User Manual for

RAK DFU Tool Function Description

Version 1.3 | August 2020

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1. Brief

Rak products support firmware upgrade to update application firmware. When a module releases new firmware, which optimizes the processing logic or adds new functions, users can use the firmware upgrade tool to update the firmware of the module. The core function of the software is to send the firmware file to the module through UART using the ymodem protocol.

The software supports the upgrade of standard modules and products. The standard module includes rak811, rak4200, rak4270. The products include rak7201, rak7204, etc.

The main interface of the tool is as follows.
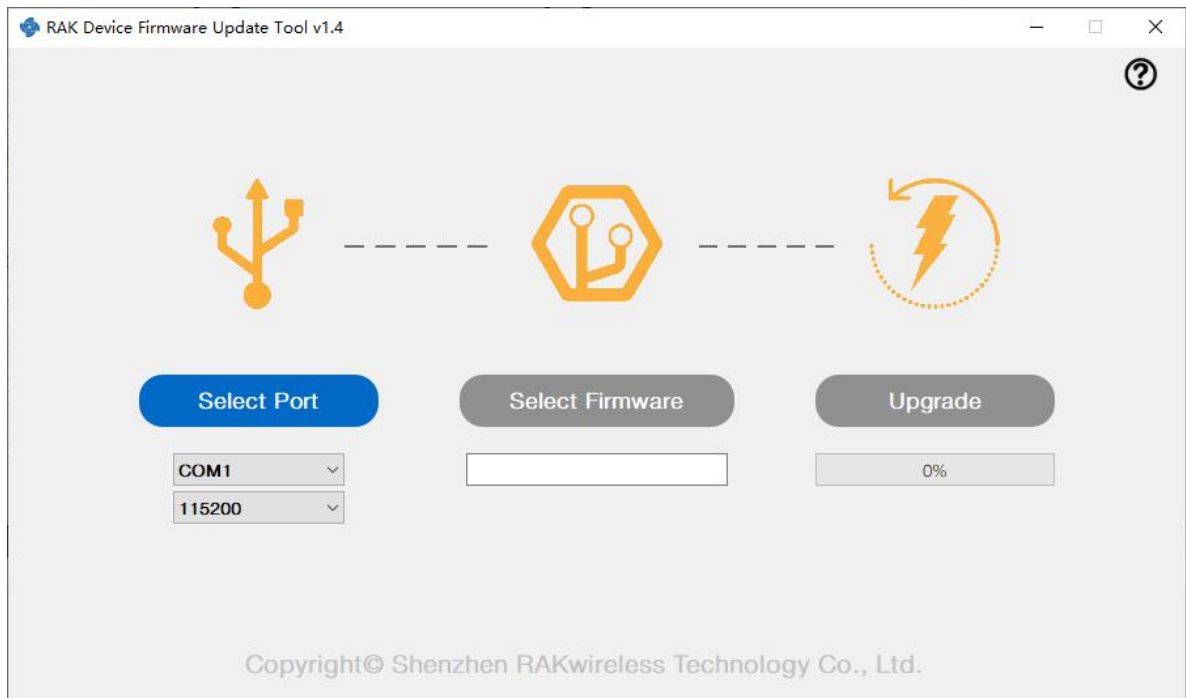
The tool can be started by double-clicking on the Windows platform. On Linux and Mac platforms, it needs to be started via the command line in the terminal.

In the Ubuntu system, the startup commands and the interface after startup are as follows.

```
cd RAK_DFU_Tool/bin/
chmod +x RAK_Device_Firmware_Upgrade_Tool_v1.4
sudo ./RAK_Device_Firmware_Upgrade_Tool_v1.4
```
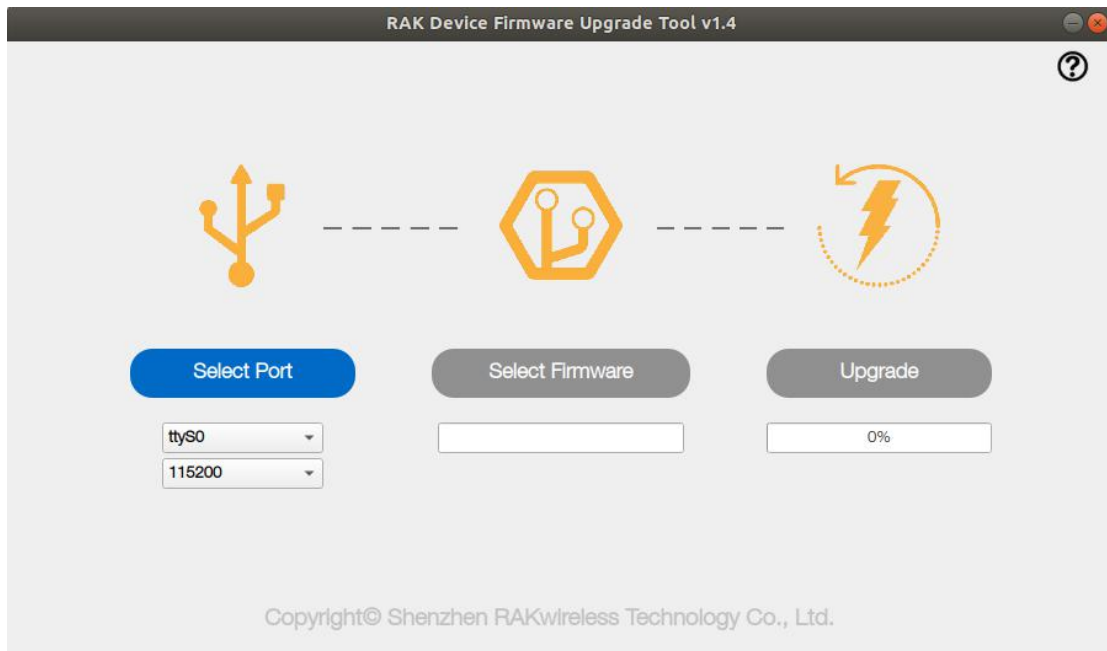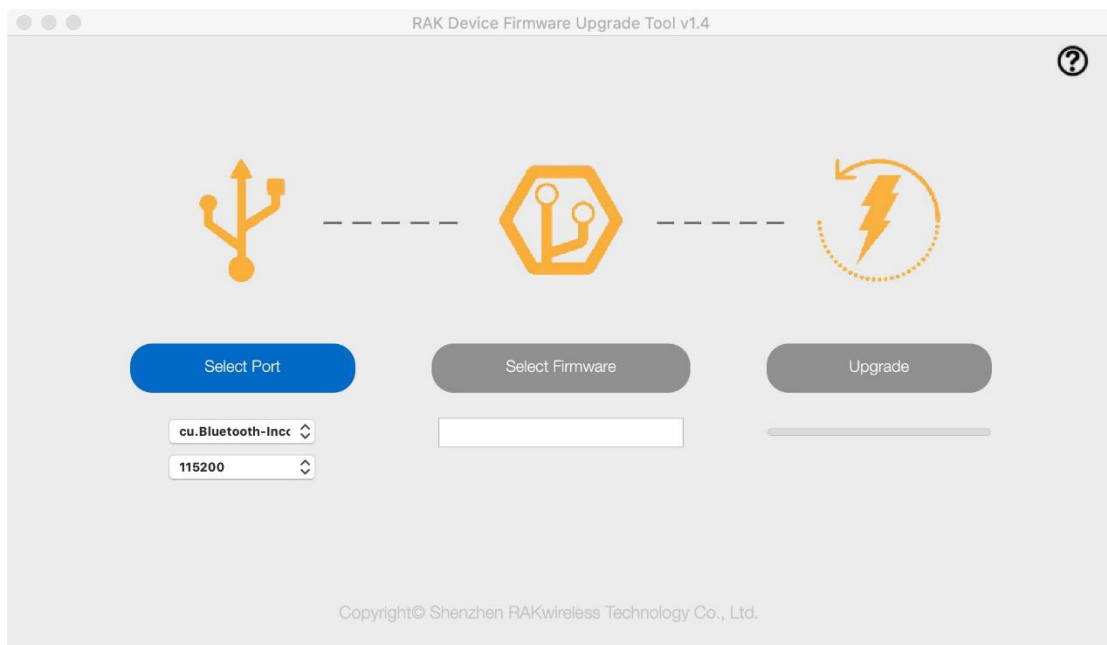
In the MacOS system, the startup commands and the interface after startup are as follows.

cd RAK\ DFU\ Tool\ v1.4.app/Contents/MacOS/
./RAK\ DFU\ Tool\ v1.4

```
MacOS — -bash — 100×21
[rakwirelessdeMacBook-Pro:Desktop rakwireless$ cd RAK\ DFU\ Tool\ v1.4.app/Contents/MacOS/        ]
[rakwirelessdeMacBook-Pro:MacOS rakwireless$ ./RAK\ DFU\ Tool\ v1.4 ▯                              ]
```

RAK Device Firmware Upgrade Tool v1.4

Select Port   Select Firmware   Upgrade

cu.Bluetooth-Inco

115200

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2. Function Description

The process for users to use DFU tools is as follows.

1. First, connect the computer and the module together, so that they can communicate with each other through the serial port.
2. After starting the software, select the serial port number and communication baud rate connected with the module. Click the "Select Port" button.
3. Click the "Select Firmware" button to select the firmware to be upgraded. Generally, the suffix of the firmware is ".bin".
4. Click the "Upgrade" button to start the upgrade process.

For DFU tools, the main processing logic is under the "Upgrade" button. The functions of DFU are listed below.

1. After clicking the upgrade button, the DFU tool first sends the command "at+version\r\n" to the module.
2. DFU tool sends "at+boot\r\n" command, the module will switch to bootloader mode, and send "<BOOT MODE>\r\n" to the tool.
3. DFU tool sends "at+update\r\n", and the module switches to upgrade state.
4. The DFU tool sends the upgrade firmware selected by the user according to the ymodem protocol.

Note:

1. The firmware version supported by the tool should be 3. x.x.14 or above.
2. The baud rate range supported by the module application firmware is 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.
3. If the upgrade process is interrupted, reset the module and reopen the upgrade tool for upgrade operation.

3. Data flow example

The following grabs the serial data interaction data in the process of upgrade start and end.

Phase in the picture indicates the direction of data transmission, out indicates the data from DFU tool to module, in indicates the data from module to DFU tool. The data selected in the red box in the second picture is the initialization information printed by the application firmware after the module is upgraded successfully.

4. Contact Information

Please contact us if you need technical support or want to know more information.

Document Center: https://doc.rakwireless.com/

Resource Downloads: https://downloads.rakwireless.com

Forum Supports: https://forum.rakwireless.com/

Github: github.com/RAKWireless

Email: info@rakwireless.com

5. Revision History

Revision	Description	Date
1.0	Initial Release.	May 13, 2020
1.1	Add supported modules.	May 15, 2020
1.2	Add software screenshots and notes.	May 22, 2020

6. Document Summary

Prepared by	Checked by:	Approved by:

About RAKwireless:

RAKwireless is a pioneer in providing innovative and diverse Cellular and LoRaWAN connectivity solutions for both Edge and Gateway IoT devices. We believe that through easy to use and modular designs we can accelerate the time to market for various IoT Applications in order to optimize system deployment in both Developer and Commercial settings.