EMB1061 Firmware Programming Manual

Abstract

This document introduces how to programming firmware of EMB1061 with STLink or serial port tool, and some of the introduction is based on BLEKit-1061.

More Help

MXCHIP website：<http://mxchip.com/>，for more products information.

MiCO developer site：<http://mico.io/>，for more MiCO development documents.

FogCloud developer site：<http://easylink.io/>, for more FogCloud development documents.

Version history

Date	Version	Update Note
2017-7-20	V1.0	Release version

Contents

1. Overview

This document introduces how to programming firmware of EMB1061 by STLink or serial port tool, and some of the introduction is based on BLEKit-1061.

Suitable for module:

EMB1061

Hardware tools

64bit-PC(en.STSW-BNRG1STLINK and Firmware Upgrade Tools can only run in 64-bit PC with Windows 7 or above version)

BLEKit-1061, STLink

Software tools

en.STSW-BNRG1STLINK ,   Firmware Upgrade Tools,   EMB1061_AutoManufactureTools.exe

Firmware

EMB1061_AT15_20170707

2. Firmware Upgrade Tools.exe---UART programming

- Get latest Firmware Upgrade Tools.exe from http://www.mxchip.com/product/ble_product/50
- Install USB-UART driver "CDM 2.08.30 WHQL Certified_64"。
- Connect USB port of BLEKit-1061 to PC, for both power supply and serial port communication. There will be a com port of BLEKit-1061 in PC.
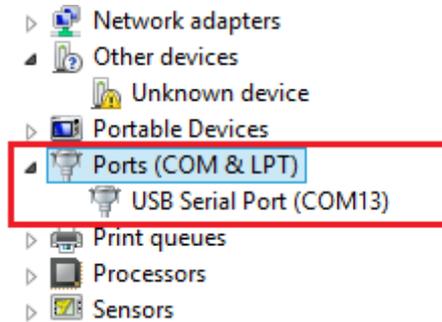
- Enter into Bootloader mode: Make sure EMB1061 is powered on (A red LED beside USB port should be on), hold down Boot button and press RESET button (keep Boot button pressed), then release Boot button. EMB1061 will be in Bootloader mode.
- Open Firmware Upgrade Tools.exe. Click "Module" to choose module: EMB1061. Click "Serial" to choose Serial com port.
- Choose firmware file by click "File"
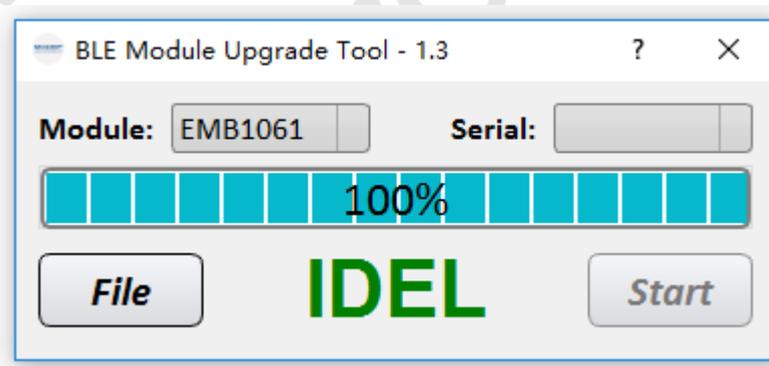
- Click "Start", and there will be a dialog box to remind users to make sure EMB1061 is in Bootloader mode. Click OK, then firmware programming will start.
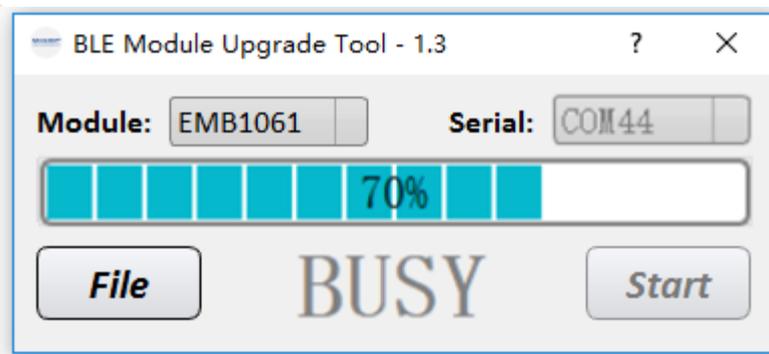
● After programming succeeds, upgrade tool will show "PASS", and EMB1061 will reset automatically and run with the new firmware. If programming fails, upgrade tool will show error notice, and users can take actions according to the error information.

Note: The programming process can NOT be cancelled, and please don't close the upgrade tool when programming.
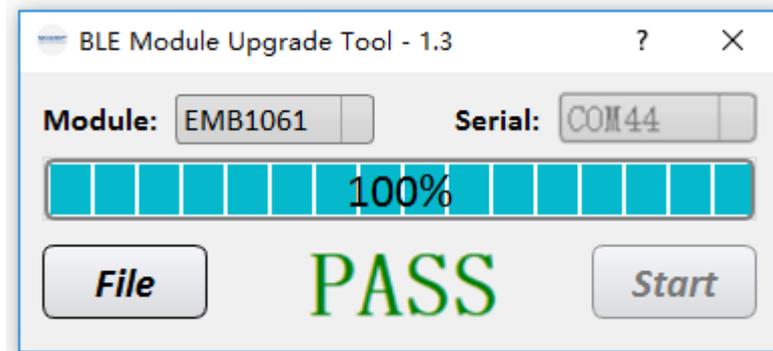
● Compared with SWD programming method, UART programming will not erase MAC address information, so it's recommended to use UART programming method.

3. ST-Link Programming

Every EMB1061 has a unique MAC address, and the default flash address for it is: page 77, 0x10066800. From 0x10066800 on, six bytes are used for MAC address.

When using ST-Link to program firmware, MAC address will be erased. MAC address is also in the QR code of EMB1061's label, so you can scan the QR code to get MAC address and program it into flash again.

There are two ways of ST-Link programming: for software development, and for mass production.

3.1 ST-Link Programming：for development and debugging

For software development and debugging, you can program firmware by ST-Link and IAR/Keil.

3.2 ST-Link Programming：for mass production

EMB1061_AutoManufactureTools.exe is used for production line mass production.

You can get this tool from http://www.mxchip.com/product/ble_product/50

3.2.1 Steps

1，To config this file: config.json, which is in config folder.

```
{
    "stlink_max_num": 1,
    "stlink_tool": "C:\\Program Files (x86)\\STMicroelectronics\\BlueNRG-1 ST-Link Utility V 1.0.0\\ST-LINK_Utility\\BlueNRG-1_ST-LINK_CLI.exe",
    "address": "0x10040000",
    "firmware": "C:\\Users\\mxchip\\Desktop\\wifi module\\EMB1061\\BLEKIT 1061\\Jlink Update\\EMB1061_APP_ATV15_20170707\\EMB1061_AT15_20170707.bin"
}
```

"firmware"

    ---The path of firmware

"stlink_max_num"

    ---The max number of STLink connected to PC

2，Start

Double click EMB1061_AutoManufactureTools.exe to start download firmware automatically.

3，Stop

Close cmd window or enter CTRL+C to stop.

3.2.2 Working procedure

(1). When the tool starts to work, it will scan all the ST-Link connected to this PC. It's recommended to use ST-Link/V2.

(2). When found available ST-Link, the tool will start to download firmware automatically, and there will be message to show pass or fail.

(3). It will download for one ST-Link after another.

(4). When all the ST-Link are finished, the tool will wait for user to change new EMB1061 modules.

(5). When new EMB1061 modules are powered on, the tool will start to download firmware again.

3.2.3 Notes

(1). Make sure to config "config.json" correctly.

(2). All the folders in this tool can not be deleted.

    config
    log
    setup
    tools
    EMB1061_AutoManufactureTools.exe
    readme.txt
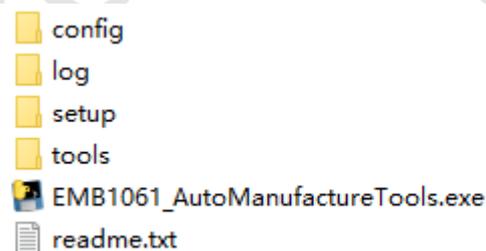
3.2.4 Trouble shooting

(1). If the module is connected well with ST-Link, and there is message to show fail, please re-connect ST-Link with PC.

(2). If windows system shows lacking of some components, like vs2015 vcredist_x86, please find it and install from "setup" folder.

(3). If there are still problems, please close this tool, and re-connect all the ST-Link.

(4). If there are still problems, please send the error log in "log" folder to MXCHIP.

4. Sales Information and Technical Support

If you need to get the latest information on this product or our other product information, you can visit: http://www.mxchip.com/.

If you need to get technical support, please call us during the working hours.

From Monday to Friday, morning 9:00~12:00, afternoon 13:00~18:00

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