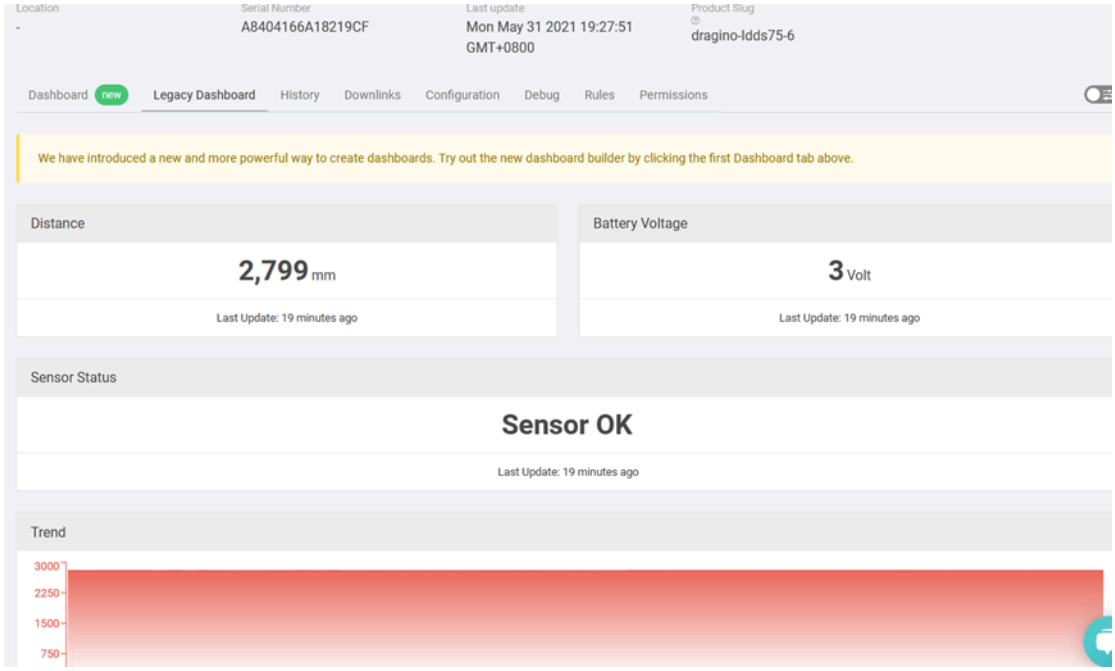
Detecting range	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m
Minimum side length	6cm	12cm	18cm	24cm	30cm	36cm	42cm	48cm	54cm	60cm	66cm	72cm

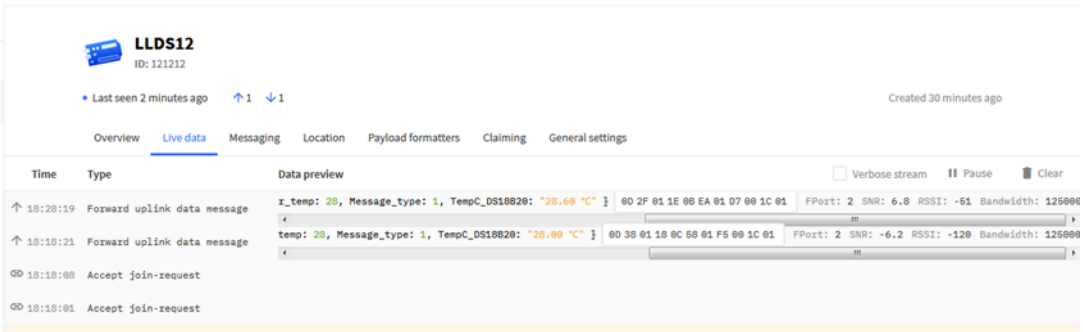


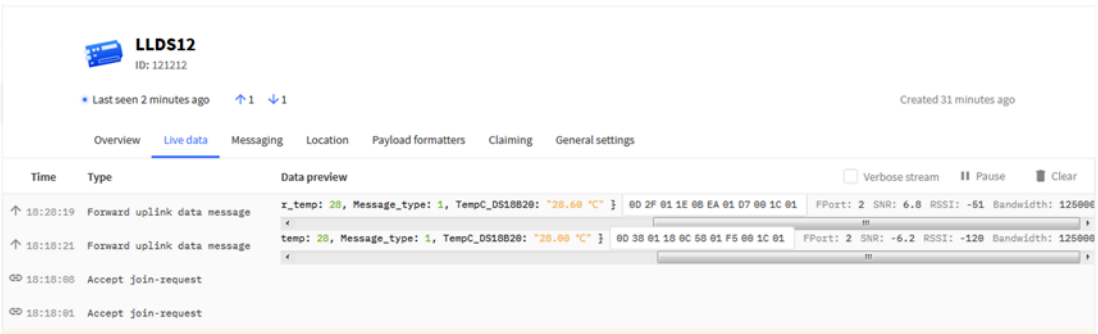

Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Add Devices
Enter one or more LoRaWAN Device EUIs and the names they will have on Datacake.
DEVEUI
NAME
21 21 24 25 35 34 14 8 bytes
LLDS12
+ Add another device
Back
Next


Location
-
Serial Number
A8404166A18219CF
Last update
Mon May 31 2021 19:27:51
GMT+0800
Product Slug
dragino-ldds75-6
Dashboard
new
Legacy Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
General Configuration
Name
ldd75-test
Location
Tags
You can use tags to organize your devices and create filters on the dashboard
Add tag
Metadata
Metadata is displayed on the device overview and can be used in dashboards

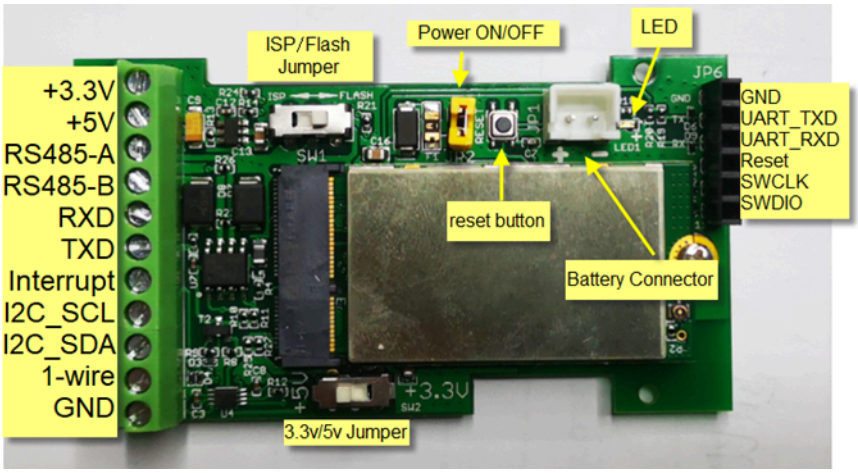

Payload Decoder
Product-wide setting
When your devices sends data, the payload will be passed to the payload decoder, alongside the event's name. The payload decoder then transforms it to measurements.
function Decoder(bytes, port) {
// Decode an uplink message from a buffer
// (array) of bytes to an object of fields.
var value=(bytes[0]<<8 | bytes[1]) & 0x3FFF;
var batV=value/1000;//Battery,units:V
value=bytes[2]<<8 | bytes[3];
if(bytes[2] & 0x80)
{value |= 0xFFFF0000;}
var temp_DS18B20=(value/10).toFixed(2);//DS18B20,temperature
value=bytes[4]<<8 | bytes[5];
var hum=(value/10).toFixed(2);
value=bytes[6]<<8 | bytes[7];
var temp=(value/10).toFixed(2);
var i_flag = bytes[8];
return [
{
field: "BATTERY",
value: batV
},
{
field: "LEAF_MOISTURE",
value: hum
},
{
field: "LEAF_TEMPERATURE",
value: temp
}
];
}
Payload
Payload
Port
1
Try Decoder
Output
console.log Output
Recognized measurements
Location
-
Serial Number
A8404166A18219CF
Last update
Mon May 31 2021 19:27:51
GMT+0800
Product Slug
dragino-ldds75-6
Dashboard
new
Legacy Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
We have introduced a new and more powerful way to create dashboards. Try out the new dashboard builder by clicking the first Dashboard tab above.
Distance
2,799 mm
Last Update: 19 minutes ago
Battery Voltage
3 Volt
Last Update: 19 minutes ago
Sensor Status
Sensor OK
Last Update: 19 minutes ago
Trend
3000
2250
1500
750


Location
-
Serial Number
A8404166A18219CF
Last update
Mon May 31 2021 19:27:51
GMT+0800
Product Slug
dragino-ldds75-6
Dashboard
new
Legacy Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
We have introduced a new and more powerful way to create dashboards. Try out the new dashboard builder by clicking the first Dashboard tab above.
Distance
2,799 mm
Last Update: 19 minutes ago
Battery Voltage
3 Volt
Last Update: 19 minutes ago
Sensor Status
Sensor OK
Last Update: 19 minutes ago
Trend
3000
2250
1500
750

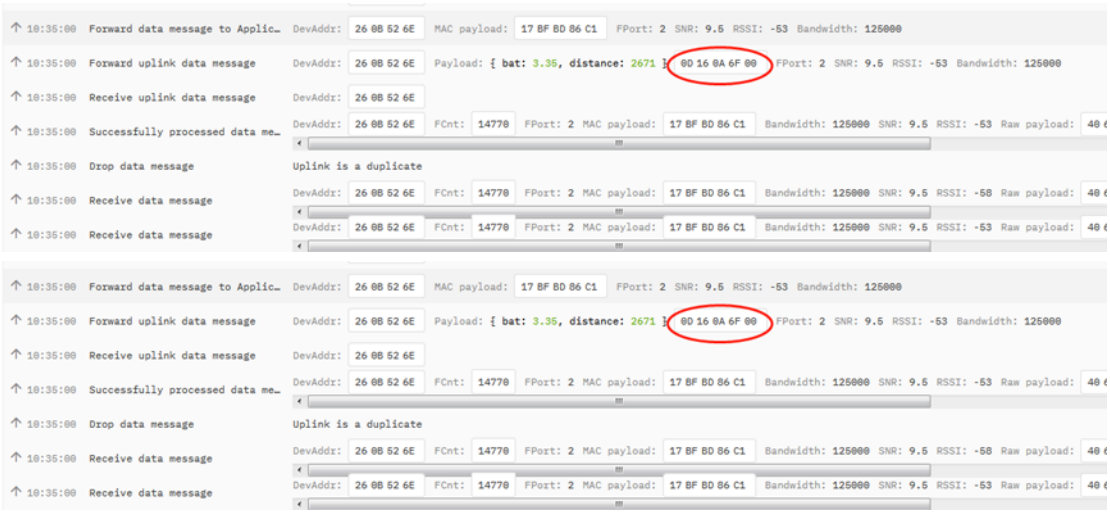

LLDS12
ID: 121212
Last seen 2 minutes ago
Created 30 minutes ago
Overview
Live data
Messaging
Location
Payload formatters
Claiming
General settings
Time
Type
Data preview
Verbose stream
Pause
Clear
18:28:19 Forward uplink data message
18:18:21 Forward uplink data message
18:18:08 Accept join-request
18:18:01 Accept join-request

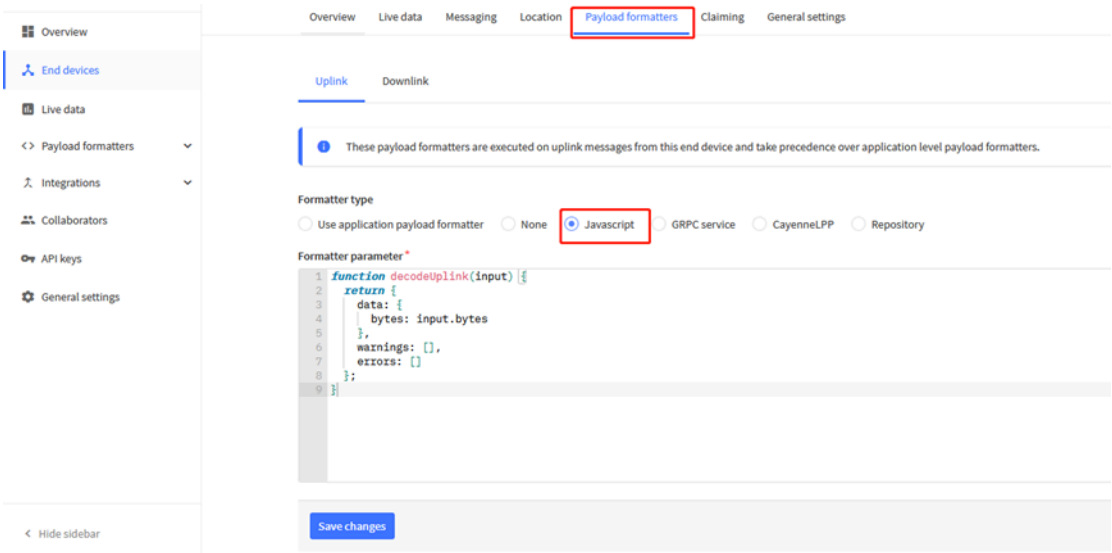

LLDS12
ID: 121212
Last seen 2 minutes ago
Created 31 minutes ago
Overview
Live data
Messaging
Location
Payload formatters
Claiming
General settings
Time
Type
Data preview
Verbose stream
Pause
Clear
18:28:19 Forward uplink data message
18:18:21 Forward uplink data message
18:18:08 Accept join-request
18:18:01 Accept join-request

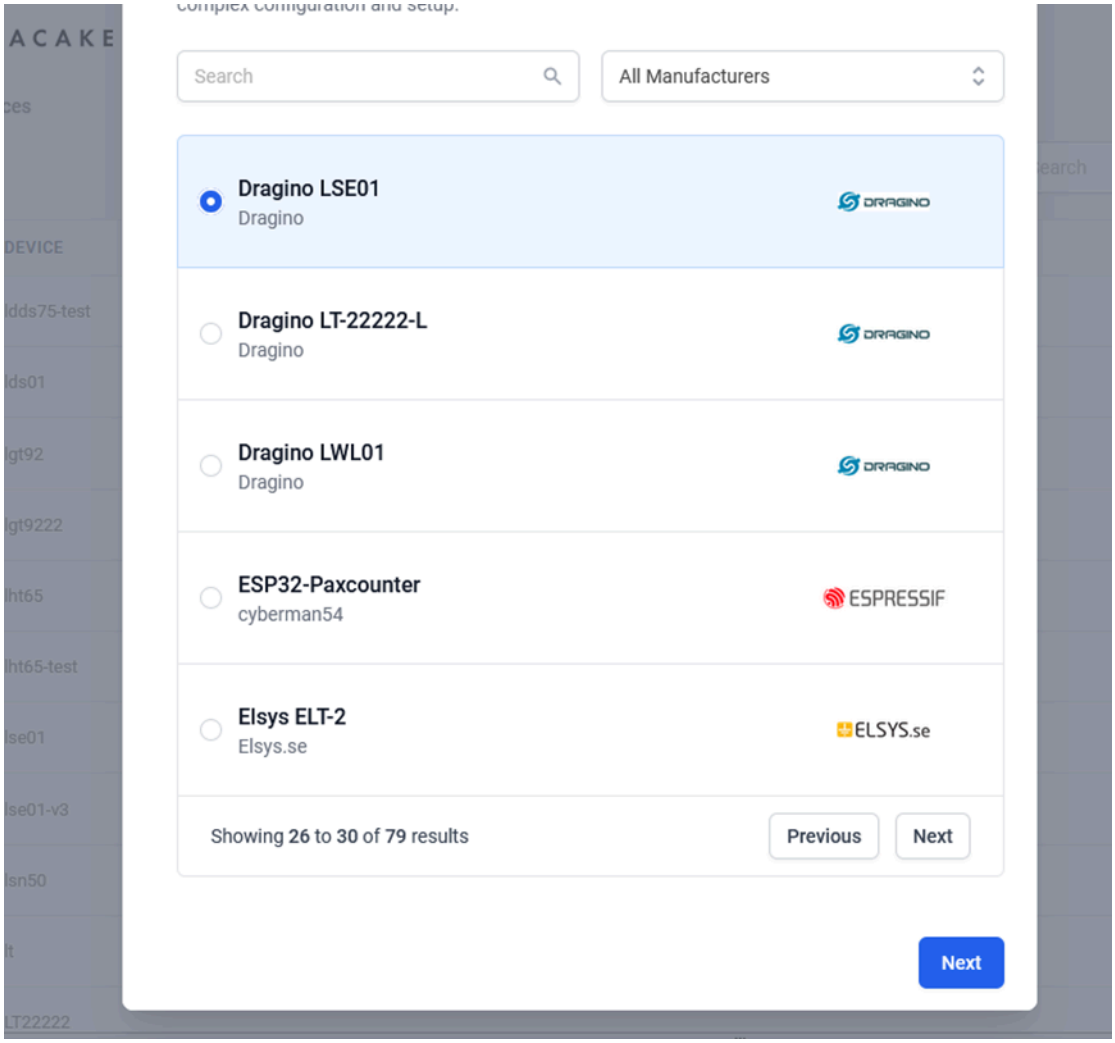
LDDS75 in a LoRaWAN Network

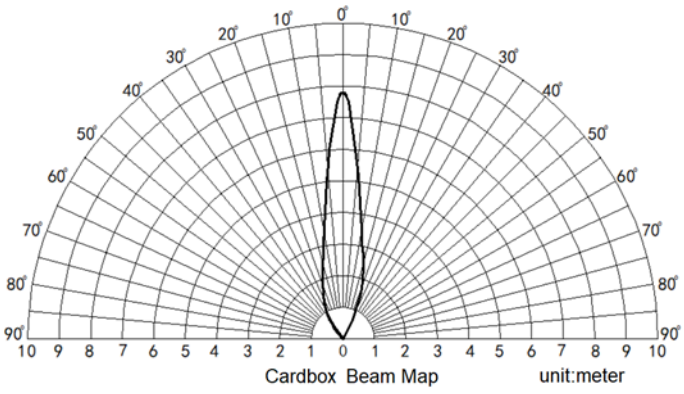


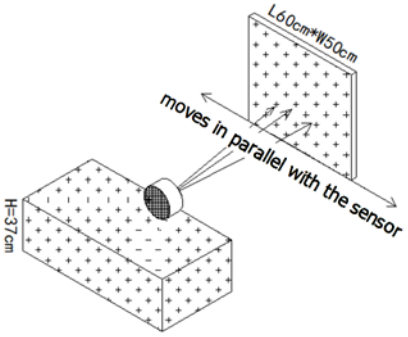
LDDS75 in a LoRaWAN Network

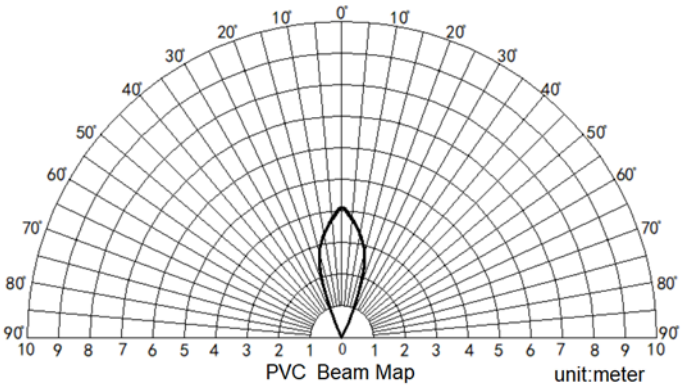


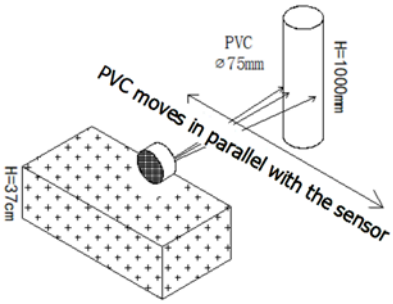



Search
All Manufacturers
Dragino LSE01
Dragino
Dragino LT-22222-L
Dragino
Dragino LWL01
Dragino
ESP32-Paxcounter
cyberman54
Elsys ELT-2
Elsys.se
Showing 26 to 30 of 79 results
Previous
Next
Next


Cardbox Beam Map
unit:meter


L60cm*W50cm
moves in parallel with the sensor
H=37cm



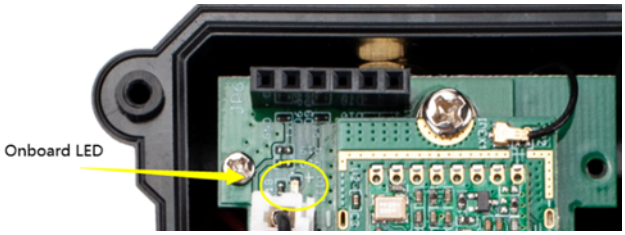


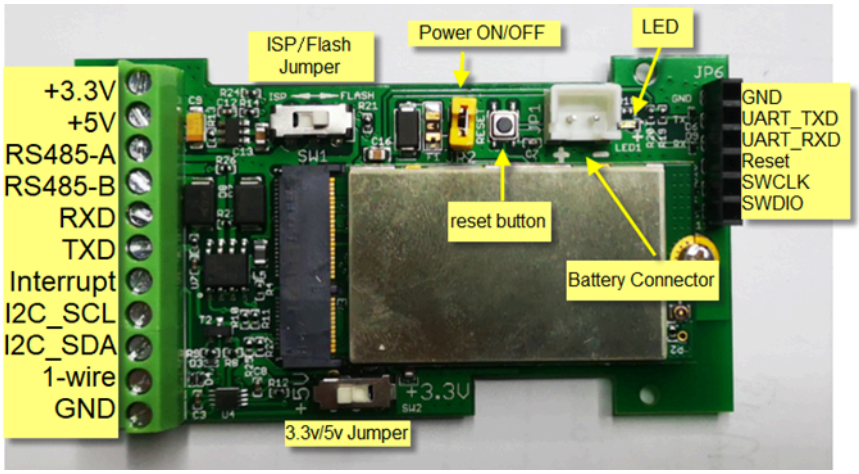
LDDS20 in a LoRaWAN Network

LDDS20 Distance Detection
LoRWAN Sensor

LG308
LoRaWAN Gateway

TTN LoRaWAN Server



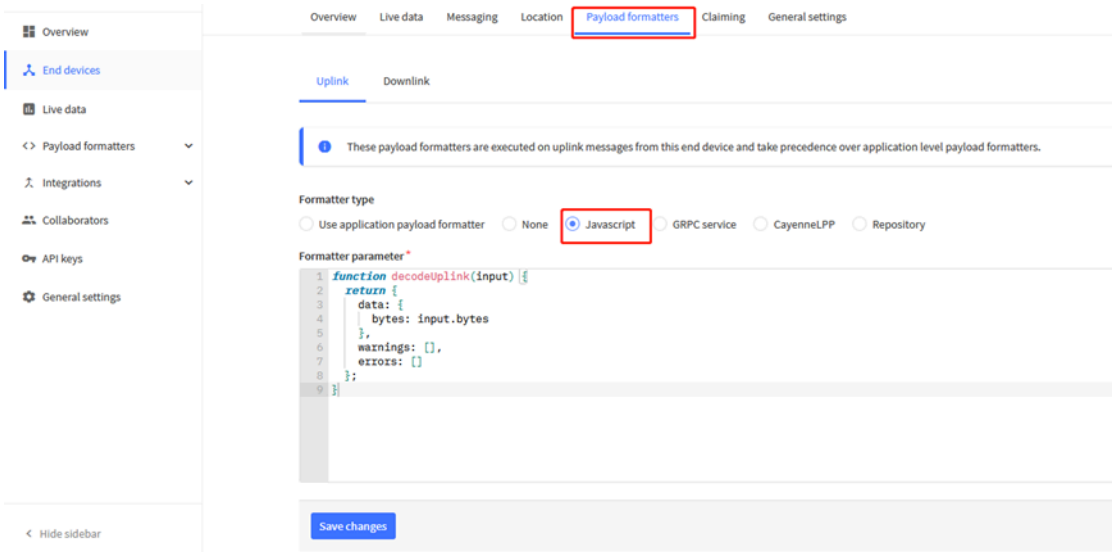


LDDS20 in a LoRaWAN Network

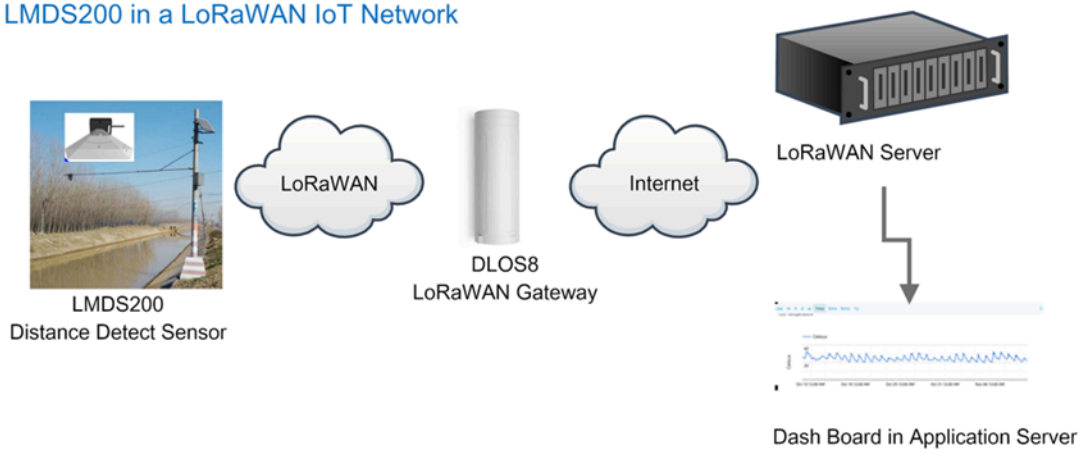
LDDS20 Distance Detection LoRWAN Sensor

LG308 LoRaWAN Gateway

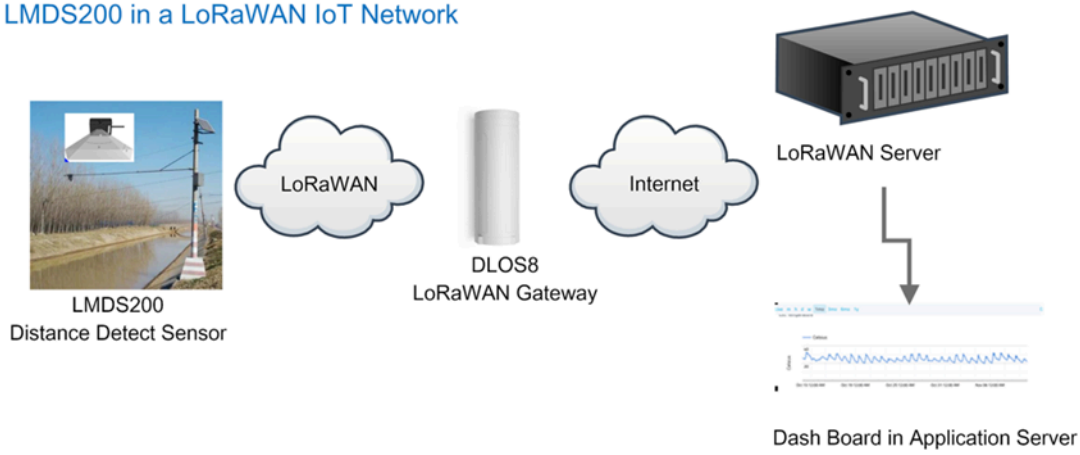
TTN LoRaWAN Server

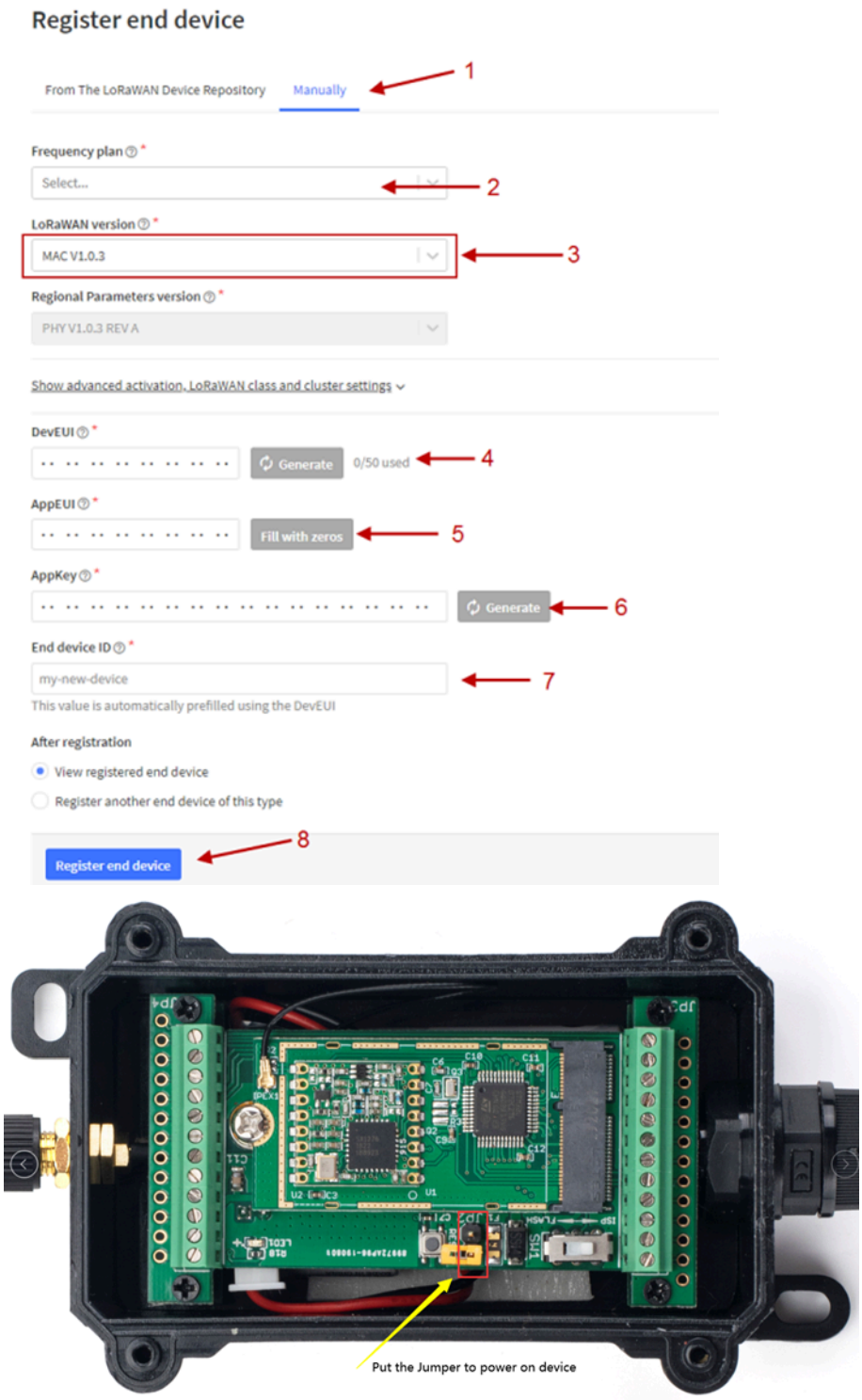


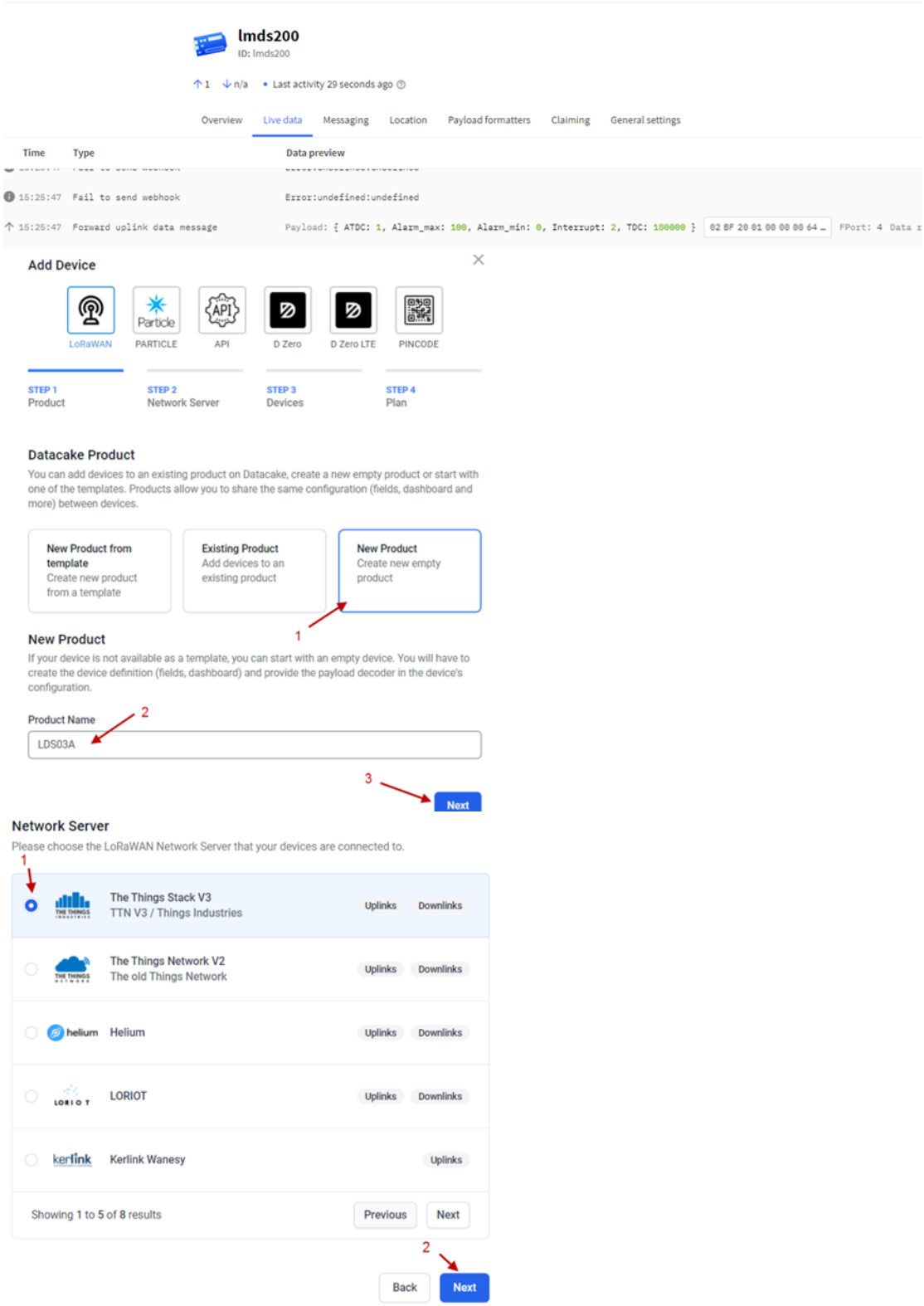
LMDS200 in a LoRaWAN IoT Network

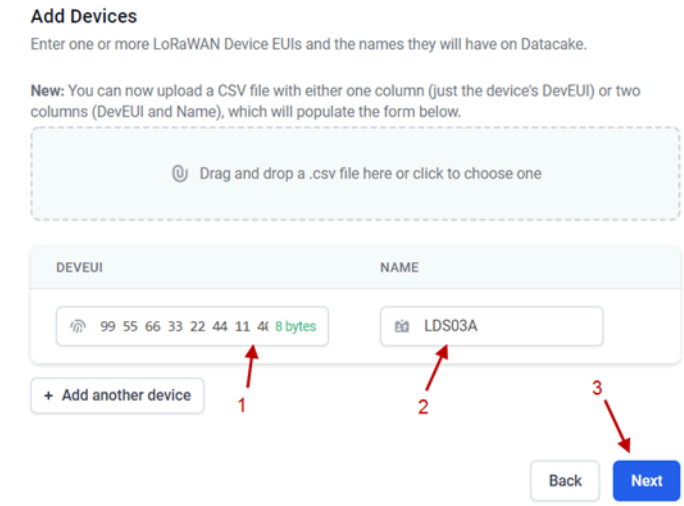


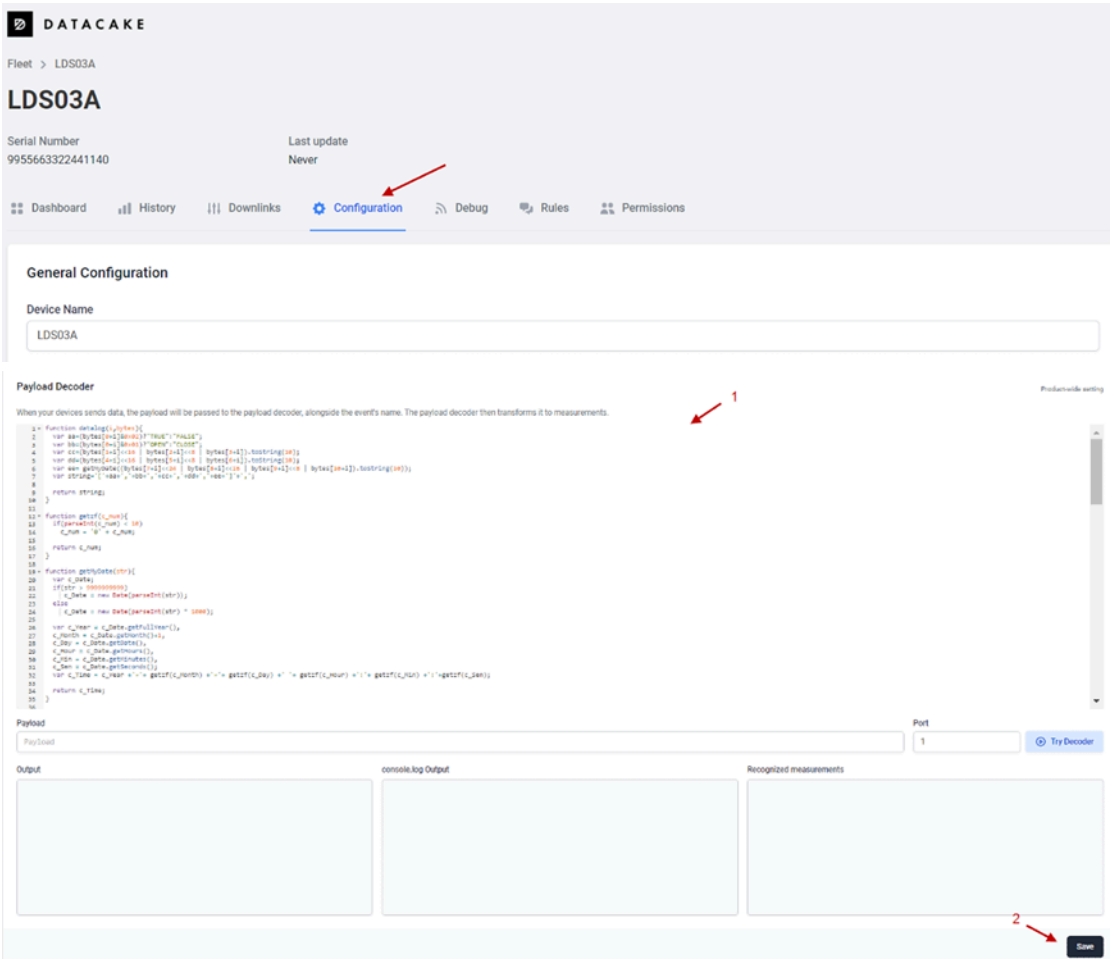
LMDS200 in a LoRaWAN IoT Network

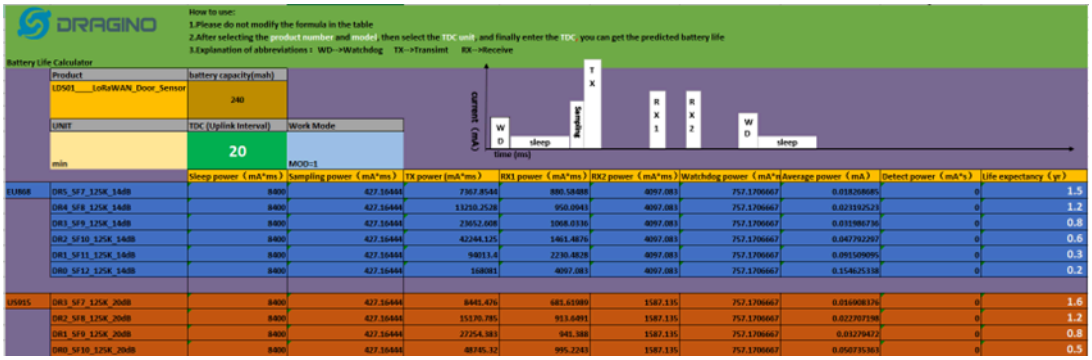



Register end device
From The LoRaWAN Device Repository
Manually
1
Frequency plan
Select...
2
LoRaWAN version
MAC V1.0.3
3
Regional Parameters version
PHY V1.0.3 REV A
Show advanced activation, LoRaWAN class and cluster settings
DevEUI
Generate
0/50 used
4
AppEUI
Fill with zeros
5
AppKey
Generate
6
End device ID
my-new-device
7
This value is automatically prefilled using the DevEUI
After registration
View registered end device
Register another end device of this type
Register end device
8
Put the Jumper to power on device


lmds200
ID: lmds200
1 n/a • Last activity 29 seconds ago
Overview
Live data
Messaging
Location
Payload formatters
Claiming
General settings
Time
Type
Data preview
15:25:47 Fail to send webhook
Error:undefined:undefined
15:25:47 Forward uplink data message
Payload: { ATDC: 1, Alarm_max: 100, Alarm_min: 0, Interrupt: 2, TDC: 180000 }
02 BF 20 01 00 00 00 64 …
FPort: 4 Data r
Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Datacake Product
You can add devices to an existing product on Datacake, create a new empty product or start with one of the templates. Products allow you to share the same configuration (fields, dashboard and more) between devices.
New Product from template
Create new product from a template
Existing Product
Add devices to an existing product
New Product
Create new empty product
1
New Product
If your device is not available as a template, you can start with an empty device. You will have to create the device definition (fields, dashboard) and provide the payload decoder in the device's configuration.
Product Name
2
LDS03A
3
Next
Network Server
Please choose the LoRaWAN Network Server that your devices are connected to.
1
The Things Stack V3
TTN V3 / Things Industries
Uplinks
Downlinks
The Things Network V2
The old Things Network
Uplinks
Downlinks
helium
Helium
Uplinks
Downlinks
LORIOT
Uplinks
Downlinks
kerlink
Kerlink Wanesy
Uplinks
Showing 1 to 5 of 8 results
Previous
Next
2
Back
Next


Add Devices
Enter one or more LoRaWAN Device EUIs and the names they will have on Datacake.
New: You can now upload a CSV file with either one column (just the device's DevEUI) or two columns (DevEUI and Name), which will populate the form below.
Drag and drop a .csv file here or click to choose one
DEVEUI
NAME
99 55 66 33 22 44 11 4(8 bytes
LDS03A
+ Add another device
1
2
3
Back
Next


DATACAKE
Fleet > LDS03A
LDS03A
Serial Number
9955663322441140
Last update
Never
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
General Configuration
Device Name
LDS03A
Payload Decoder
When your devices sends data, the payload will be passed to the payload decoder, alongside the event's name. The payload decoder then transforms it to measurements.
1
Payload
Port
Try Decoder
Output
console.log Output
Recognized measurements
2
Save



How to use:
1.Please do not modify the formula in the table
2.After selecting the product number and mode, then select the TDC unit, and finally enter the TDC, you can get the predicted battery life
3.Explanation of abbreviations : WD-->Watchdog TX-->Transimt RX-->Receive

Battery Life Calculator

	Product	battery capacity(mah)
	LDS01___LoRaWAN_Door_Sensor	240

UNIT	TDC (Uplink Interval)	Work Mode
min	20	MOD=1

		Sleep power（mA*ms）	Sampling power（mA*ms）	TX power (mA*ms)	RX1 power（mA*ms）	RX2 power（mA*ms）	Watchdog power（mA*ms）	Average power（mA）	Detect power（mA*s）	Life expectancy（yr）
EU868	DR5_SF7_125K_14dB	8400	427.16444	7367.8544	880.58488	4097.083	757.1706667	0.018268685	0	1.5
	DR4_SF8_125K_14dB	8400	427.16444	13210.2528	950.0943	4097.083	757.1706667	0.021192523	0	1.2
	DR3_SF9_125K_14dB	8400	427.16444	23652.608	1068.0336	4097.083	757.1706667	0.031986736	0	0.8
	DR2_SF10_125K_14dB	8400	427.16444	42344.125	1461.4876	4097.083	757.1706667	0.047792297	0	0.6
	DR1_SF11_125K_14dB	8400	427.16444	94013.4	2230.4828	4097.083	757.1706667	0.091509095	0	0.3
	DR0_SF12_125K_14dB	8400	427.16444	168081	4097.083	4097.083	757.1706667	0.154625338	0	0.2
US915	DR3_SF7_125K_20dB	8400	427.16444	8441.476	681.61989	1587.135	757.1706667	0.016908176	0	1.6
	DR2_SF8_125K_20dB	8400	427.16444	15170.785	913.6491	1587.135	757.1706667	0.022707198	0	1.2
	DR1_SF9_125K_20dB	8400	427.16444	27254.383	941.388	1587.135	757.1706667	0.03279472	0	0.8
	DR0_SF10_125K_20dB	8400	427.16444	48745.32	995.2243	1587.135	757.1706667	0.050735363	0	0.5

pH buffer solution	AT Command to calibrate	Downlink Command	Read Cal Value
4.00	AT+PHCAL=4	0x13 04 Reply with Calibrate payload	AT+PHCAL=? Example 41,61,91
6.86	AT+PHCAL=6	0x13 06 Reply with Calibrate payload	AT+PHCAL=?
9.18	AT+PHCAL=9	0x13 09 Reply with Calibrate payload	AT+PHCAL=?
Factory Default	AT+PHCAL=15	0x13 15 Reply with Calibrate payload	AT+PHCAL=? Example 151

Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
Get Calibration Version Info	Any	14	2

Command Example	Function	Response
AT+TDC=?	Show current transmit Interval	30000 OK the interval is 30000ms = 30s
AT+TDC=60000	Set Transmit Interval	OK Set transmit interval to 60000ms = 60 seconds

Command Example	Function	Response
AT+INTMOD=?	Show current interrupt mode	0 OK the mode is 0 = No interruption
AT+INTMOD=2	Set Transmit Interval 1. (Disable Interrupt), 2. (Trigger by rising and falling edge), 3. (Trigger by falling edge) 4. (Trigger by rising edge)	OK

Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
Get Firmware Version Info	Any	26	2


DRAGINO
DEV ADDR: 01818548
DEV EUI: A840410001818548
APP EUI: 3F77ADE36BCAAB65
APP KEY: 574E37E68AECFCCDB3B93D87A93B4B2C
APPSKEY: C948A56F21258524BE2ED27FA8BCC8C9
NETSKEY: FFA2F546BFFF65DD62FB26685A9B94F3
SN:LST25265480

pH buffer solution	AT Command to calibrate	Downlink Command	Read Cal Value
4.00	AT+PHCAL=4	0x13 04 Reply with Calibrate payload	AT+PHCAL=? Example 41,61,91
6.86	AT+PHCAL=6	0x13 06 Reply with Calibrate payload	AT+PHCAL=?
9.18	AT+PHCAL=9	0x13 09 Reply with Calibrate payload	AT+PHCAL=?
Factory Default	AT+PHCAL=15	0x13 15 Reply with Calibrate payload	AT+PHCAL=? Example 151

pH buffer solution	AT Command to calibrate	Downlink Command	Read Cal Value
4.00	AT+PHCAL=4	0x13 04 Reply with Calibrate payload	AT+PHCAL=? Example 41,61,91
6.86	AT+PHCAL=6	0x13 06 Reply with Calibrate payload	AT+PHCAL=?
9.18	AT+PHCAL=9	0x13 09 Reply with Calibrate payload	AT+PHCAL=?
Factory Default	AT+PHCAL=15	0x13 15 Reply with Calibrate payload	AT+PHCAL=? Example 151

Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
Get Calibration Version Info	Any	14	2

Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
Get Calibration Version Info	Any	14	2

Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
Get Calibration Version Info	Any	14	2

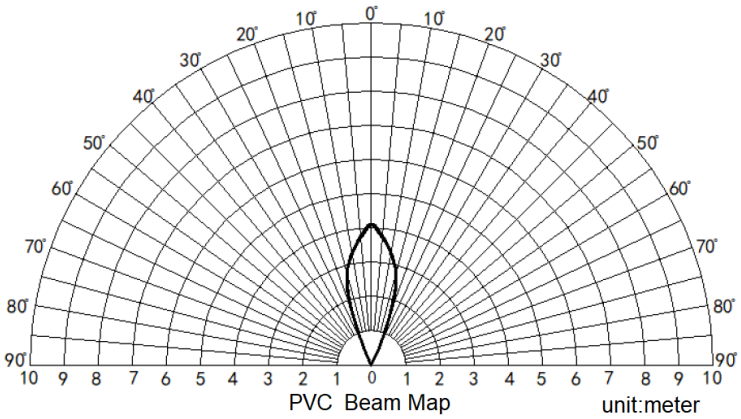
Command Example	Function	Response
AT+TDC=?	Show current transmit Interval	30000 OK the interval is 30000ms = 30s
AT+TDC=60000	Set Transmit Interval	OK Set transmit interval to 60000ms = 60 seconds

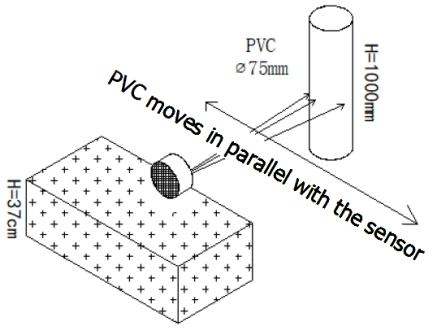
Command Example	Function	Response
AT+INTMOD=?	Show current interrupt mode	0 OK the mode is 0 = No interruption
AT+INTMOD=2	Set Transmit Interval 1. (Disable Interrupt), 2. (Trigger by rising and falling edge), 3. (Trigger by falling edge) 4. (Trigger by rising edge)	OK

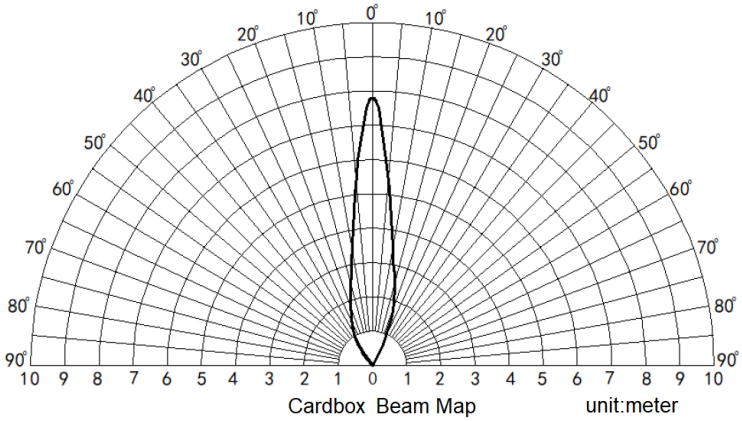
Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
Get Firmware Version Info	Any	26	2

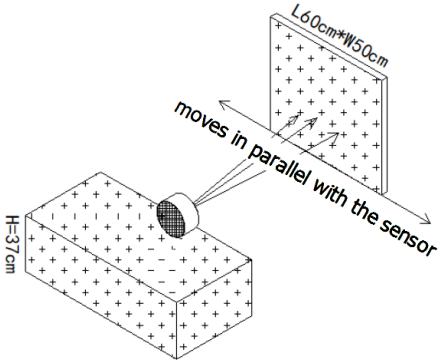
Command Example	Function	Response
AT+INTMOD=?	Show current interrupt mode	0 OK the mode is 0 = No interruption
AT+INTMOD=2	Set Transmit Interval 0- (Disable Interrupt), 1- (Trigger by rising and falling edge), 2- (Trigger by falling edge), 3- (Trigger by rising edge).	OK

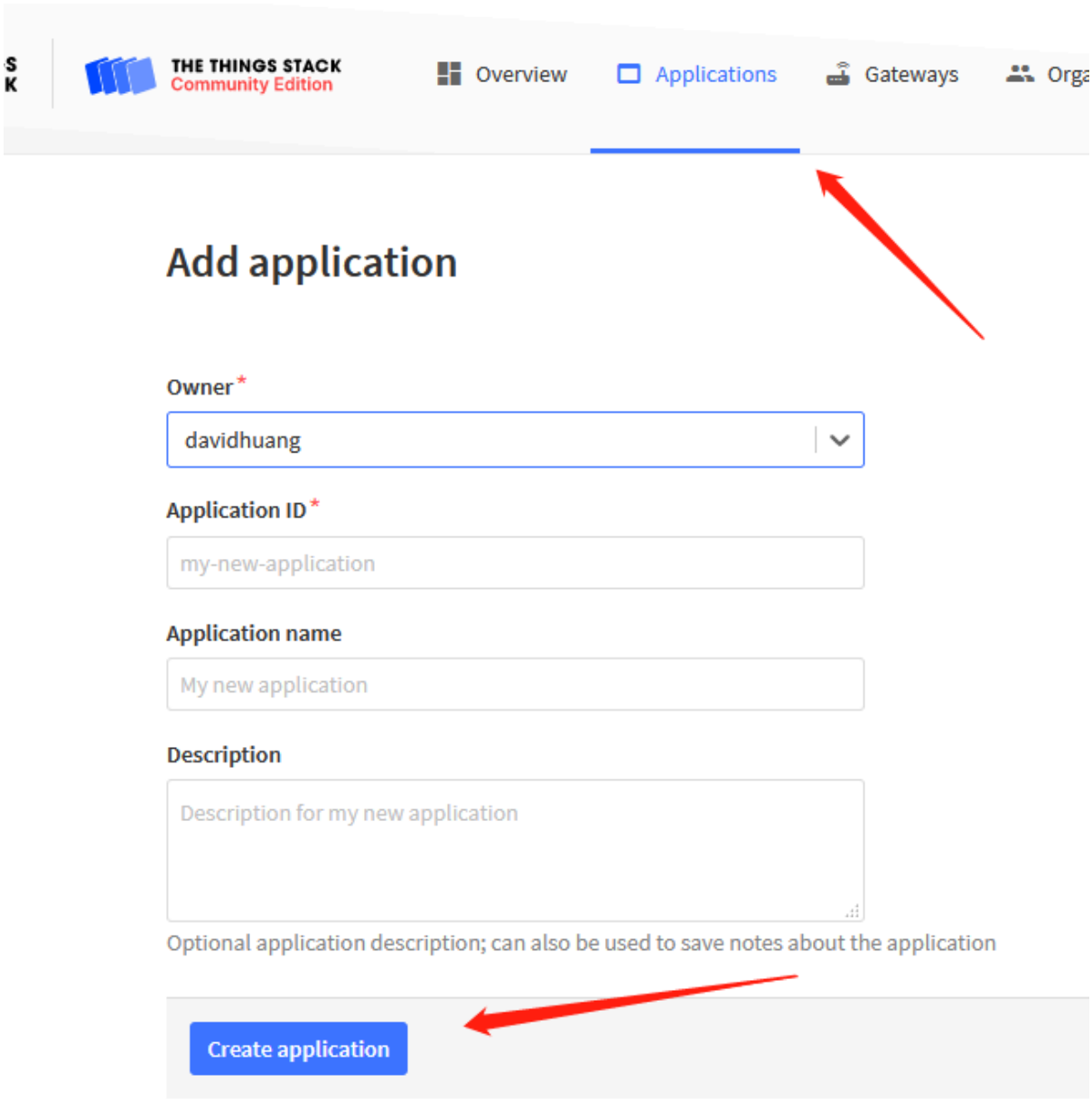
Item	Minimum value	Typical value	Maximum value	Unit	Remarks
Storage temperature	-25	25	80	℃	
Storage humidity		65%	90%	RH	(1)
Operating temperature	-15	25	60	℃	
Working humidity		65%	80%	RH	(1)

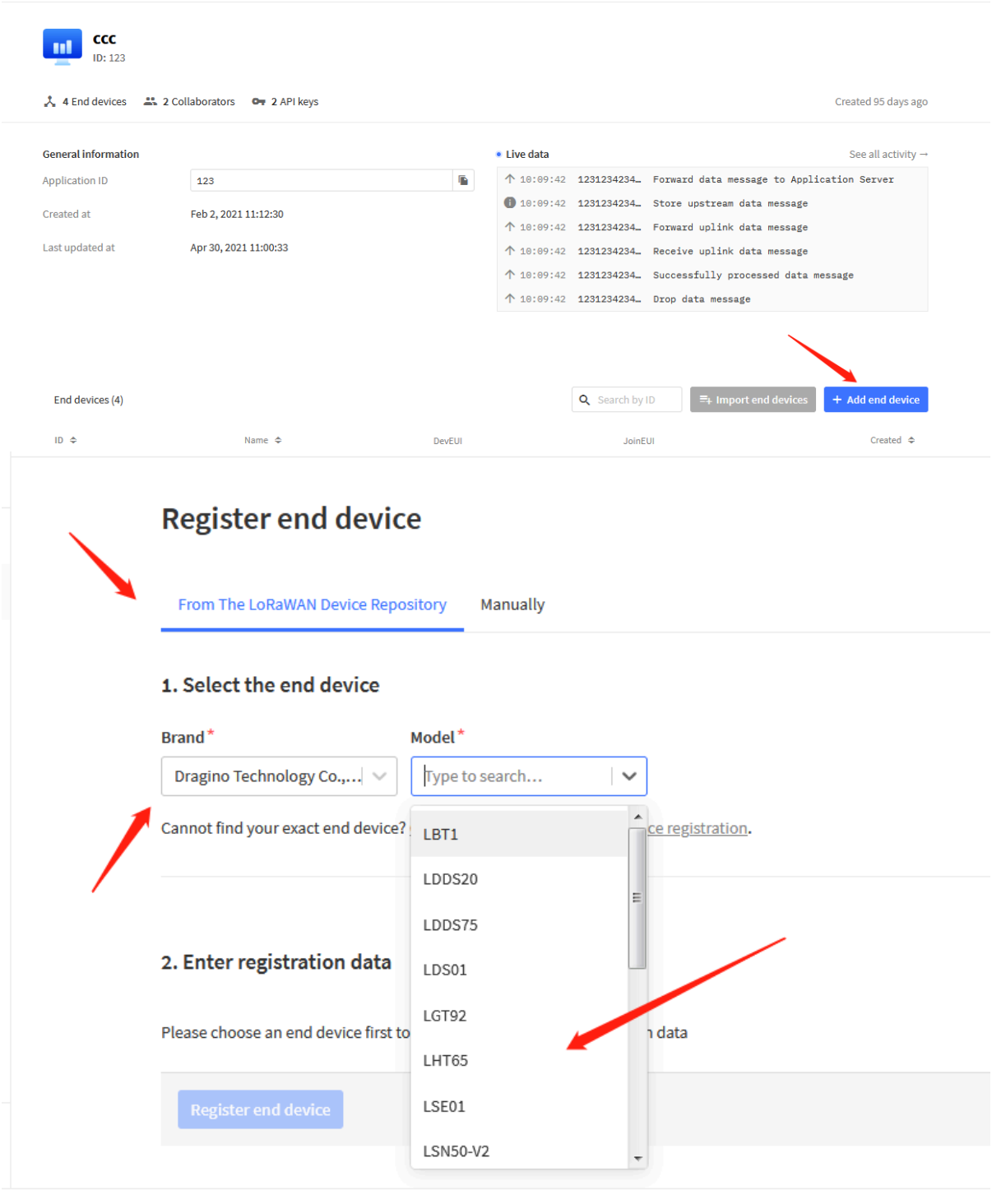


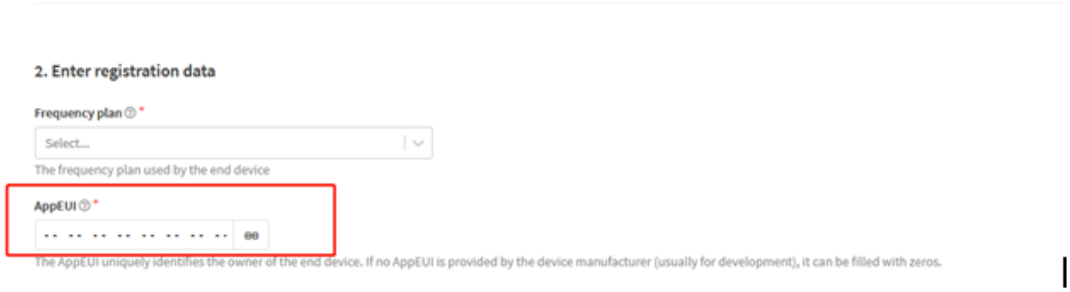


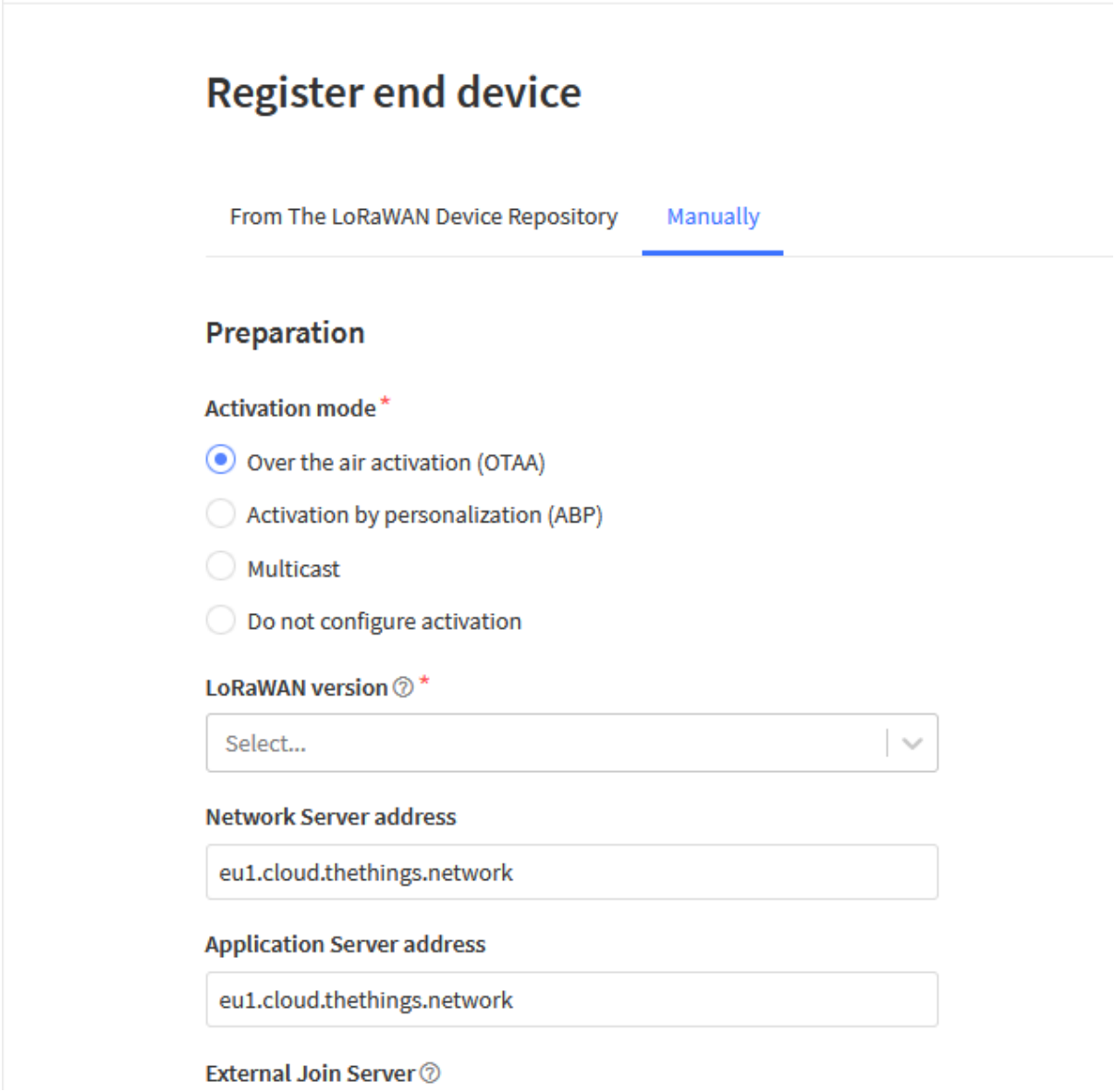




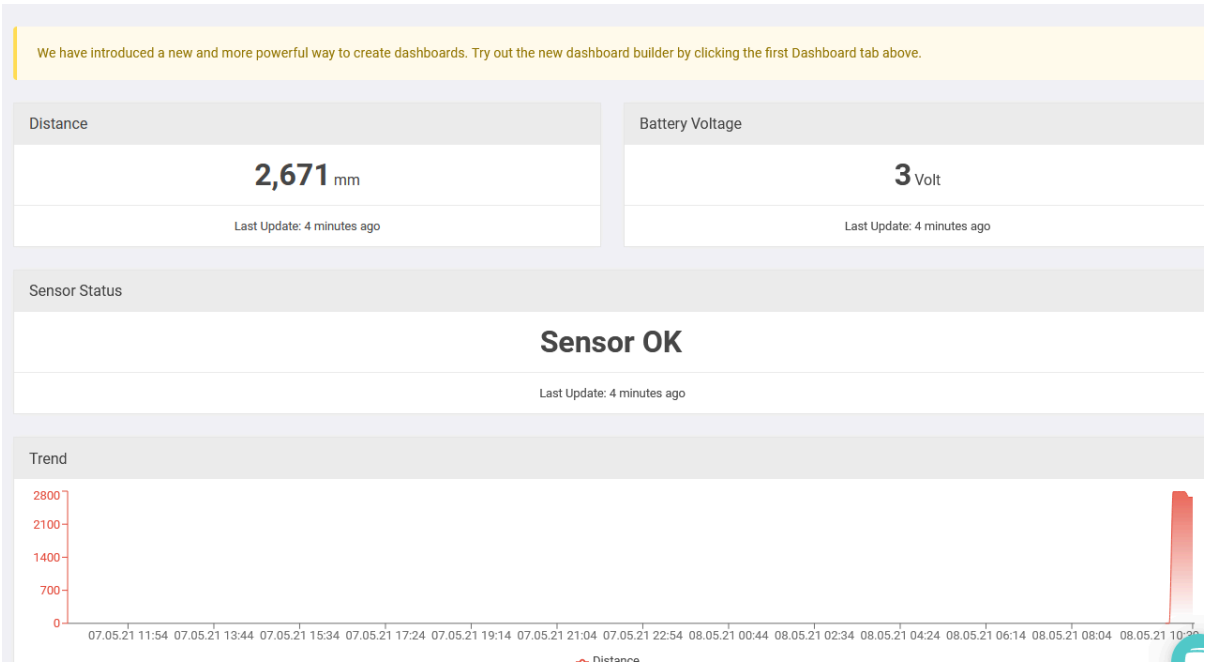

THE THINGS STACK
Community Edition
Overview
Applications
Gateways
Add application
Owner *
davidhuang
Application ID *
my-new-application
Application name
My new application
Description
Description for my new application
Optional application description; can also be used to save notes about the application
Create application

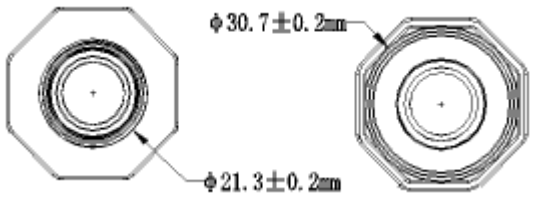

ccc
ID: 123
4 End devices
2 Collaborators
2 API keys
Created 95 days ago
General information
Application ID
123
Created at
Feb 2, 2021 11:12:30
Last updated at
Apr 30, 2021 11:00:33
Live data
See all activity →
10:09:42 1231234234… Forward data message to Application Server
10:09:42 1231234234… Store upstream data message
10:09:42 1231234234… Forward uplink data message
10:09:42 1231234234… Receive uplink data message
10:09:42 1231234234… Successfully processed data message
10:09:42 1231234234… Drop data message
End devices (4)
Search by ID
Import end devices
Add end device
ID
Name
DevEUI
JoinEUI
Created
Register end device
From The LoRaWAN Device Repository
Manually
1. Select the end device
Brand *
Dragino Technology Co.,…
Model *
Type to search…
Cannot find your exact end device?
ce registration.
LBT1
LDDS20
LDDS75
LDS01
LGT92
LHT65
LSE01
LSN50-V2
2. Enter registration data
Please choose an end device first to
data
Register end device

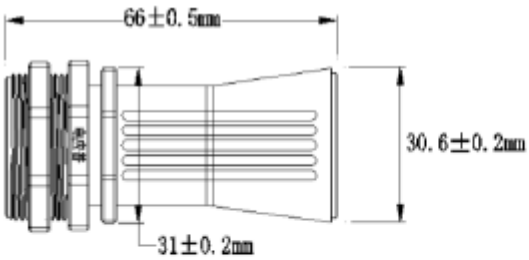

2. Enter registration data
Frequency plan *
Select...
The frequency plan used by the end device
AppEUI *
-- -- -- -- -- -- -- -- 00
The AppEUI uniquely identifies the owner of the end device. If no AppEUI is provided by the device manufacturer (usually for development), it can be filled with zeros.

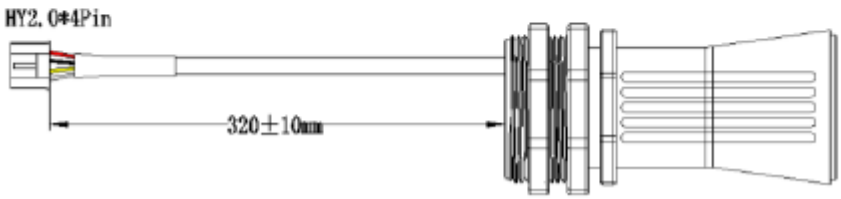

Register end device
From The LoRaWAN Device Repository
Manually
Preparation
Activation mode *
Over the air activation (OTAA)
Activation by personalization (ABP)
Multicast
Do not configure activation
LoRaWAN version *
Select...
Network Server address
eu1.cloud.thethings.network
Application Server address
eu1.cloud.thethings.network
External Join Server


2. Enter registration data
Frequency plan *
Europe 863-870 MHz (SF12 for RX2)
The frequency plan used by the end device
AppEUI *
-- -- -- -- -- -- -- -- 00
The AppEUI uniquely identifies the owner of the end device. If no AppEUI is provided by the device manufacturer (usually for dev
DevEUI *
-- -- -- -- -- -- -- --
The DevEUI is the unique identifier for this end device
AppKey *
-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
The root key to derive session keys to secure communication between the end device and the application
End device ID *
my-new-device
After registration

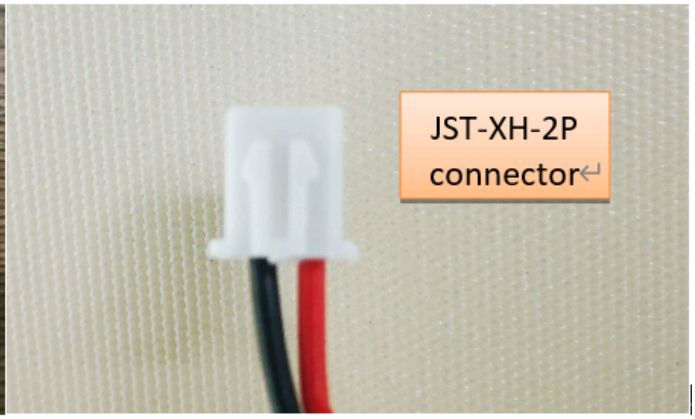

We have introduced a new and more powerful way to create dashboards. Try out the new dashboard builder by clicking the first Dashboard tab above.
Distance
2,671 mm
Last Update: 4 minutes ago
Battery Voltage
3 Volt
Last Update: 4 minutes ago
Sensor Status
Sensor OK
Last Update: 4 minutes ago
Trend
2800
2100
1400
700
0
07.05.21 11:54 07.05.21 13:44 07.05.21 15:34 07.05.21 17:24 07.05.21 19:14 07.05.21 21:04 07.05.21 22:54 08.05.21 00:44 08.05.21 02:34 08.05.21 04:24 08.05.21 06:14 08.05.21 08:04 08.05.21 10:2
Distance


Φ30.7±0.2mm
Φ21.3±0.2mm

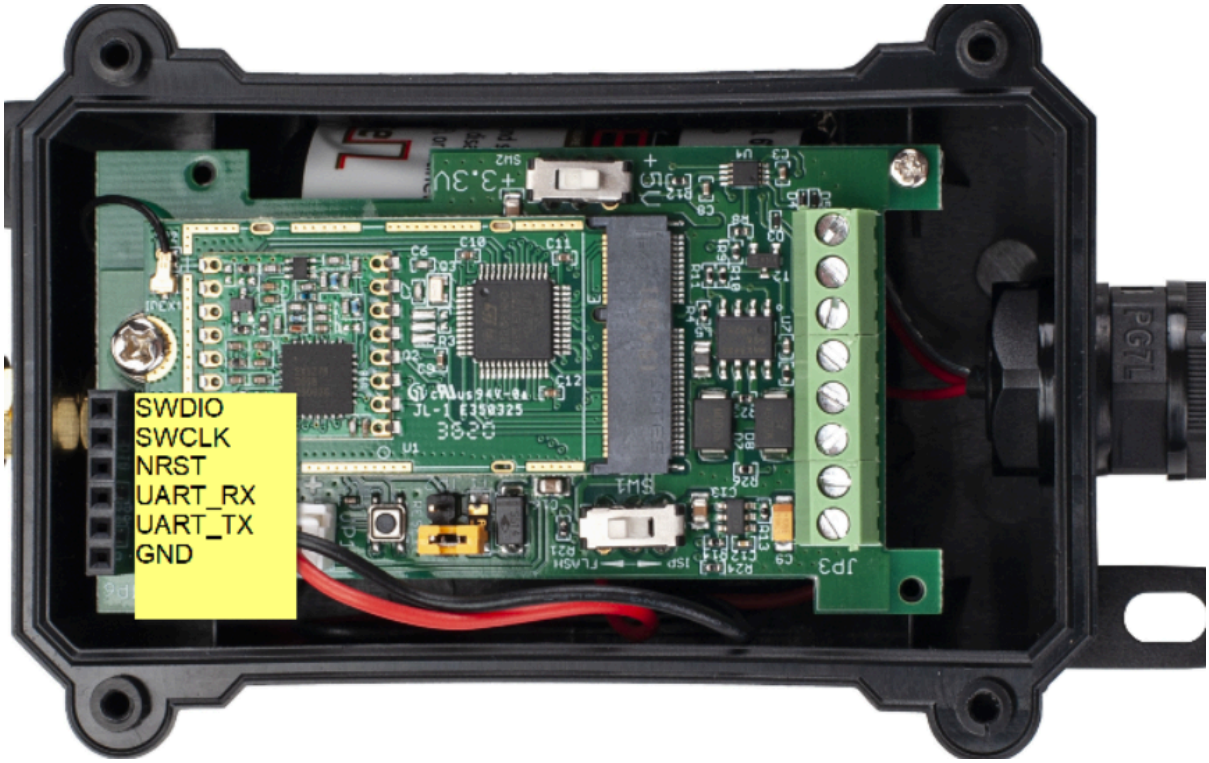

66±0.5mm
30.6±0.2mm
31±0.2mm

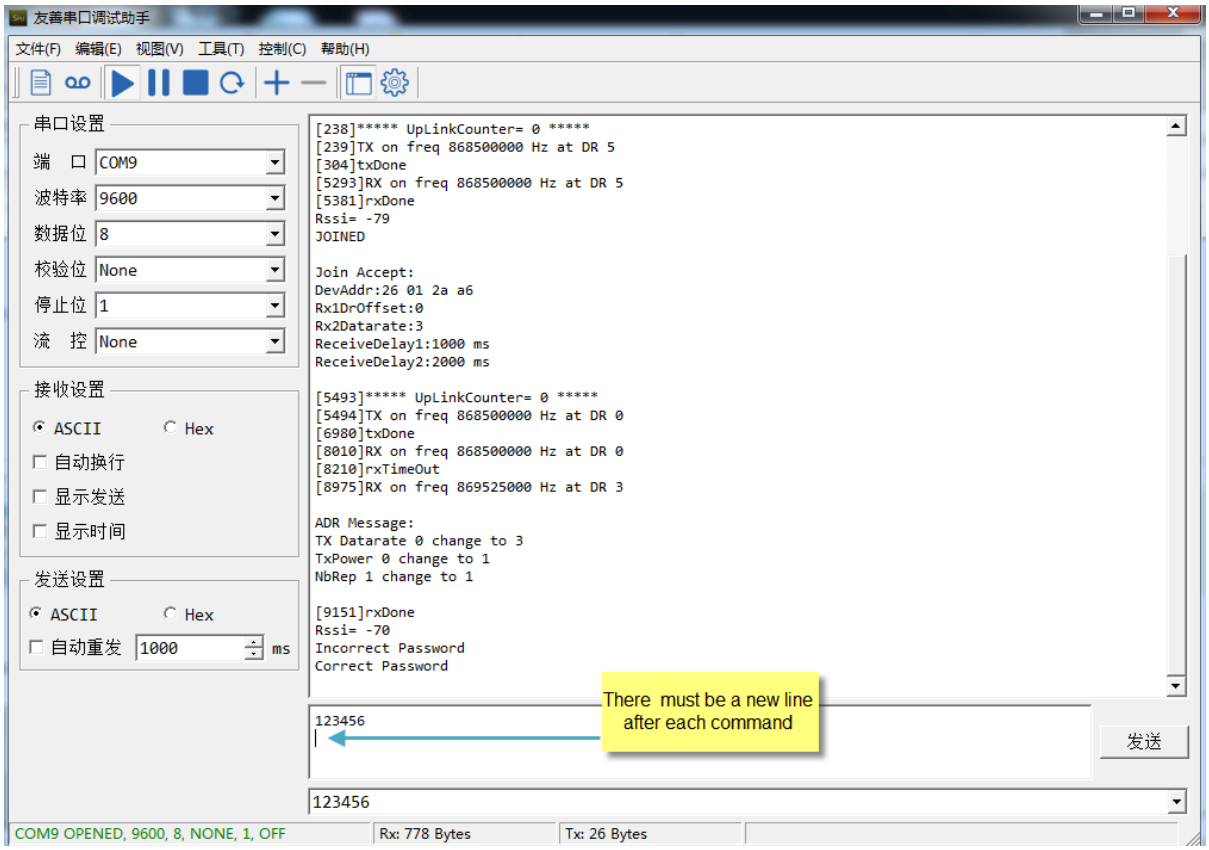

HY2.0*4Pin
320±10mm


ER18505
A 3.6V


JST-XH-2P
connector


LSN50 v2
in Definition
BOOT MODE
VDD
PA0
PA1
PA2
PA3
PB6
PB7
PB3
PB4
PA9
PA10
GND
VDD
ISP
FLASH
USB TTL to LSE01 Connection
TXD <--- >PA3
RXD <---> PA2
GND <---> GND
SW1 switch to:
1)ISP for program via TTL
2)flash for firmware running

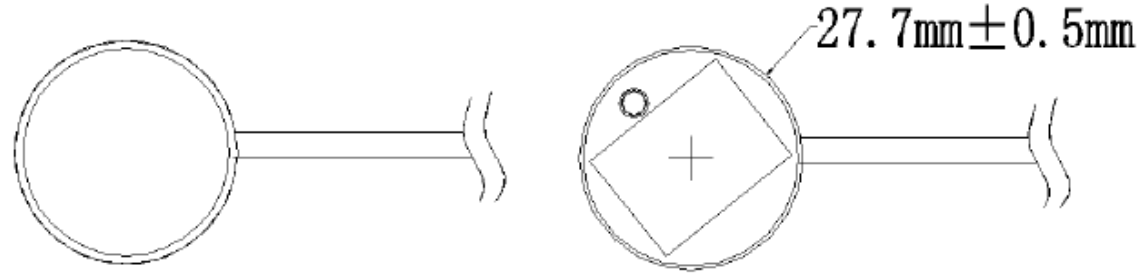

SWDIO
SWCLK
NRST
UART_RX
UART_TX
GND

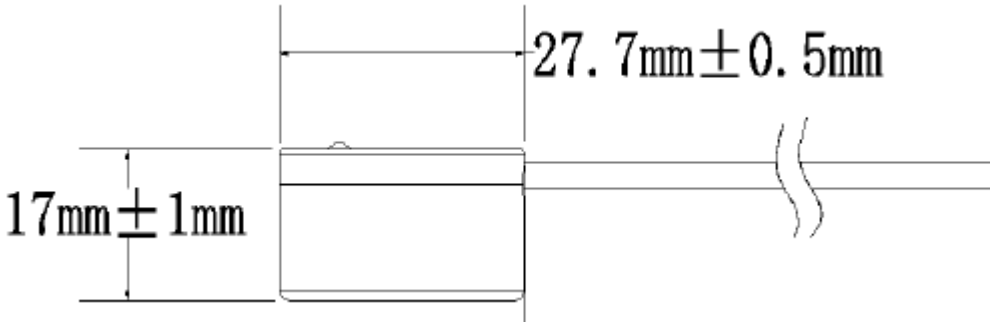

友善串口调试助手
文件(F) 编辑(E) 视图(V) 工具(T) 控制(C) 帮助(H)
串口设置
端 口 COM9
波特率 9600
数据位 8
校验位 None
停止位 1
流 控 None
接收设置
ASCII Hex
自动换行
显示发送
显示时间
发送设置
ASCII Hex
自动重发 1000 ms
[238]***** UpLinkCounter= 0 *****
[239]TX on freq 868500000 Hz at DR 5
[304]txDone
[5293]RX on freq 868500000 Hz at DR 5
[5381]rxDone
Rssi= -79
JOINED
Join Accept:
DevAddr:26 01 2a a6
Rx1DrOffset:0
Rx2Datarate:3
ReceiveDelay1:1000 ms
ReceiveDelay2:2000 ms
[5493]***** UpLinkCounter= 0 *****
[5494]TX on freq 868500000 Hz at DR 0
[6980]txDone
[8010]RX on freq 868500000 Hz at DR 0
[8210]rxTimeOut
[8975]RX on freq 869525000 Hz at DR 3
ADR Message:
TX Datarate 0 change to 3
TxPower 0 change to 1
NbRep 1 change to 1
[9151]rxDone
Rssi= -70
Incorrect Password
Correct Password
There must be a new line after each command
123456
发送
123456
COM9 OPENED, 9600, 8, NONE, 1, OFF
Rx: 778 Bytes
Tx: 26 Bytes

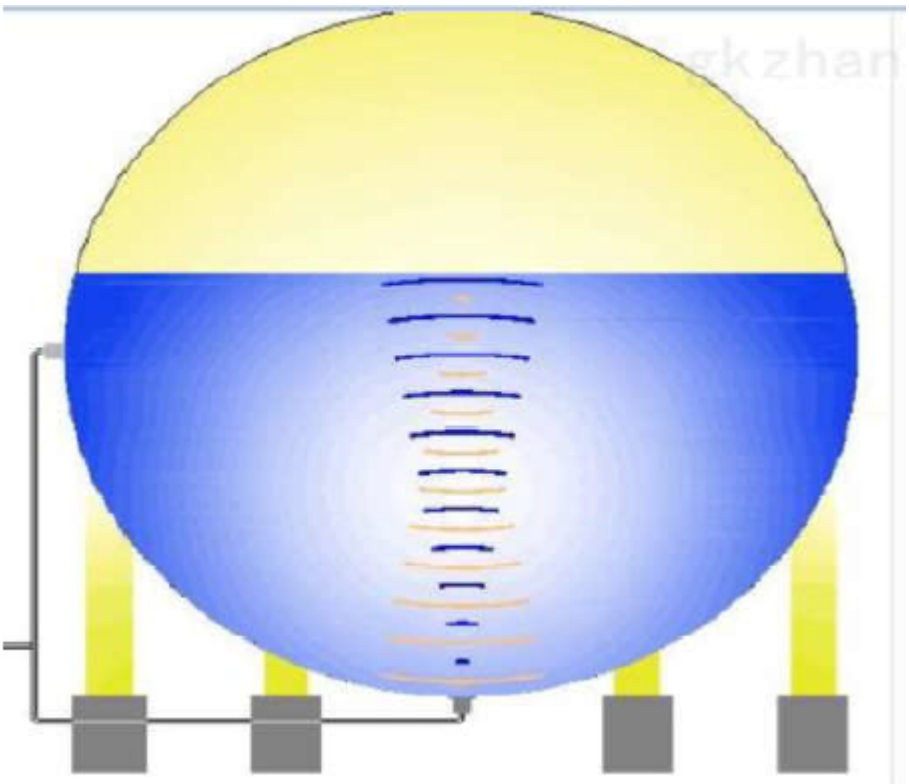
Command Example	Function	Response
AT+TDC=?	Show current transmit Interval	30000 OK the interval is 30000ms = 30s
AT+TDC=60000	Set Transmit Interval	OK Set transmit interval to 60000ms = 60 seconds

Command Example	Function	Response
AT+INTMOD=?	Show current interrupt mode	0 OK the mode is 0 = No interruption
AT+INTMOD=2	Set Transmit Interval 0- (Disable Interrupt), 1- (Trigger by rising and falling edge), 2- (Trigger by falling edge), 3- (Trigger by rising edge).	OK

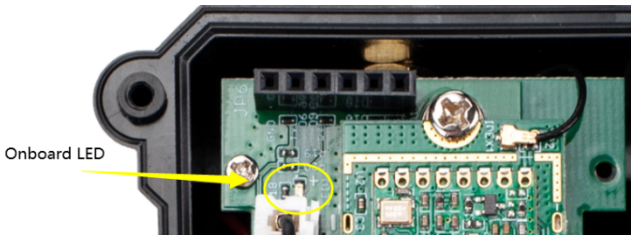
Command Example	Function	Response
AT+INTMOD=?	Show current interrupt mode	0 OK the mode is 0 = No interruption
AT+INTMOD=2	Set Transmit Interval 0- (Disable Interrupt), 1- (Trigger by rising and falling edge), 2- (Trigger by falling edge), 3- (Trigger by rising edge).	OK


27.7mm±0.5mm

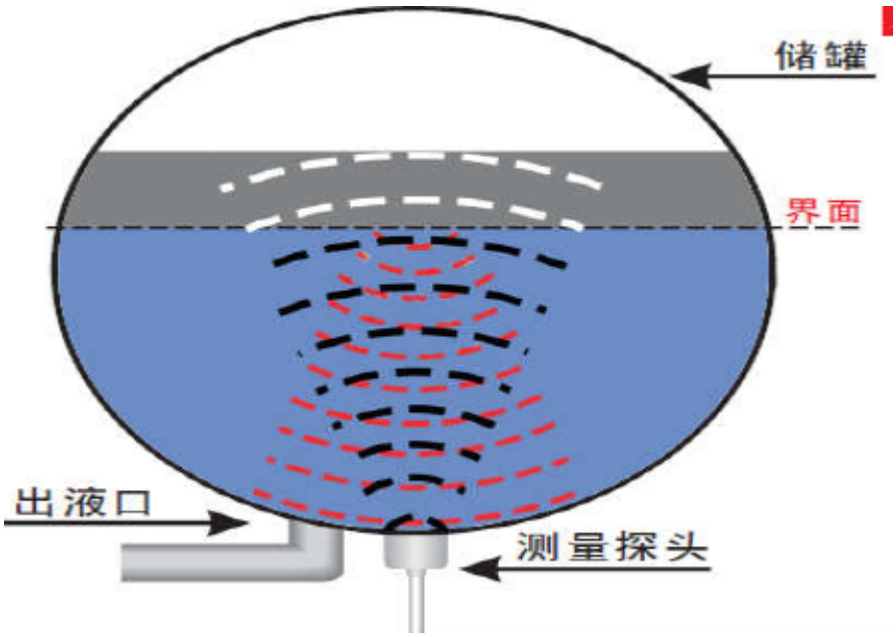

27.7mm±0.5mm
17mm±1mm

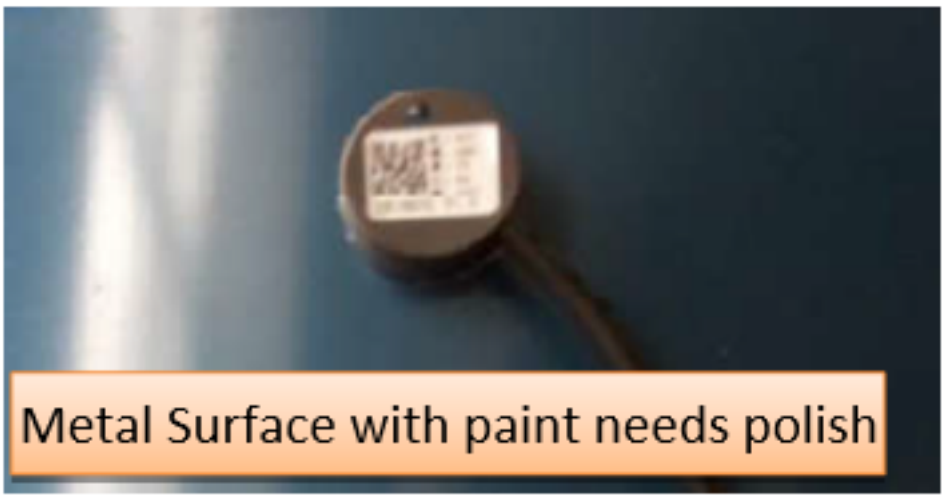



VCC
GND
TX
RX
DS1603L V1.0


Onboard LED


Epoxy Adhesive

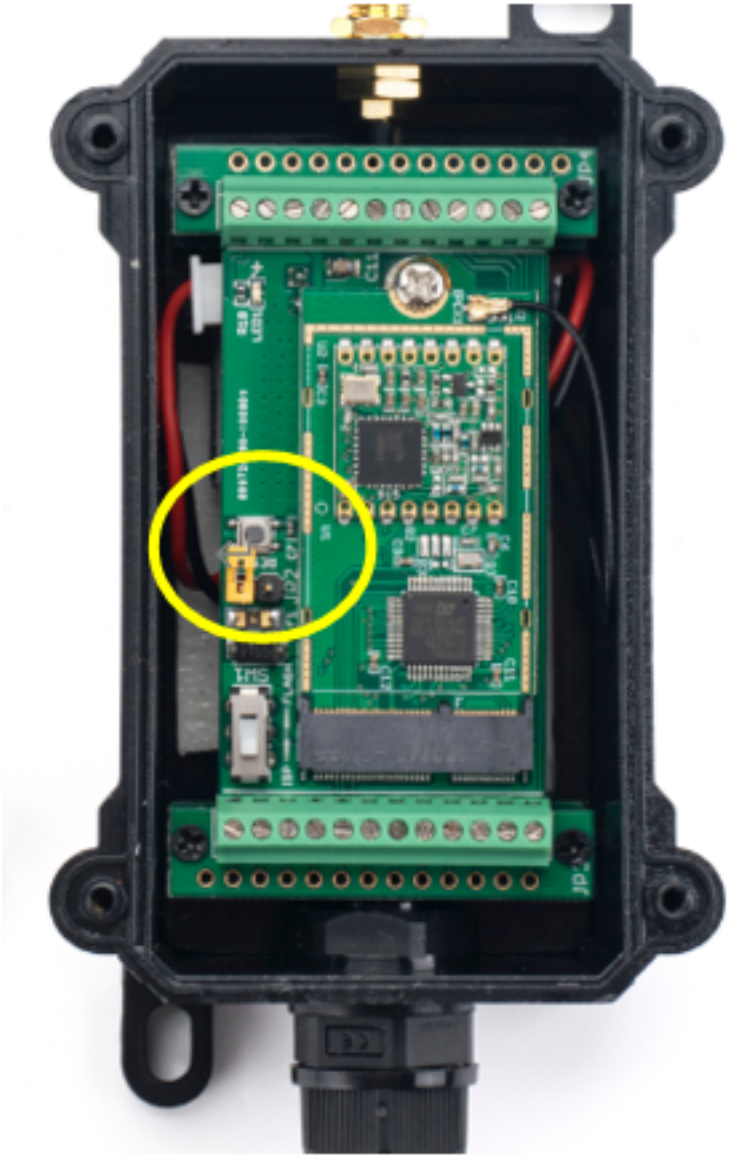

储罐
界面
出液口
测量探头


Metal Surface with paint needs polish


Metal Surface with paint needs polish


Shine Metal Surface without paint no need polish


BLUE LED
VCC
GND
TX
RX
PWM
DS1603L V1.0

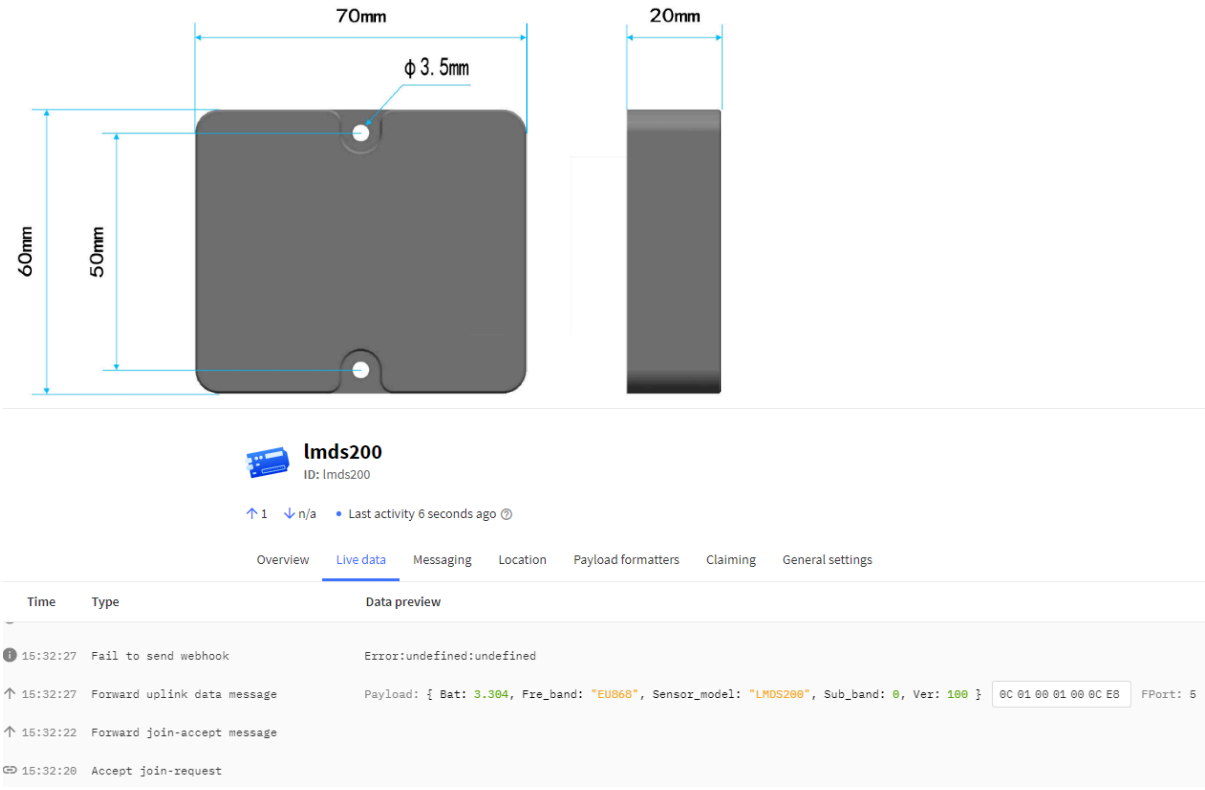


Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
TDC (Transmit Time Interval)	Any	01	4
RESET	Any	04	2
AT+CFM	Any	05	4
INTMOD	Any	06	4

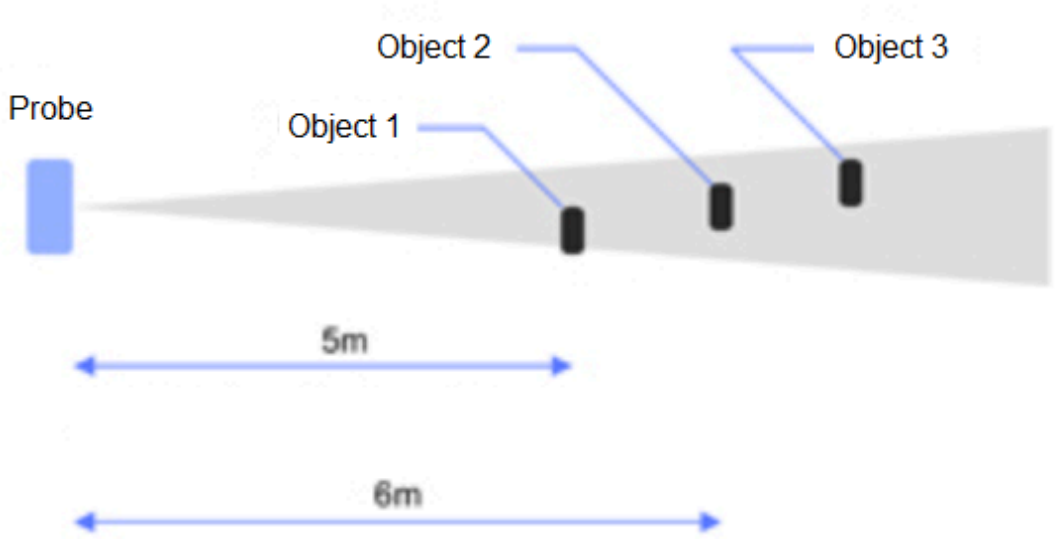

JST-XH-2P
connector

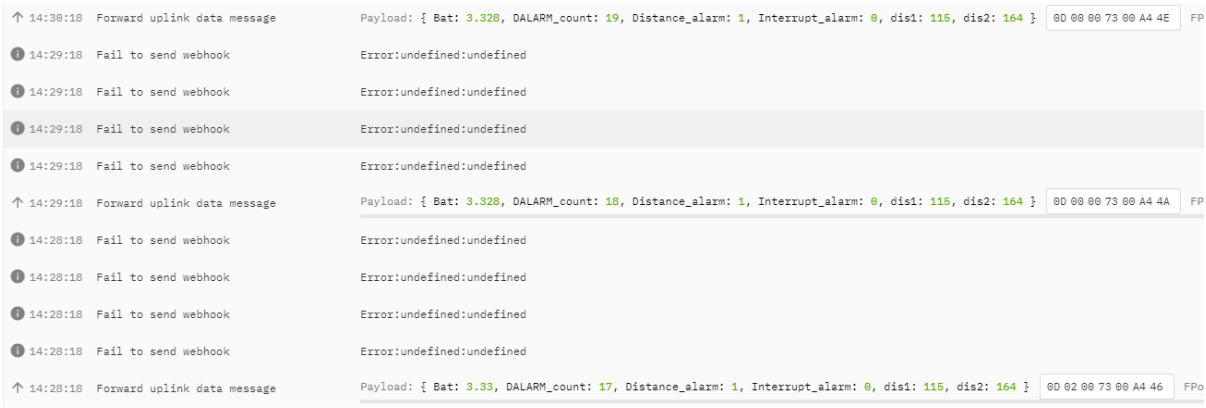

JST-XH-2P
connector


78°
23°

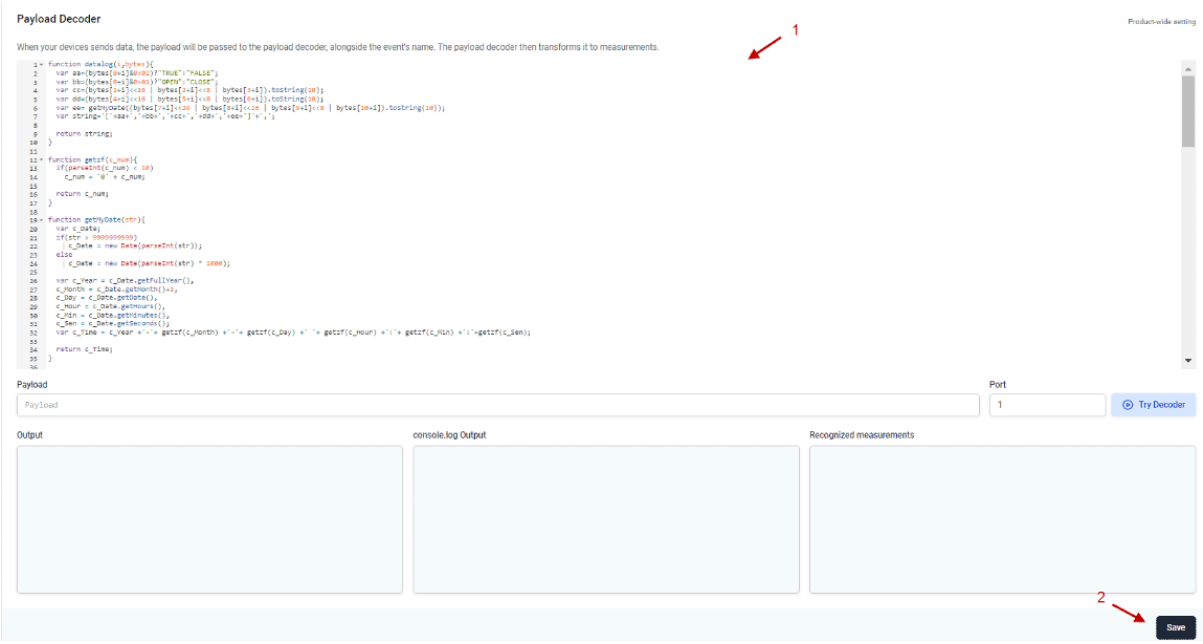


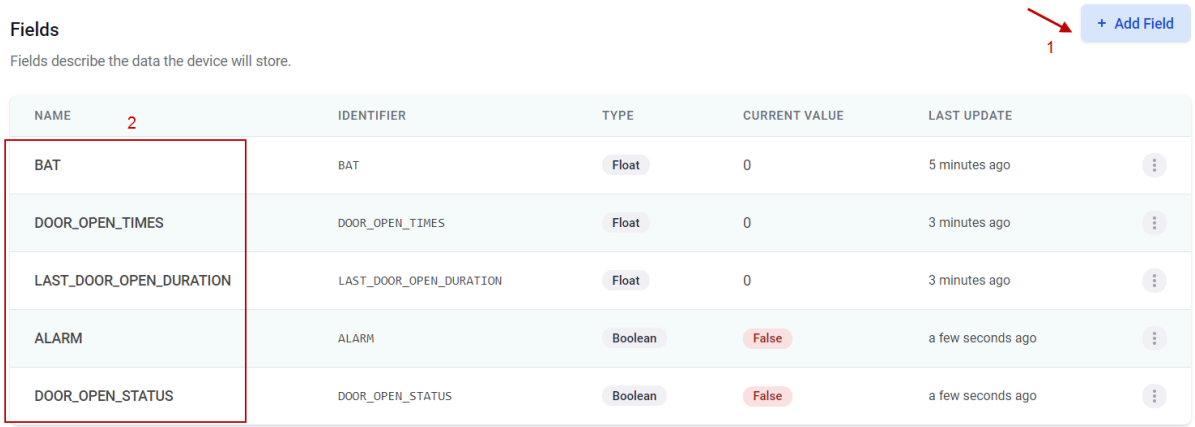
Device Status (FPORT=5)					
Size (bytes)	**1**	**2**	**1**	**1**	**2**
Value	Sensor Model	Firmware Version	Frequency Band	Sub-band	BAT

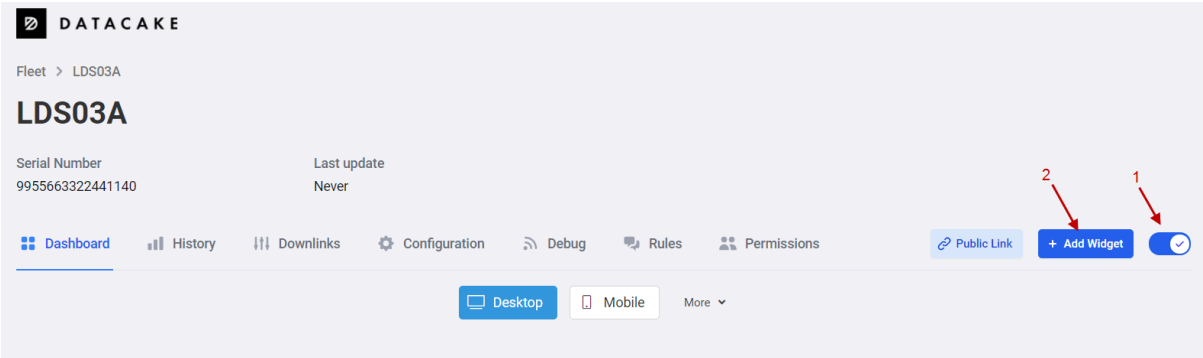


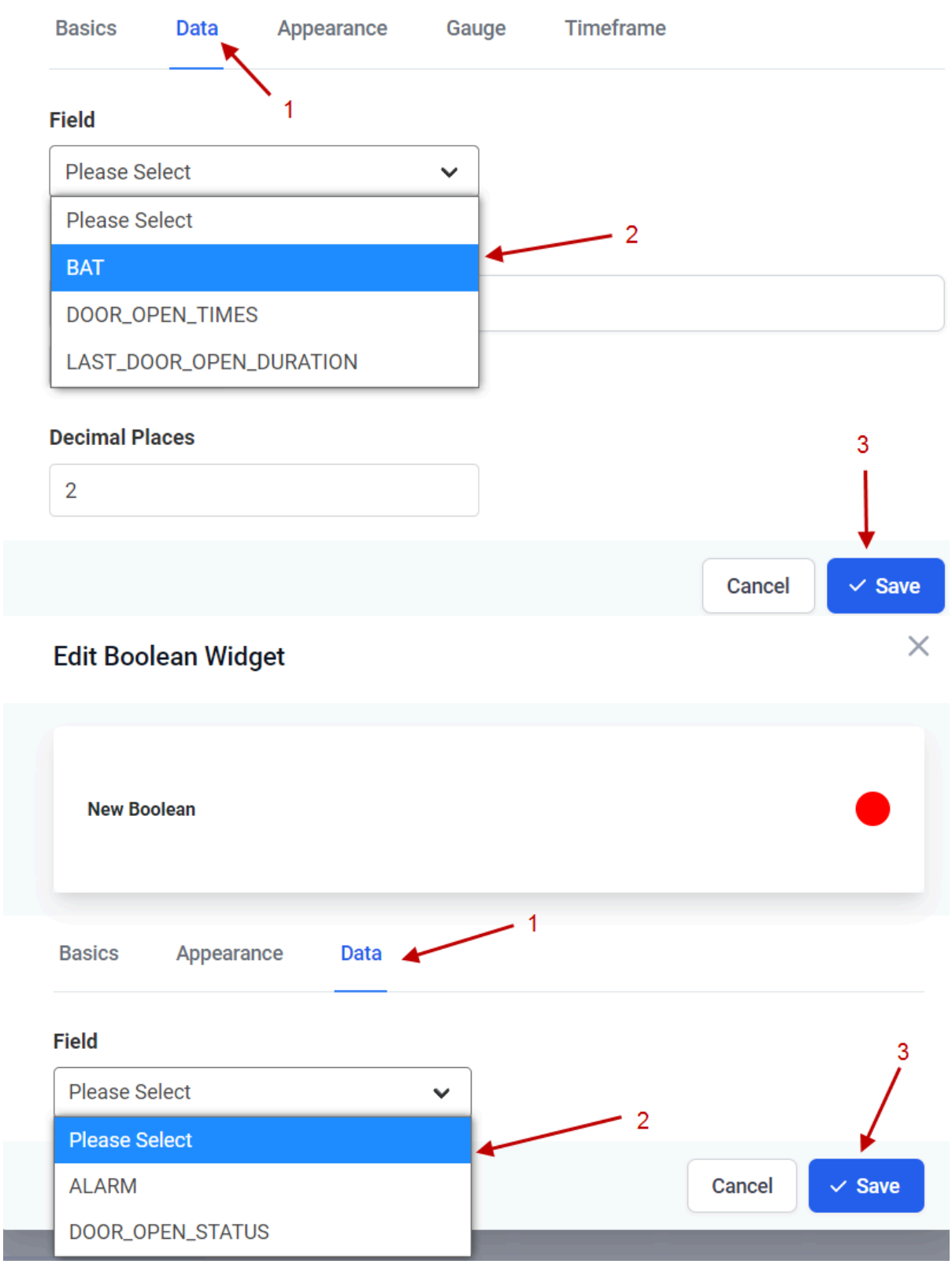


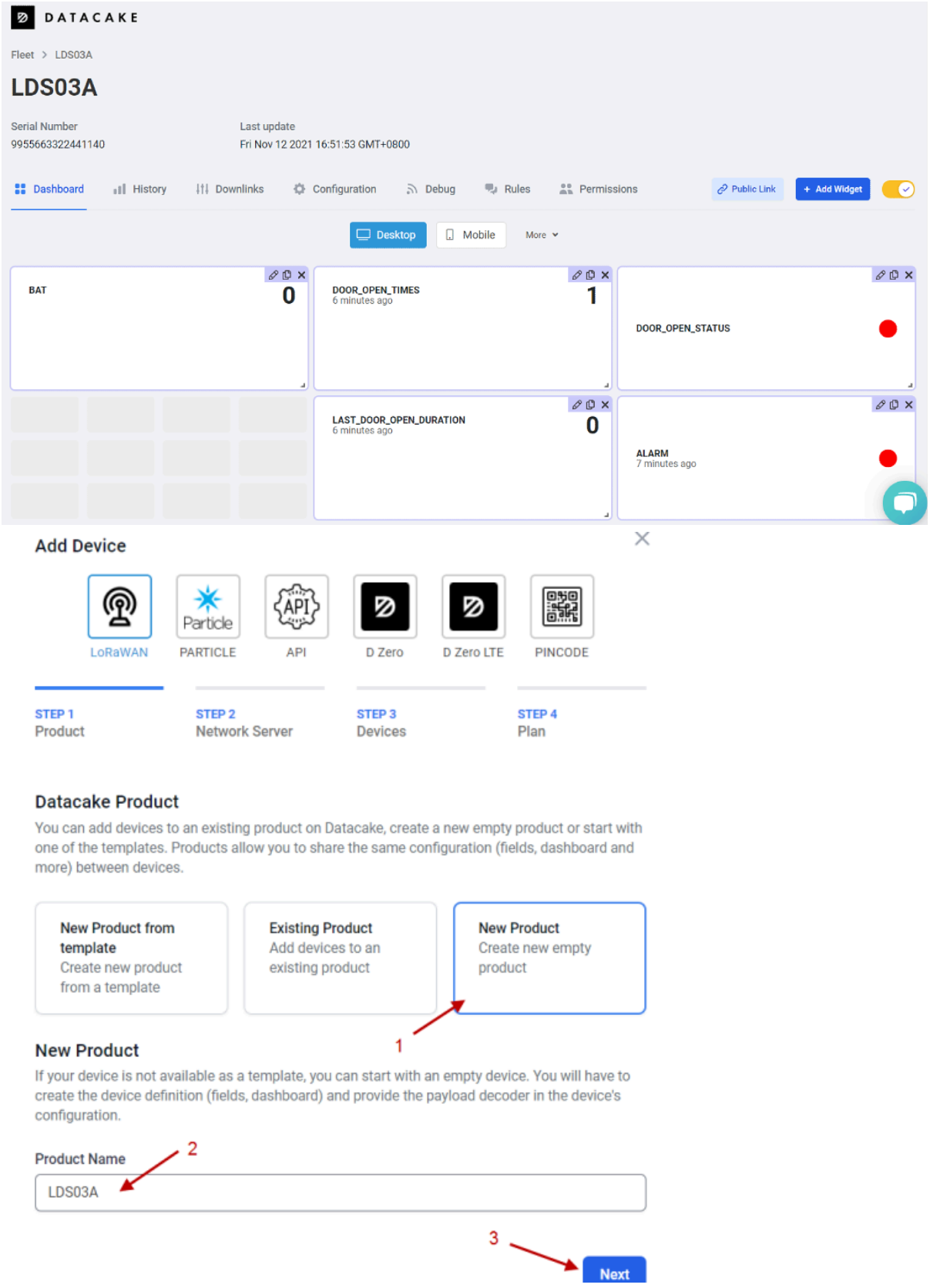
Status & Alarm field			
Size (bit)	**6**	**1**	**1**
Value	DALARM Counter	Distance Alarm 0: Normal Value 1: Distance Alarm	Interrupt Alarm 0: No Alarm 1: external Interrupt Alarm

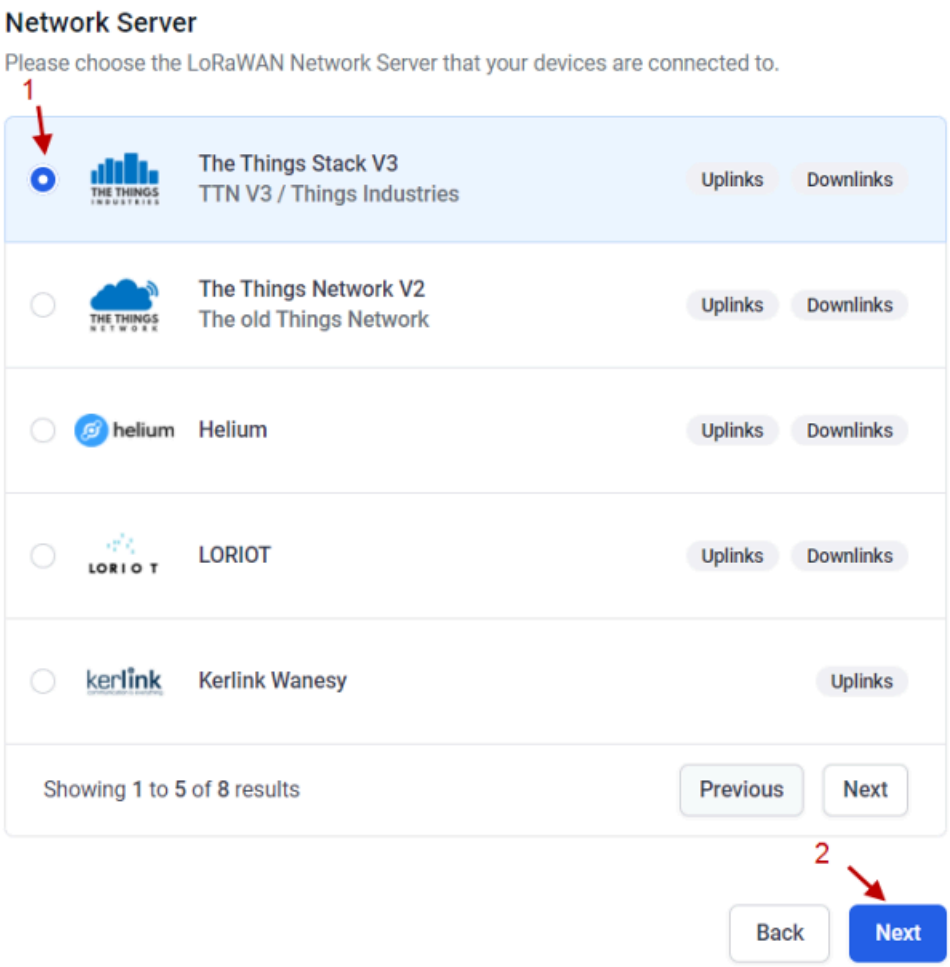

Payload Decoder
Product-wide setting
When your devices sends data, the payload will be passed to the payload decoder, alongside the event's name. The payload decoder then transforms it to measurements.
1
Payload
Port
Payload
1
Try Decoder
Output
console.log Output
Recognized measurements
2
Save

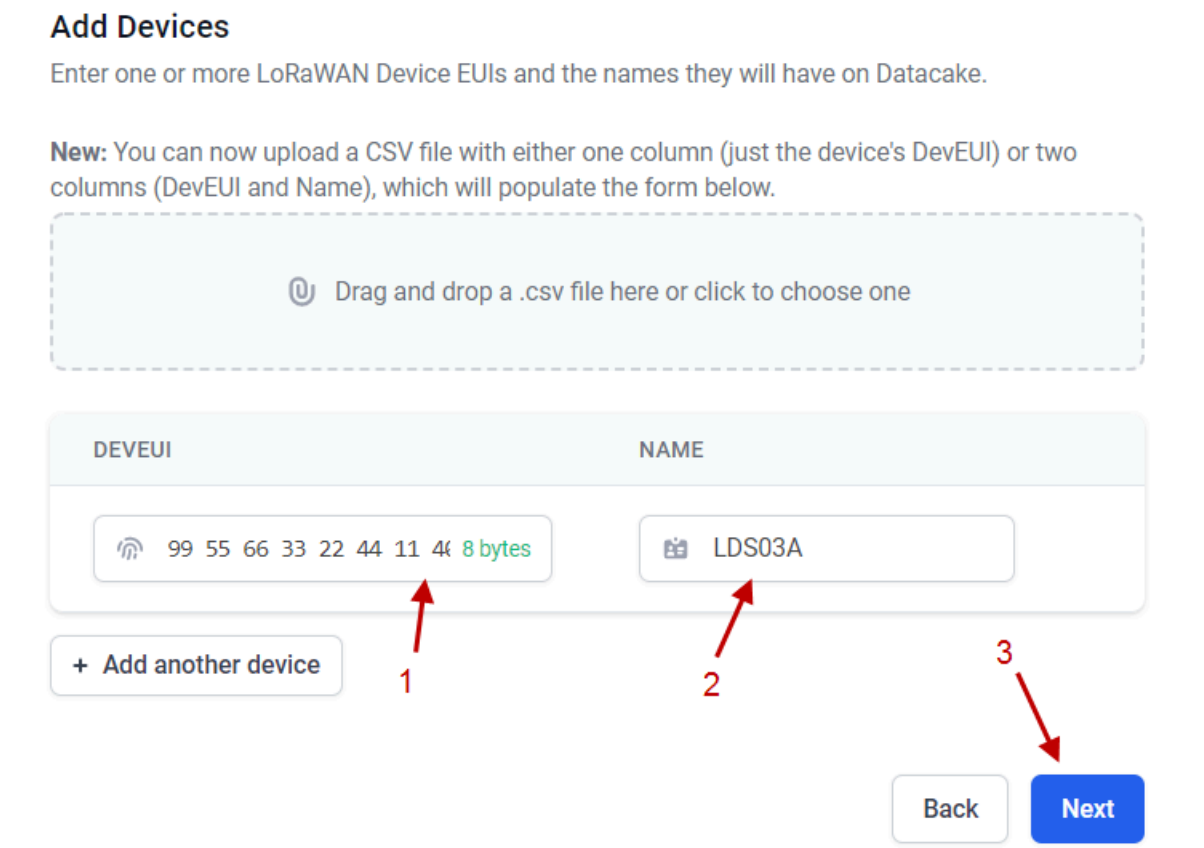

Fields
Fields describe the data the device will store.
1
+ Add Field
2
NAME
IDENTIFIER
TYPE
CURRENT VALUE
LAST UPDATE
BAT
BAT
Float
0
5 minutes ago
DOOR_OPEN_TIMES
DOOR_OPEN_TIMES
Float
0
3 minutes ago
LAST_DOOR_OPEN_DURATION
LAST_DOOR_OPEN_DURATION
Float
0
3 minutes ago
ALARM
ALARM
Boolean
False
a few seconds ago
DOOR_OPEN_STATUS
DOOR_OPEN_STATUS
Boolean
False
a few seconds ago

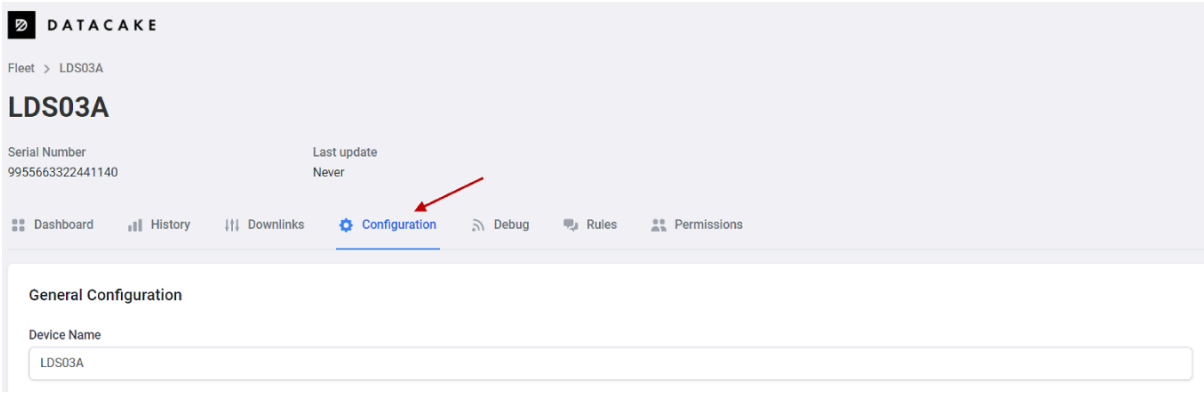

DATACAKE
Fleet > LDS03A
LDS03A
Serial Number
9955663322441140
Last update
Never
2
1
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
Public Link
+ Add Widget
Desktop
Mobile
More


Basics
Data
Appearance
Gauge
Timeframe
1
Field
Please Select
Please Select
BAT
DOOR_OPEN_TIMES
LAST_DOOR_OPEN_DURATION
2
Decimal Places
2
3
Cancel
Save
Edit Boolean Widget
New Boolean
Basics
Appearance
Data
1
Field
Please Select
Please Select
ALARM
DOOR_OPEN_STATUS
2
3
Cancel
Save

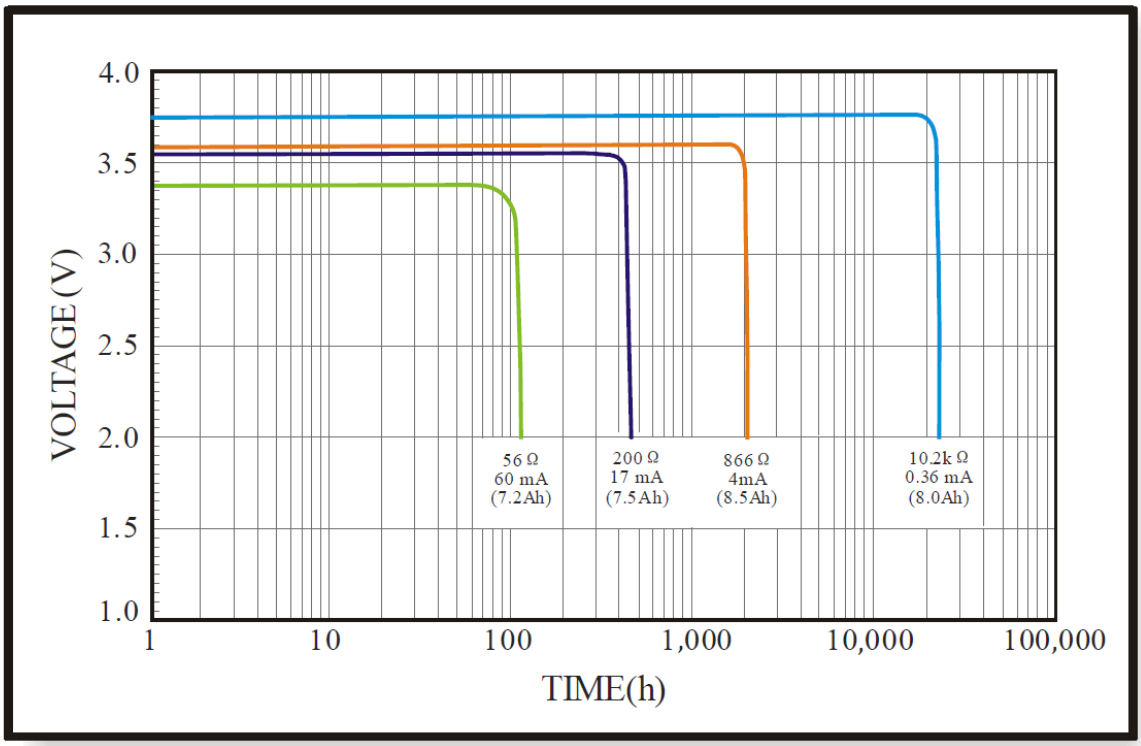

DATACAKE
Fleet > LDS03A
LDS03A
Serial Number
9955663322441140
Last update
Fri Nov 12 2021 16:51:53 GMT+0800
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
Public Link
+ Add Widget
Desktop
Mobile
More
BAT
0
DOOR_OPEN_TIMES
6 minutes ago
1
DOOR_OPEN_STATUS
LAST_DOOR_OPEN_DURATION
6 minutes ago
0
ALARM
7 minutes ago
Add Device
LoRaWAN
PARTICLE
API
D Zero
D Zero LTE
PINCODE
STEP 1
Product
STEP 2
Network Server
STEP 3
Devices
STEP 4
Plan
Datacake Product
You can add devices to an existing product on Datacake, create a new empty product or start with one of the templates. Products allow you to share the same configuration (fields, dashboard and more) between devices.
New Product from template
Create new product from a template
Existing Product
Add devices to an existing product
New Product
Create new empty product
1
New Product
If your device is not available as a template, you can start with an empty device. You will have to create the device definition (fields, dashboard) and provide the payload decoder in the device's configuration.
Product Name
2
LDS03A
3
Next

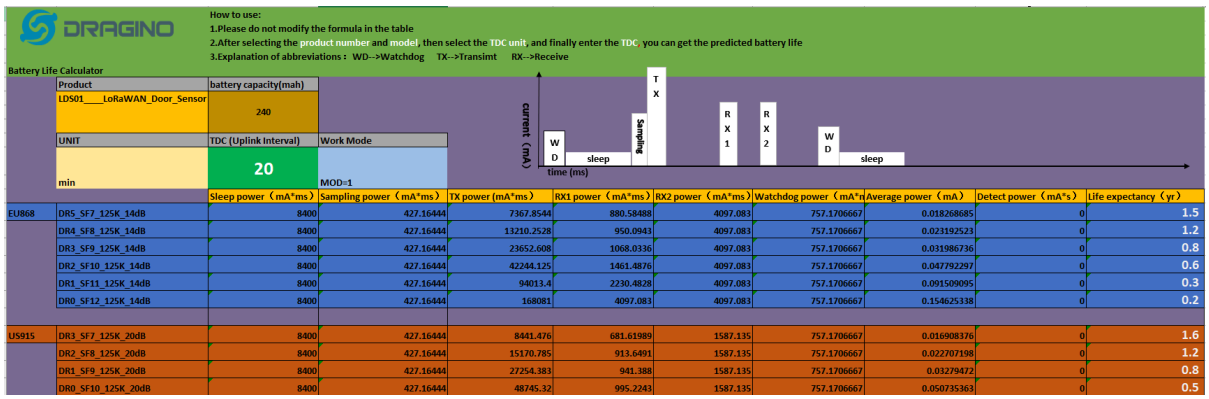

Network Server
Please choose the LoRaWAN Network Server that your devices are connected to.
1
The Things Stack V3
TTN V3 / Things Industries
Uplinks
Downlinks
The Things Network V2
The old Things Network
Uplinks
Downlinks
helium
Helium
Uplinks
Downlinks
LORIOT
LORIOT
Uplinks
Downlinks
kerlink
Kerlink Wanesy
Uplinks
Showing 1 to 5 of 8 results
Previous
Next
2
Back
Next


Add Devices
Enter one or more LoRaWAN Device EUIs and the names they will have on Datacake.
New: You can now upload a CSV file with either one column (just the device's DevEUI) or two columns (DevEUI and Name), which will populate the form below.
Drag and drop a .csv file here or click to choose one
DEVEUI
NAME
99 55 66 33 22 44 11 4(8 bytes
LDS03A
+ Add another device
1
2
3
Back
Next


DATACAKE
Fleet > LDS03A
LDS03A
Serial Number
9955663322441140
Last update
Never
Dashboard
History
Downlinks
Configuration
Debug
Rules
Permissions
General Configuration
Device Name
LDS03A

1. Typical discharge profile at +20℃(Typical value)





DRAGINO

How to use:
1.Please do not modify the formula in the table
2.After selecting the product number and model, then select the TDC unit, and finally enter the TDC, you can get the predicted battery life
3.Explanation of abbreviations : WD-->Watchdog TX-->Transimt RX-->Receive

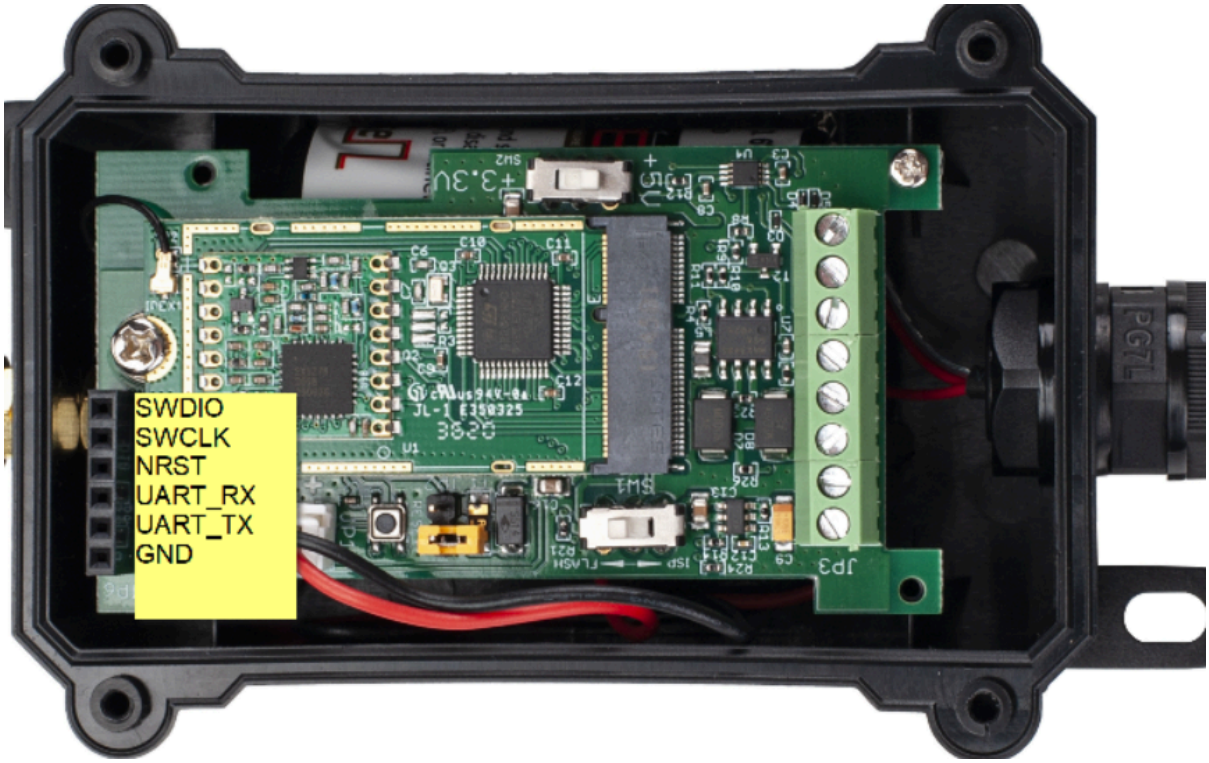
Battery Life Calculator

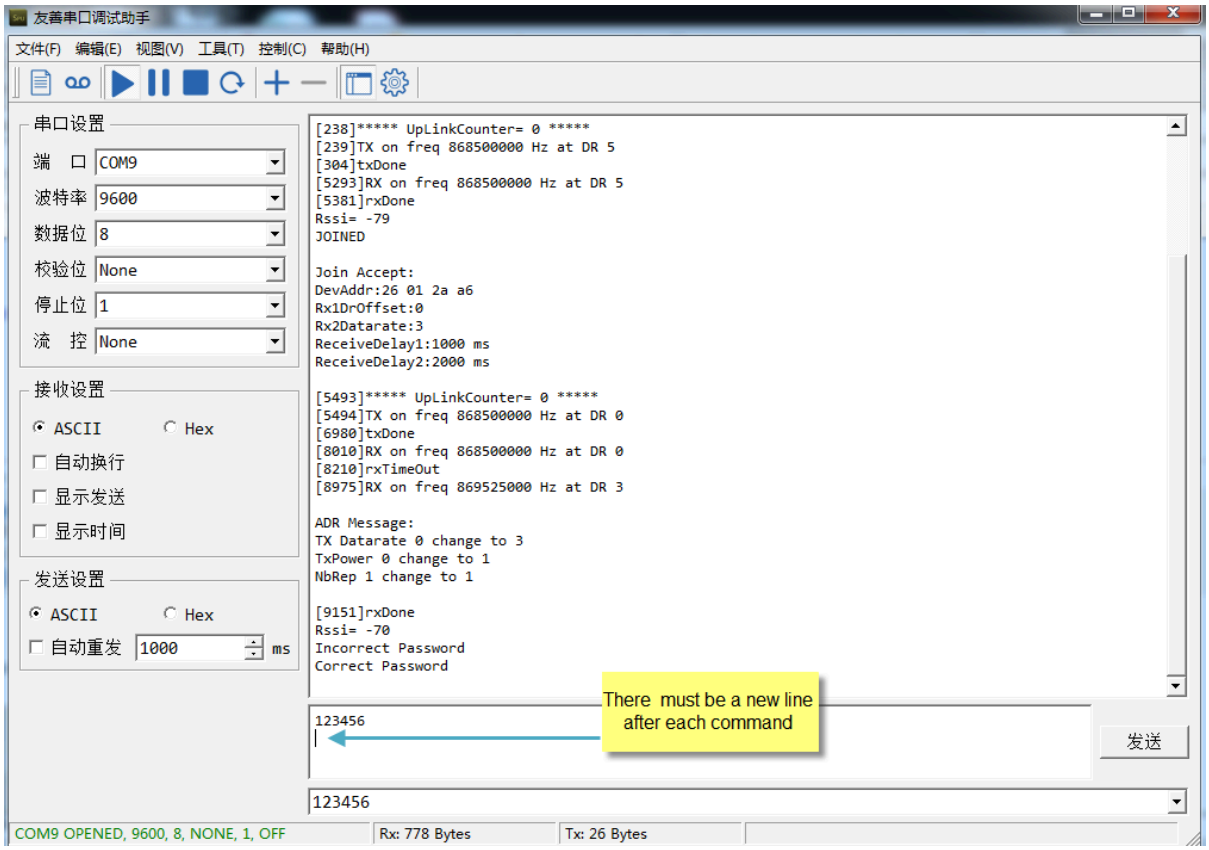
Product	battery capacity(mah)
LDS01___LoRaWAN_Door_Sensor	240

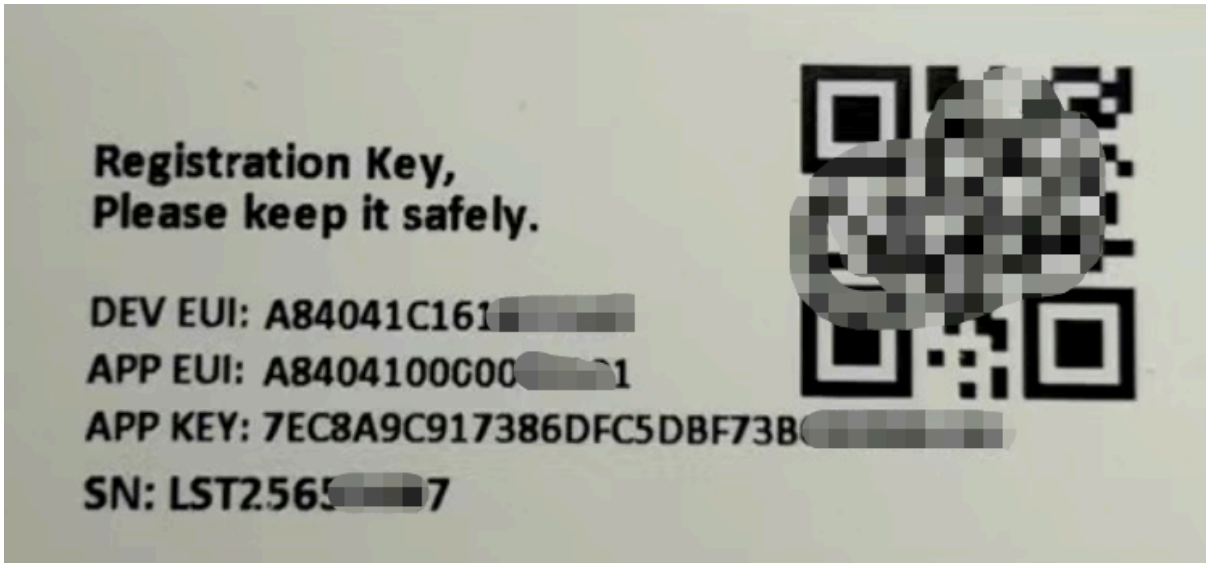
UNIT	TDC (Uplink Interval)	Work Mode
min	20	MOD=1

		Sleep power（mA*ms）	Sampling power（mA*ms）	TX power (mA*ms)	RX1 power（mA*ms）	RX2 power（mA*ms）	Watchdog power（mA*m	Average power（mA）	Detect power（mA*s）	Life expectancy（yr）
EU868	DR5_SF7_125K_14dB	8400	427.16444	7367.8544	880.58488	4097.083	757.1706667	0.018268685	0	1.5
	DR4_SF8_125K_14dB	8400	427.16444	13210.2528	950.0943	4097.083	757.1706667	0.023192523	0	1.2
	DR3_SF9_125K_14dB	8400	427.16444	23652.608	1068.0336	4097.083	757.1706667	0.031986736	0	0.8
	DR2_SF10_125K_14dB	8400	427.16444	42244.125	1461.4876	4097.083	757.1706667	0.047792297	0	0.6
	DR1_SF11_125K_14dB	8400	427.16444	94013.4	2230.4828	4097.083	757.1706667	0.091509095	0	0.3
	DR0_SF12_125K_14dB	8400	427.16444	168081	4097.083	4097.083	757.1706667	0.154625338	0	0.2
US915	DR3_SF7_125K_20dB	8400	427.16444	8441.476	681.61989	1587.135	757.1706667	0.016908376	0	1.6
	DR2_SF8_125K_20dB	8400	427.16444	15170.785	913.6491	1587.135	757.1706667	0.022707198	0	1.2
	DR1_SF9_125K_20dB	8400	427.16444	27254.383	941.388	1587.135	757.1706667	0.03279472	0	0.8
	DR0_SF10_125K_20dB	8400	427.16444	48745.32	995.2243	1587.135	757.1706667	0.050735363	0	0.5

Command Example	Function	Response
AT+ATDC?	Show current alarm transmit Interval	1 OK the interval is 1 minute
AT+ATDC=1	Set Alarm Transmit Interval	OK Set alarm transmit interval to 1 min


SWDIO
SWCLK
NRST
UART_RX
UART_TX
GND


友善串口调试助手
文件(F) 编辑(E) 视图(V) 工具(T) 控制(C) 帮助(H)
串口设置
端 口 COM9
波特率 9600
数据位 8
校验位 None
停止位 1
流 控 None
接收设置
ASCII Hex
自动换行
显示发送
显示时间
发送设置
ASCII Hex
自动重发 1000 ms
[238]***** UpLinkCounter= 0 *****
[239]TX on freq 868500000 Hz at DR 5
[304]txDone
[5293]RX on freq 868500000 Hz at DR 5
[5381]rxDone
Rssi= -79
JOINED
Join Accept:
DevAddr:26 01 2a a6
Rx1DrOffset:0
Rx2Datarate:3
ReceiveDelay1:1000 ms
ReceiveDelay2:2000 ms
[5493]***** UpLinkCounter= 0 *****
[5494]TX on freq 868500000 Hz at DR 0
[6980]txDone
[8010]RX on freq 868500000 Hz at DR 0
[8210]rxTimeOut
[8975]RX on freq 869525000 Hz at DR 3
ADR Message:
TX Datarate 0 change to 3
TxPower 0 change to 1
NbRep 1 change to 1
[9151]rxDone
Rssi= -70
Incorrect Password
Correct Password
There must be a new line after each command
123456
发送
123456
COM9 OPENED, 9600, 8, NONE, 1, OFF
Rx: 778 Bytes
Tx: 26 Bytes




```
[10:51:38.308] 8034700 1970/1/3 18:27:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:38.368] 8034710 1970/1/3 18:28:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:38.438] 8034720 1970/1/3 18:29:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:38.508] 8034730 1970/1/3 18:30:47 88 0 0 0 distance1=3276 distance2=308
[10:51:38.568] 8034740 1970/1/3 18:31:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:38.638] 8034750 1970/1/3 18:32:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:38.708] 8034760 1970/1/3 18:33:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:38.768] 8034770 1970/1/3 18:34:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:38.868] 8034780 1970/1/3 18:35:47 3283 0 0 0 distance1=3276 distance2=309
[10:51:38.938] 8034790 1970/1/3 18:36:47 3283 0 0 0 distance1=3276 distance2=309
[10:51:39.008] 80347A0 1970/1/3 18:37:47 3283 0 0 0 distance1=3276 distance2=309
[10:51:39.068] 80347B0 1970/1/3 18:38:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:39.138] 80347C0 1970/1/3 18:39:47 3283 0 0 0 distance1=3276 distance2=310
[10:51:39.208] 80347D0 1970/1/3 18:40:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:39.268] 80347E0 1970/1/3 18:41:47 3283 0 0 0 distance1=3276 distance2=308
[10:51:39.338] 80347F0 1970/1/3 18:42:47 3283 0 0 0 distance1=3276 distance2=307
[10:51:39.438] 8034800 1970/1/3 18:43:47 3283 0 0 0 distance1=3276 distance2=308
```

```
803BC50 2023/7/31 22:20:40 3283 0 0 0 distance1=260 distance2=382
[10:53:51.241] 803BC60 2023/7/31 22:21:40 3283 0 0 0 distance1=260 distance2=383
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[10:53:52.773] 803BDC0 2023/7/31 22:43:40 3283 0 0 0 distance1=260 distance2=382
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