

# WisNode-Lora EVB

## Quick Start Guide

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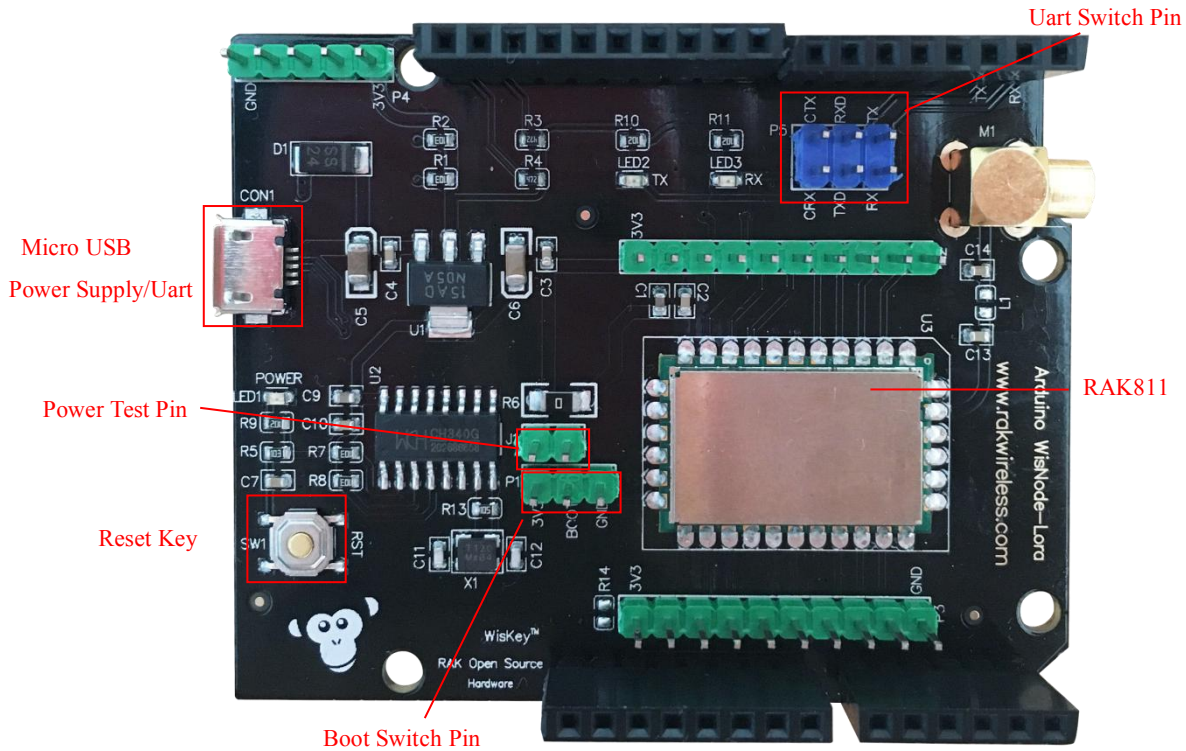
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## 1. General Description

The following image is RAK WisNode-Lora development board, and it compatible Arduino development board, It also can be used as an extension board development with Arduino. The interface resource are as follow:



| Function           | Name         | Description  |
|--------------------|--------------|--|
| Module             | U3           | RAK811 Lora module   |
| External Interface | Micro USB    | Power Supply; DC 5V Input,USB to TTL communication interface                 |
| Key                | Reset        | Module Reset Key   |
| Leading Foot       | P1           | Boot Switch Pin, When Boot Pin Switch to 3.3V Module will into the Boot Mode |
|                    | P4           | Debug Pin  |
|                    | P5           | Uart Switch Pin  |
| Power Test         | J1           | Module Power Test Pin  |
| LED Indicator      | LED1 (Power) | Power Indicator Light  |

## 2. Quick Start Demonstrate

Use Micro USB interface to the module power supply. One end of the serial line is connected to the module, and one end is connected to the computer. Then open the Uart Assist Tool, send AT command to operate the module.

### 2.1 Join-Otaa

Welcome to RAK811

```
at+mode=0          /* SET LoraWAN work mode */  
OK
```

```
at+get_config=dev_eui      /* GET Dev_EUI check */  
OK3037343644357402
```

```
at+set_config=app_eui:39d7119f920f7952&app_key:a6b08140dae1d795ebfa5a6dee1f4dbd  
/* SET LoraGateway app_eui and app_key , big endian*/  
OK
```

```
at+join=otaa      /* Join OTAA type*/  
OK  
at+recv=3,0,0    /* Join status success*/
```

### 2.2 Join-Abp

Welcome to RAK811

```
at+mode=0          /* SET LoraWAN work mode */  
OK
```

```
at+set_config=dev_addr:00112233&nwks_key:3432567afde4525e7890cfea234a5821&apps_key:a48adfc393a0de4  
58319236537a11d90 /* SET LoraGateway dev_addr nwks_key and apps_key , big endian*/  
OK
```

```
at+join=abp      /* Join ABP type*/  
OK  
at+recv=3,0,0    /* Join status success*/
```

### 2.3 LoraWAN send&recv

*/\*After join gateway success, then can send and receive data\*/*

```
at+send=0,2,000000000000007F00000000000000 /*APP port:2, battery level 50%, unconfirmed message*/  
at+recv=2,0,0 /*unconfirmed mean tx success*/
```

```
at+send=1,2,000000000000007F00000000000000 /*APP port :2, battery level 50%, confirmed message*/  
at+recv=1,0,0 /*confirmed mean receive ack from gateway*/
```

```
/*If gateway has data to send module, will receive date meanwhile ack */
at+recv=0,2,10,30313233343536373839 /*APP port :2, receive size 10, hex:
30313233343536373839*/
```

## 2.4 P2P send&recv

```
/* Module A Rx Side*/
Welcome to RAK811
```

```
at+mode=1 /* SET LoraP2P work mode */
OK
```

```
at+rf_config=867700000,10,0,1,8,14 /* SET LoraP2P Frequency:867.7MHz, SF10,Bandwidth 125KHz, coding
Rate:4/5, Preamlen:8, tx power:14dbm */
OK
```

```
at+rx=1 /* SET LoraP2P Rx continue enable report rx data */
OK
```

```
at+rx_stop /* If want stop Rx continue */
```

```
/* Module B Tx Side*/
Welcome to RAK811
```

```
at+mode=1 /* SET LoraP2P work mode */
OK
```

```
at+rf_config=867700000,10,0,1,8,14 /* SET LoraP2P Frequency:867.7MHz, SF10,Bandwidth 125KHz, coding
Rate:4/5, Preamlen:8, tx power:14dbm */
OK
```

```
at+txc=100,1000,800100000600010002da9557e142d9 /* SET LoraP2P Tx continue ,100 packets, 1S interval, hex
data */
OK
```

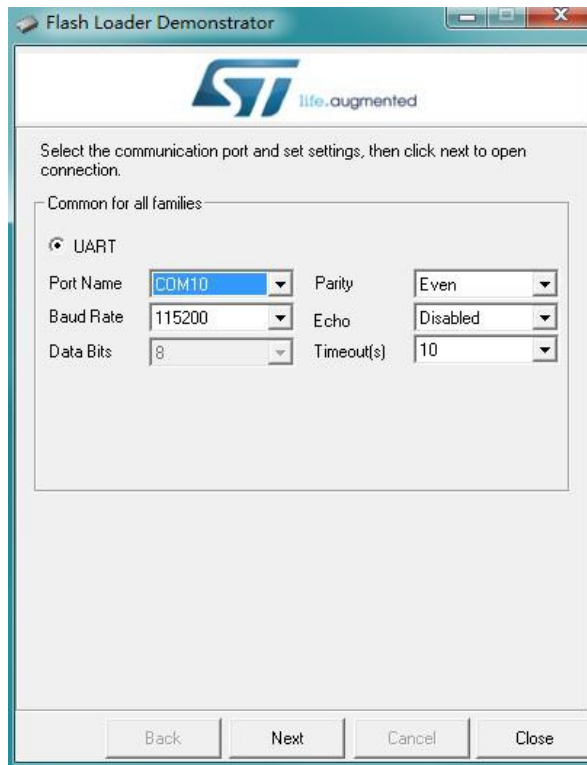
```
at+recv=9,0,0 /*When Tx complete */
```

```
at+tx_stop /* If want stop Tx continue */
```

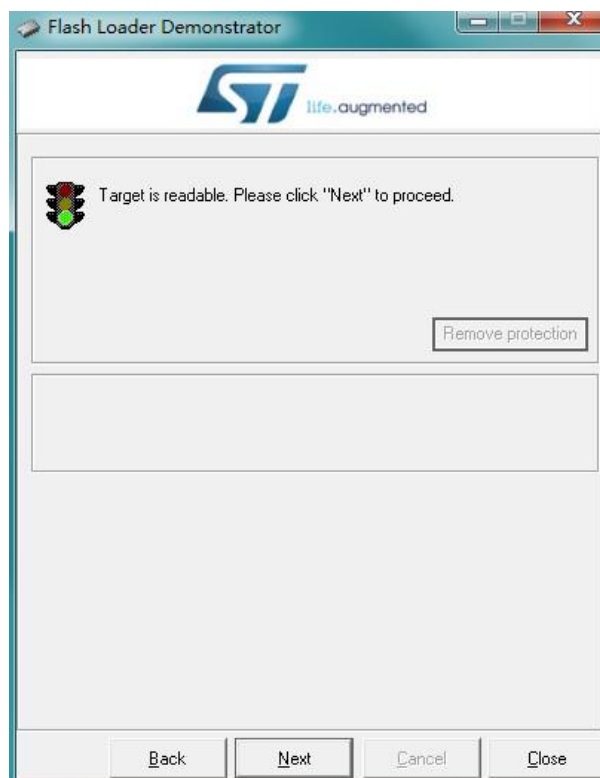
### 3. How To Upgrade Firmware

To upgrade the Lora module, First we should make the module get into Boot mode. We should switch the P1 pin make the Boot pin connection with 3.3V Pin. Then reset the module, Operate according to the steps:

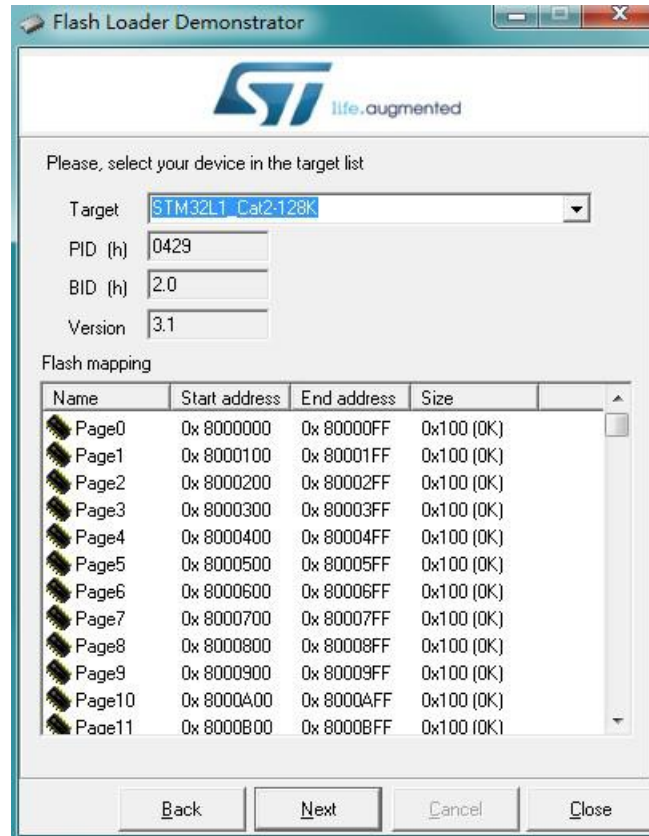
1. Open the Flash Loader Demonstrator tool, Set the serial port parameters;



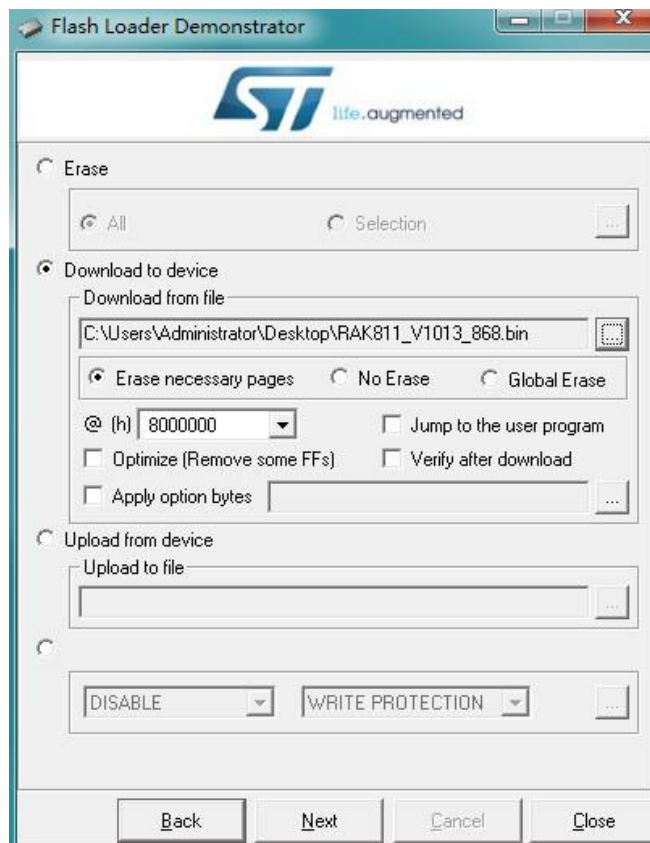
2. Click the "NEXT" button, arrive the following interface;



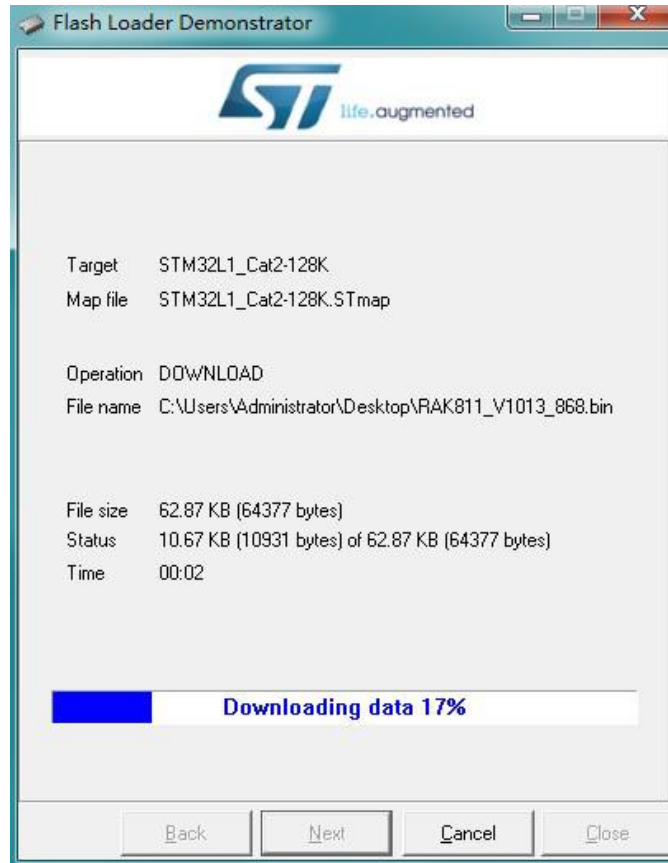
3. The again the “Next” button, Choose STM32L1\_Cat2-128K;



4. Choose “Download to device”, Set the path to the new firmware, and click “NEXT” button.



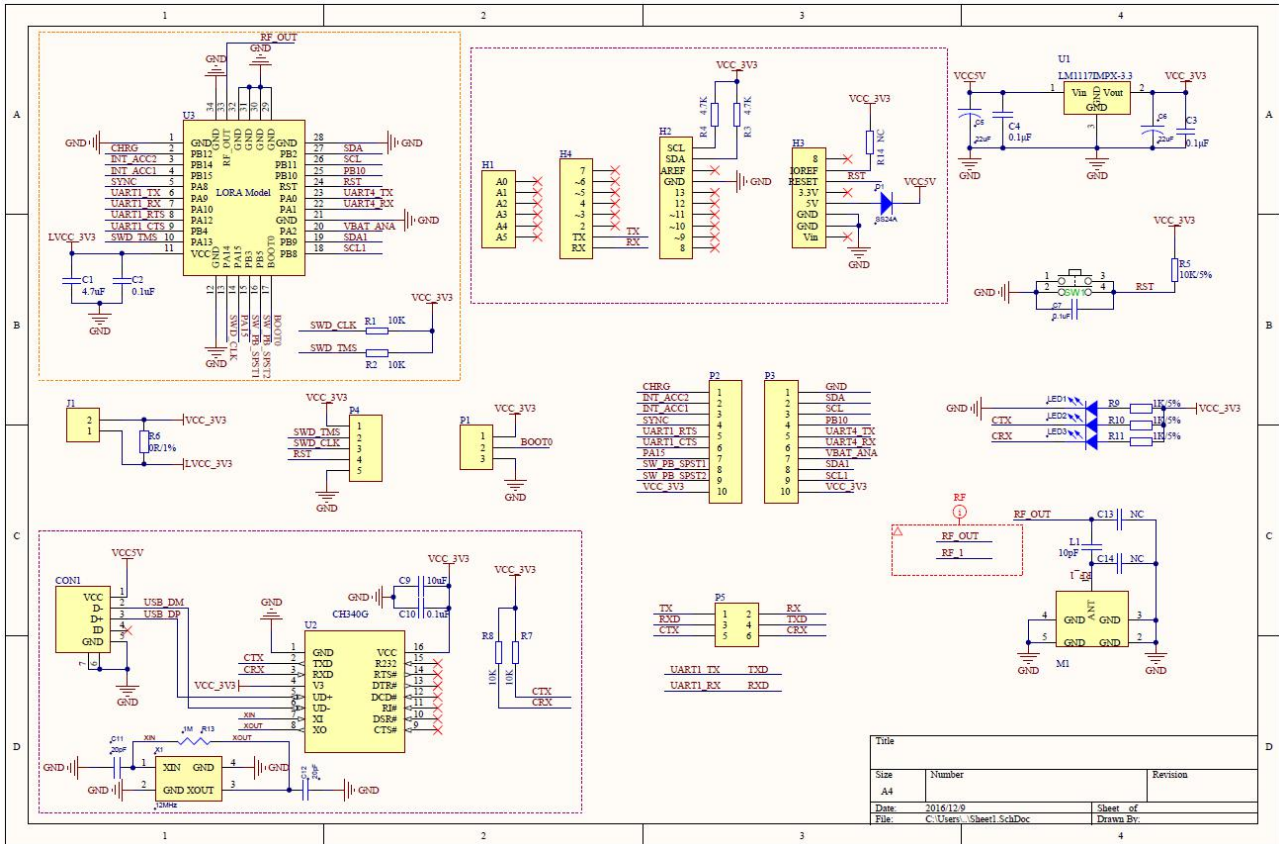
5. Upgrading:



6. Upgrade Successful.



## 4. Appendix





## 5. Modify Record

| Version | Author       | Data       | Modify content  |
|---------|--------------|------------|-----------------|
| V1.0    | caoxiaocheng | 2016/12/09 | Create Document |