

QFlash User Guide

Rev. QFlash_User_Guide_V1.21

Date: 2016-12-06



Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:

Quectel Wireless Solutions Co., Ltd.

Office 501, Building 13, No.99, Tianzhou Road, Shanghai, China, 200233

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local office. For more information, please visit:

<http://www.quectel.com/support/salesupport.aspx>

For technical support, or to report documentation errors, please visit:

<http://www.quectel.com/support/techsupport.aspx>

Or email to: Support@quectel.com

GENERAL NOTES

QUECTEL OFFERS THE INFORMATION AS A SERVICE TO ITS CUSTOMERS. THE INFORMATION PROVIDED IS BASED UPON CUSTOMERS' REQUIREMENTS. QUECTEL MAKES EVERY EFFORT TO ENSURE THE QUALITY OF THE INFORMATION IT MAKES AVAILABLE. QUECTEL DOES NOT MAKE ANY WARRANTY AS TO THE INFORMATION CONTAINED HEREIN, AND DOES NOT ACCEPT ANY LIABILITY FOR ANY INJURY, LOSS OR DAMAGE OF ANY KIND INCURRED BY USE OF OR RELIANCE UPON THE INFORMATION. ALL INFORMATION SUPPLIED HEREIN IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

COPYRIGHT

THE INFORMATION CONTAINED HERE IS PROPRIETARY TECHNICAL INFORMATION OF QUECTEL CO., LTD. TRANSMITTING, REPRODUCTION, DISSEMINATION AND EDITING OF THIS DOCUMENT AS WELL AS UTILIZATION OF THE CONTENT ARE FORBIDDEN WITHOUT PERMISSION. OFFENDERS WILL BE HELD LIABLE FOR PAYMENT OF DAMAGES. ALL RIGHTS ARE RESERVED IN THE EVENT OF A PATENT GRANT OR REGISTRATION OF A UTILITY MODEL OR DESIGN.

Copyright © Quectel Wireless Solutions Co., Ltd. 2016. All rights reserved.

About the Document

History

Revision	Date	Author	Description
1.0	2012-10-30	Yolanda YAO	Initial
1.1	2012-12-02	Yolanda YAO	Updated QFlash Version to 1.1
1.2	2013-02-25	Karen REN	Updated QFlash Version to 1.4
1.3	2013-05-20	Apple SONG/ Karen REN	Added USB port to upgrade firmware for U10 and UC20 module
1.4	2013-10-10	James CAI	1. Added the ways to upgrade GCXX module 2. Updated QFlash Version to 2.1
1.5	2013-11-05	Lucky DOU	Updated QFlash Version to 2.2
1.6	2013-12-07	James CAI	Updated QFlash Version to 2.3
1.7	2013-12-12	Lucky DOU	Updated QFlash Version for UC15
1.8	2014-02-11	James CAI	Updated QFlash Version to 2.4
1.9	2014-02-26	Steed NING	Updated QFlash Version to 2.5
1.10	2014-03-18	James CAI	Updated QFlash Version to 2.6
1.11	2014-04-24	Anny ZHANG	Updated QFlash Version to 2.7
1.12	2014-06-25	James CAI	Updated QFlash Version to 2.8
1.13	2014-08-13	Martin LI/ Roddick SUN	Updated QFlash Version to 2.9
1.14	2014-10-08	Martin LI	Updated QFlash Version to 3.0
1.15	2014-11-11	Mario XU	Updated QFlash Version to 3.1
1.16	2015-03-05	Jesse ZHANG	Updated QFlash Version to 3.3
1.17	2015-06-03	James CAI	Updated QFlash Version to 3.4

1.18	2016-03-24	James CAI	Updated QFlash Version to 3.5
1.19	2016-06-16	Sophie ZHU	1. Added the ways to upgrade ECXX module 2. Updated QFlash Version to 3.6
1.20	2016-09-21	Dylan LIU	1. Added the way to load APP firmware 2. Updated QFlash Version to 3.7
1.21	2016-12-06	Abby WU	1. Added the way to upgrade SCXX module 2. Updated QFlash Version to 4.0

Quectel
Confidential

Contents

About the Document	2
Contents	4
Figure Index	5
1 Introduction	6
1.1. OS and Version	6
1.2. About QFlash Tool	6
2 QFlash Upgrade Procedures	7
2.1. Normal Configuration	7
2.1.1. Serial Port	8
2.1.2. Baudrate	13
2.1.3. File Setting	14
2.1.4. Upgrade	15
2.1.5. Load APP Firmware	19
2.2. Abnormalities	23
2.2.1. COM Port Connected to a Wrong Series Port	23
2.2.2. COM Port Connected to an Occupied Serial Port	26
2.2.3. Selected an Unsupported Baudrate	28
2.2.4. Selected an Invalid Scatter File	30
2.2.5. Selected an Invalid Load File (GCXX Module)	31
2.2.6. Power Supply is Abnormal	32
2.2.7. USB to Serial Cable is Abnormal	34
3 Appendix A Reference	35

Figure Index

FIGURE 1: ABOUT THE TOOL	6
FIGURE 2: MAIN INTERFACE	7
FIGURE 3: SELECT THE CORRECT SERIAL PORT FOR GSM/GPRS MODULES	8
FIGURE 4: NO NEED TO SELECT COM PORT FOR UG95/UG96 MODULE	9
FIGURE 5: SELECT THE USB DM PORT FOR UC20 MODULE.....	9
FIGURE 6: SELECT THE USB DM PORT FOR UC15 MODULE.....	10
FIGURE 7: SELECT THE USB DM PORT FOR ECXX MODULE	11
FIGURE 8: SELECT THE HS-USB DIAGNOSTICS 9091 PORT FOR SCXX MODULE	12
FIGURE 9: SELECT THE BAUDRATE.....	13
FIGURE 10: SELECT THE BIN FILE	14
FIGURE 11: CLICK THE START BUTTON	15
FIGURE 12: CLICK THE START BUTTON (UC15/UC20/ECXX/GCXX/SCXX MODULE).....	16
FIGURE 13: START TO UPGRADE AFTER RESTARTING THE MODULE.....	17
FIGURE 14: START TO UPGRADE FIRMWARE	17
FIGURE 15: SUCCESSFUL UPGRADE	18
FIGURE 16: SELECT THE APP FILE	19
FIGURE 17: SELECT THE MODULE TYPE	20
FIGURE 18: CLICK THE START BUTTON.....	21
FIGURE 19: SUCCESSFUL DOWNLOAD.....	22
FIGURE 20: CONNECTED TO A WRONG SERIAL PORT	23
FIGURE 21: CONNECTED TO A WRONG SERIAL PORT (GCXX MODULE)	24
FIGURE 22: CONNECTED TO A WRONG SERIAL PORT (UC15/UC20 MODULE).....	24
FIGURE 23: CONNECTED TO A WRONG SERIAL PORT (ECXX MODULE).....	25
FIGURE 24: CONNECTED TO A WRONG SERIAL PORT (SCXX MODULE).....	25
FIGURE 25: CONNECTED TO AN OCCUPIED SERIAL PORT	26
FIGURE 26: CONNECTED TO AN OCCUPIED SERIAL PORT (GCXX MODULE)	26
FIGURE 27: CONNECTED TO AN OCCUPIED SERIAL PORT (UC15/UC20/ECXX MODULE)	27
FIGURE 28: CONNECTED TO AN OCCUPIED SERIAL PORT (SCXX MODULE)	27
FIGURE 29: AN UNSUPPORTED BAUDRATE IS SELECTED.....	28
FIGURE 30: UNSUPPORTED BAUDRATE IS SELECTED (GCXX MODULE)	28
FIGURE 31: UNSUPPORTED BAUDRATE IS SELECTED (UC15/UC20 MODULE)	29
FIGURE 32: UNSUPPORTED BAUDRATE IS SELECTED (SCXX MODULE).....	29
FIGURE 33: AN INVALID SCATTER FILE IS SELECTED.....	30
FIGURE 34: AN INVALID LOAD FILE IS SELECTED (GCXX MODULE)	31
FIGURE 35: POWER SUPPLY IS ABNORMAL (GCXX MODULE)	32
FIGURE 36: POWER SUPPLY IS ABNORMAL (UC15/UC20 MODULE).....	32
FIGURE 37: POWER SUPPLY IS ABNORMAL (ECXX MODULE)	33
FIGURE 38: POWER SUPPLY IS ABNORMAL (SCXX MODULE)	33
FIGURE 39: USB TO SERIAL CABLE IS ABNORMAL.....	34

1 Introduction

1.1. OS and Version

This document mainly introduces how to upgrade firmware with “QFlash” upgrade tool supplied by Quectel. The tool can run in PC without any installations if the OS is among the ones listed below:

- Windows XP
- Windows 7
- Windows 8
- Windows 10

Any newer version of the tool will be informed and provided in advance.

1.2. About QFlash Tool

“QFlash” developed by Quectel is shown as below.



Figure 1: About the Tool

2 QFlash Upgrade Procedures

The tool is used to upgrade firmware. It works according to the following steps:

Step 1: Configuration

Step 2: File setting

Step 3: Upgrade

The following describes the details of using the upgrade tool.

2.1. Normal Configuration

When QFlash tool is opened, the main interface is shown as following figure.

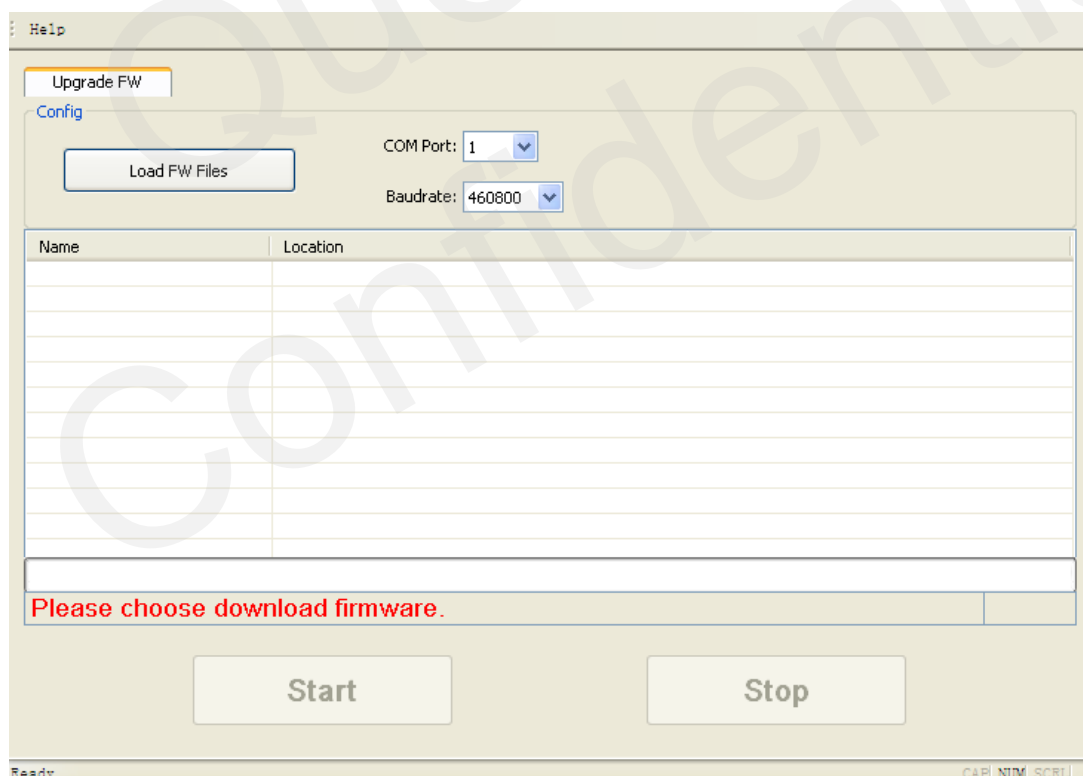


Figure 2: Main Interface

2.1.1. Serial Port

Click the “**COM Port**” dropdown list to select the COM port which is used to upgrade the firmware. For GSM/GPRS modules, it is the Main UART to be connected with the module, as shown in the following figure.

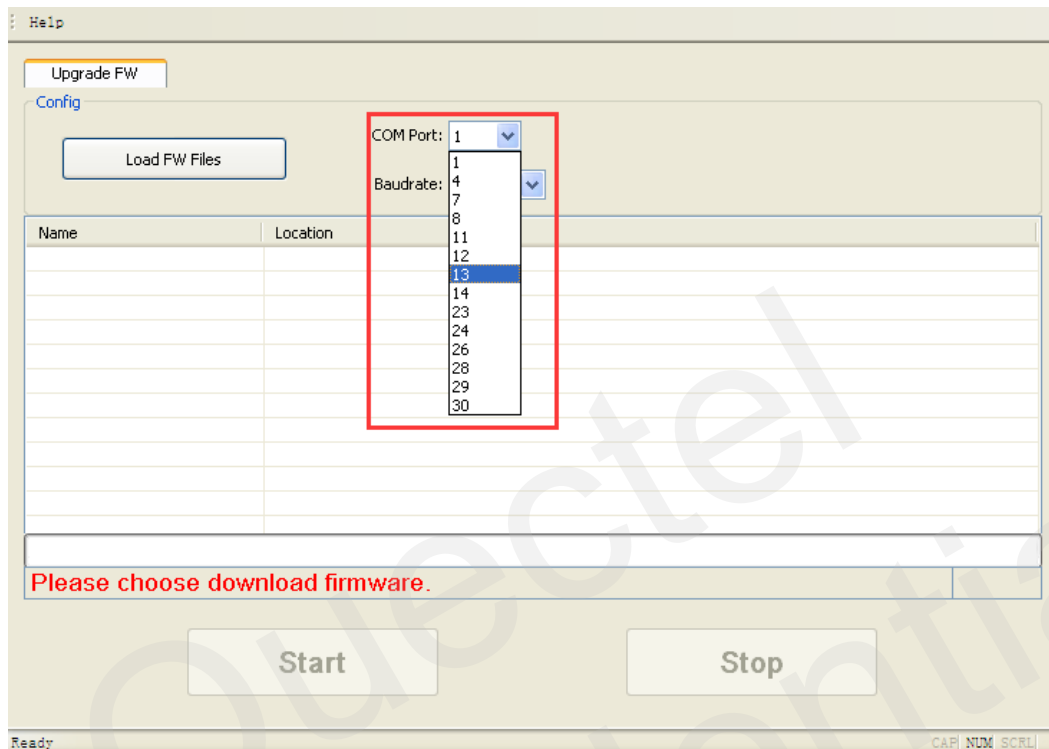


Figure 3: Select the Correct Serial Port for GSM/GPRS Modules

For UG95/UG96 module, it is the USB port to be used for firmware upgrade, and it can be selected automatically. While file setting is finished, the “**COM Port**” dropdown list will display “USB” in gray. After the module is restarted and ready to upgrade, the tool can recognize the USB port. The interface is as shown in the following figure.

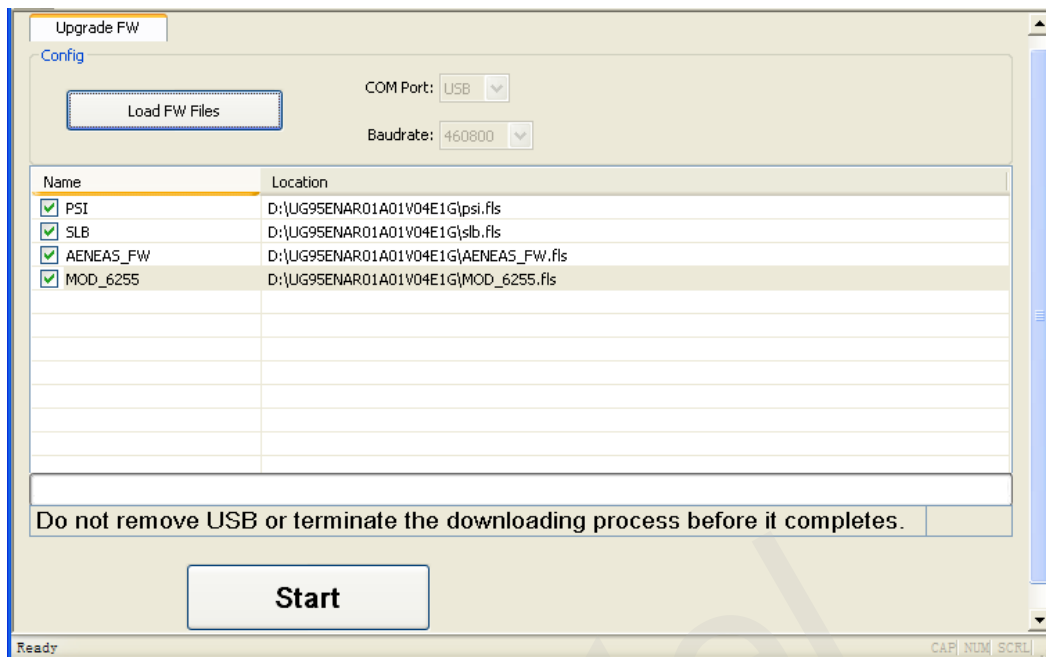


Figure 4: No Need to Select COM Port for UG95/UG96 Module

For UC20 module, USB DM port can be used for firmware upgrade. Click the “COM Port” dropdown list and select the USB DM port for upgrade, as shown in the following figure.

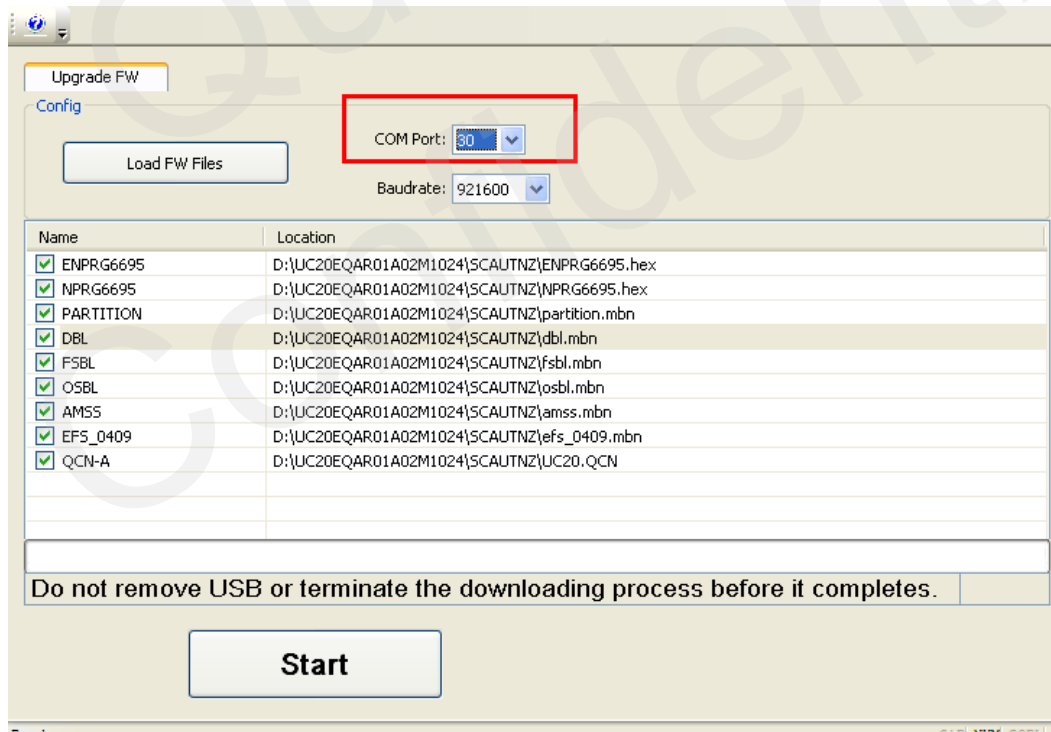


Figure 5: Select the USB DM Port for UC20 Module

For UC15 module, USB DM port can be used for firmware upgrade. Click the “**COM Port**” dropdown list and select the USB DM port for upgrade, as shown in the following figure.

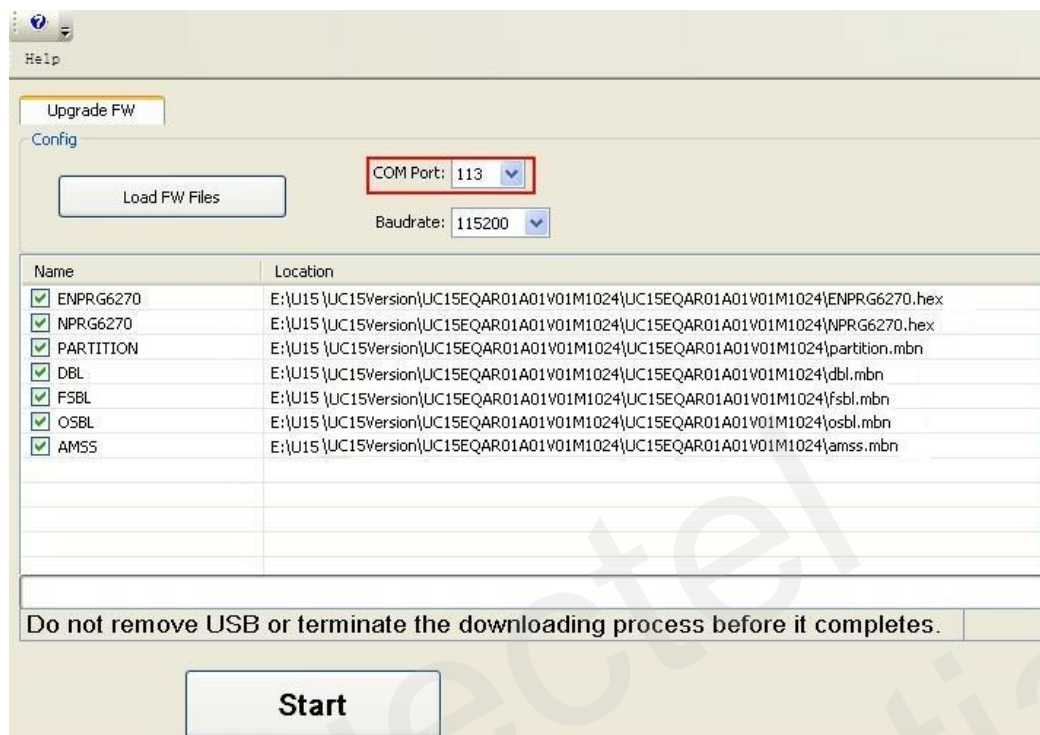


Figure 6: Select the USB DM Port for UC15 Module

For ECXX module, USB DM port can be used for firmware upgrade. Click the “**COM Port**” dropdown list and select the USB DM port for upgrade, as shown in the following figure.

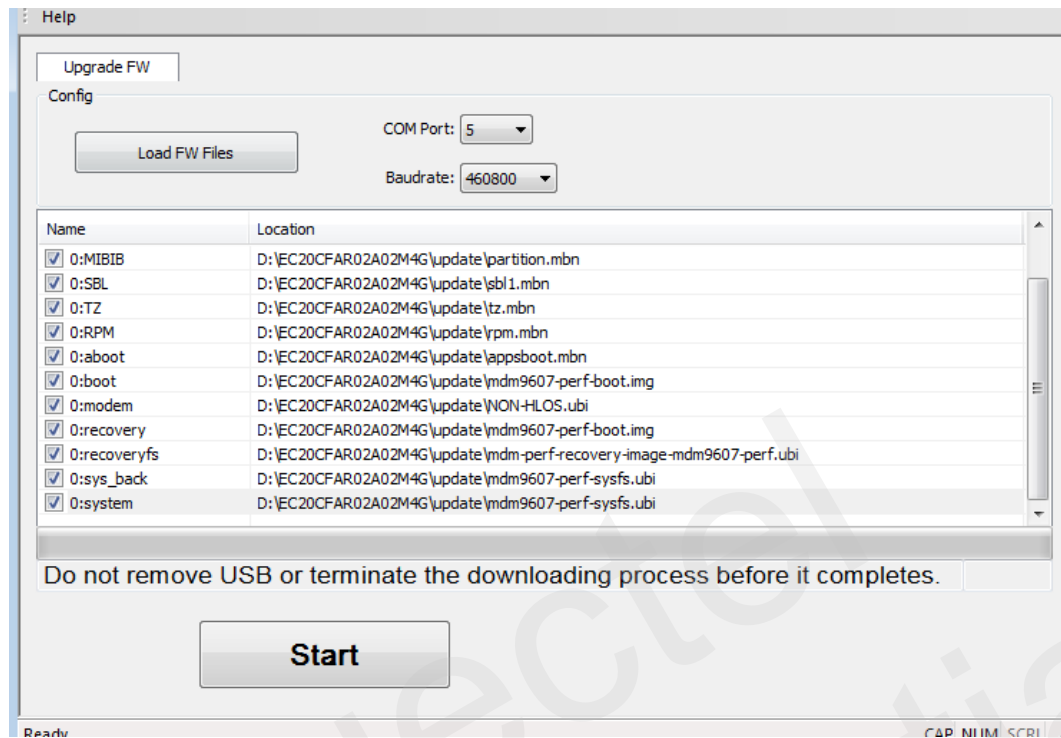


Figure 7: Select the USB DM Port for ECXX Module

For SCXX module, HS-USB Diagnostics 9091 port can be used for firmware upgrade. Click the “**COM Port**” dropdown list and select the HS-USB Diagnostics 9091 port for upgrade, as shown in the following figure.

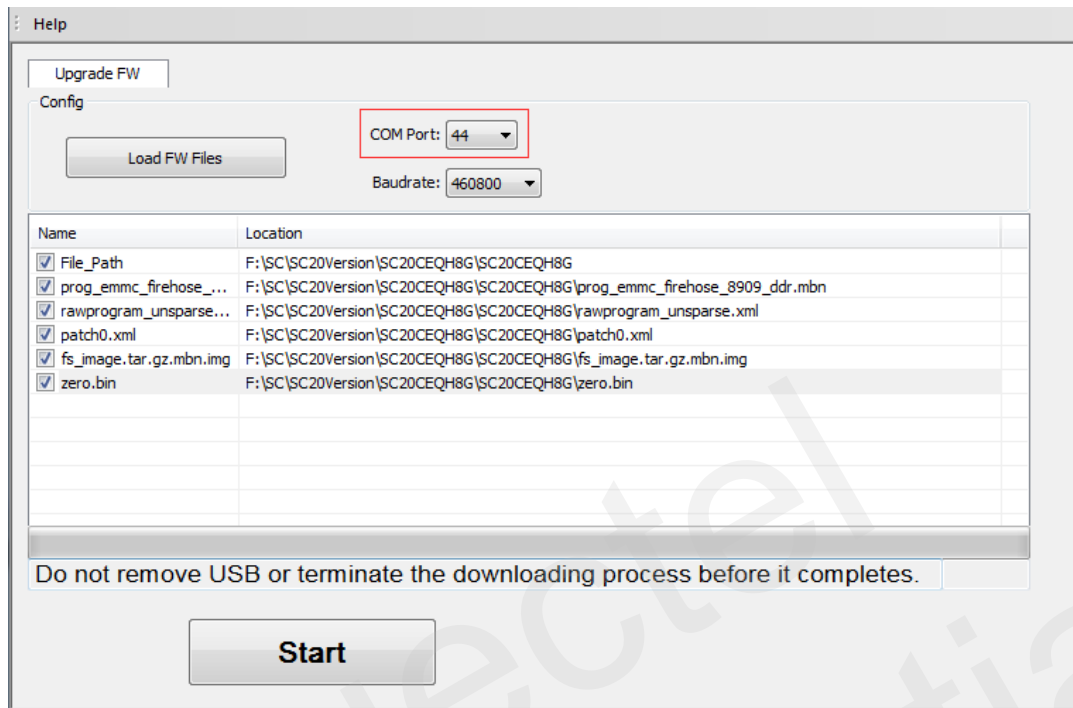


Figure 8: Select the HS-USB Diagnostics 9091 Port for SCXX Module

2.1.2. Baudrate

Click the “**Baudrate**” dropdown list and choose an appropriate baudrate. It is recommended to select 460800 for Quectel modules, as shown in the following figure.

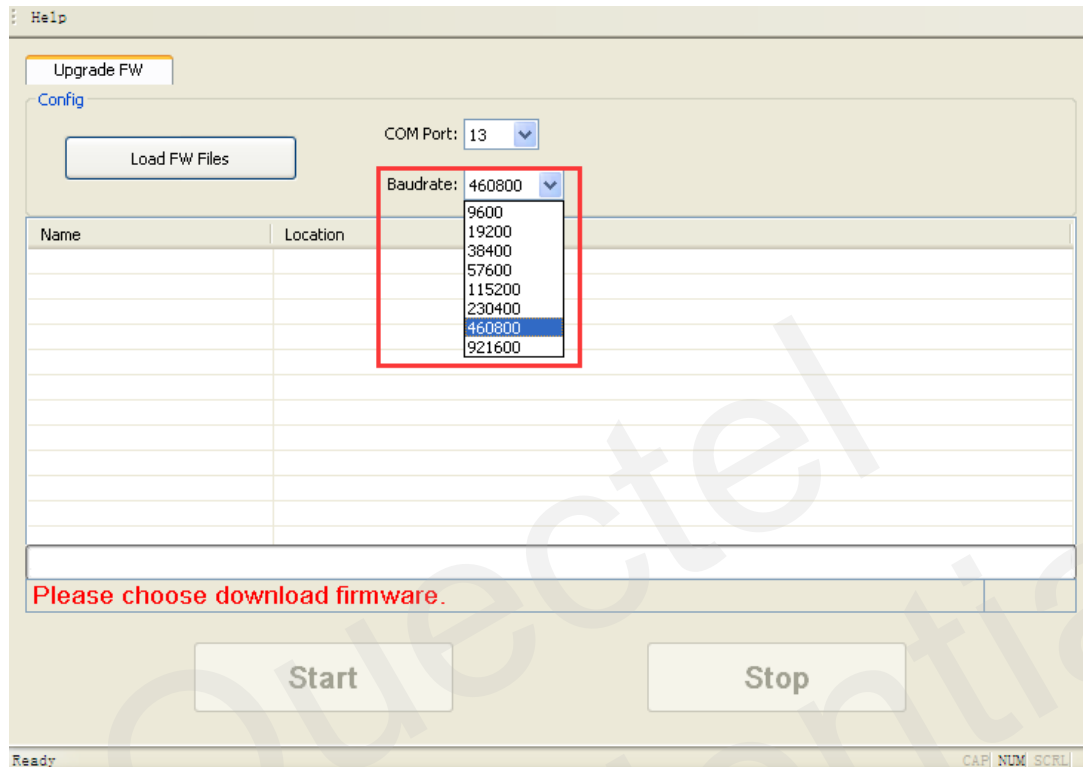


Figure 9: Select the Baudrate

NOTES

1. Baudrates have many different values, and it is the hardware environment that determines whether a specified baudrate can be supported. If not supported, an error message will be returned.
2. Baudrate setting is unnecessary for USB virtual port.
3. Please do select 921600 baudrate when upgrading GCXX module series. Other baudrates may lead to upgrading operation failure.

2.1.3. File Setting

Step 1: Click the button “Load FW Files”.

Step 2: Select the *txt/cfg/mbn/lod/fls* file whichever users want to download to the module.

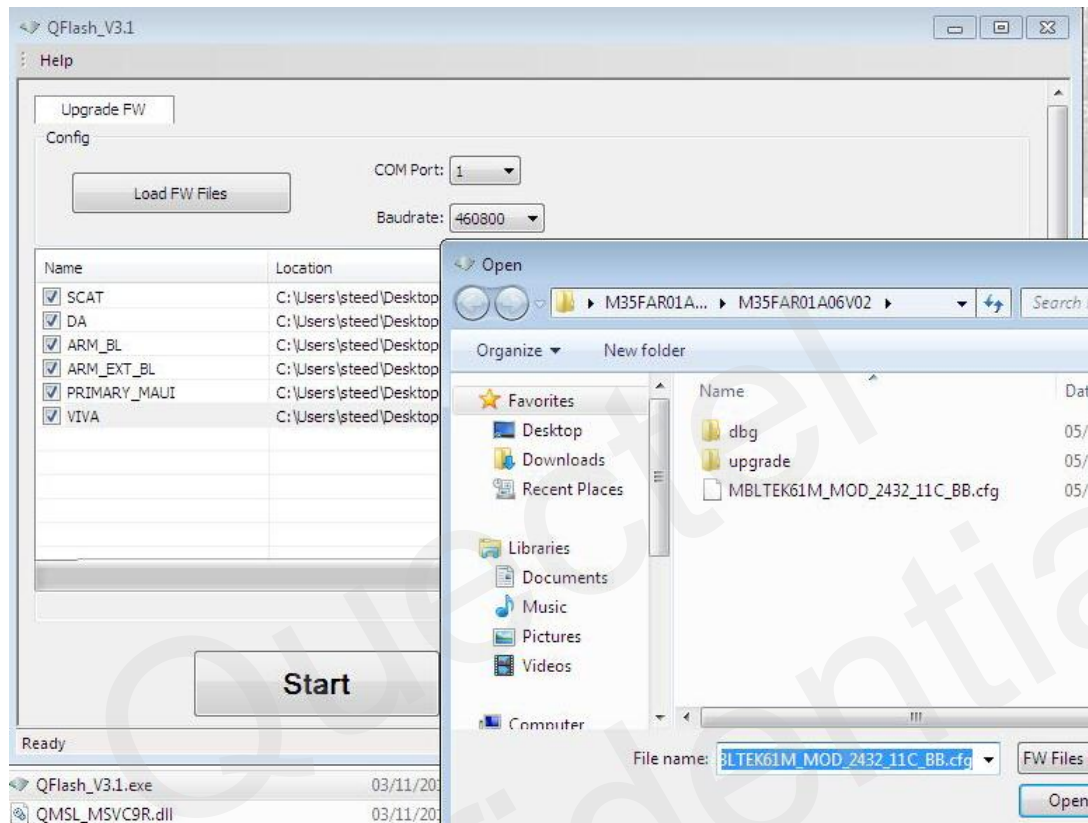


Figure 10: Select the Bin File

2.1.4. Upgrade

Step 1: Click the “**Start**” button to upgrade the firmware, as shown in the following figure.

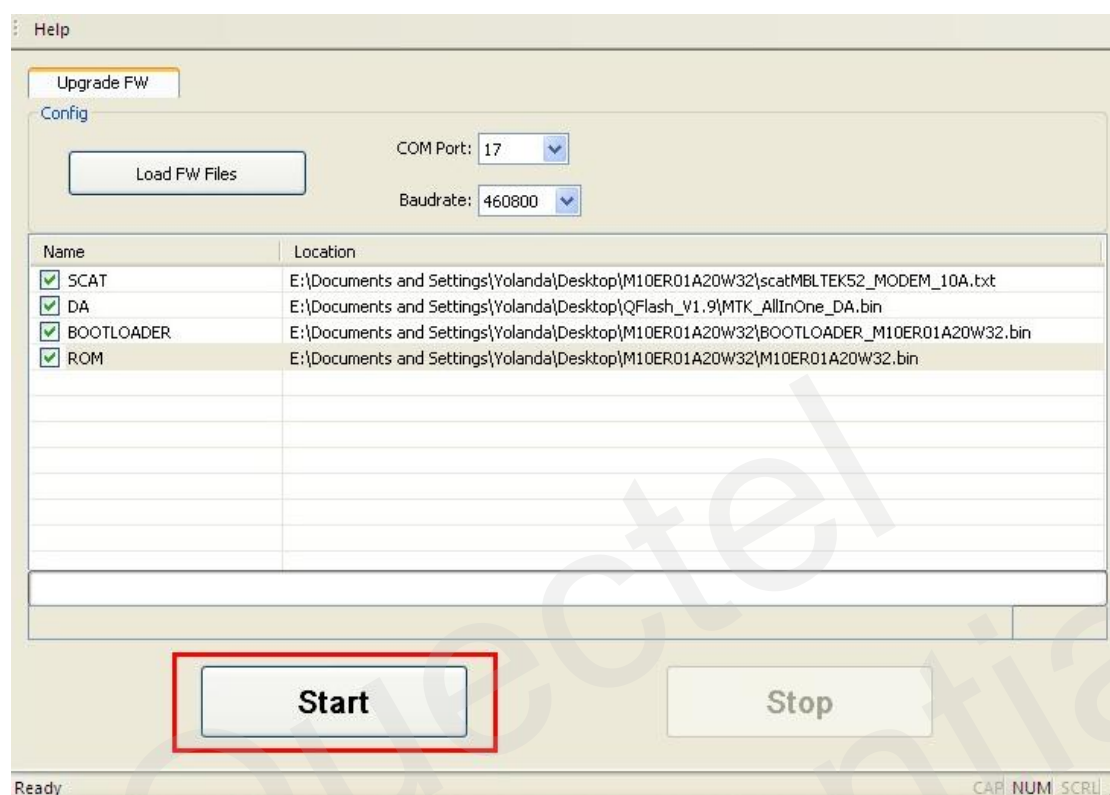


Figure 11: Click the Start Button

There is no “**Stop**” button (refer to the figure below) while upgrading firmware for UC15/UC20/ECXX/GCXX/SCXX module series.

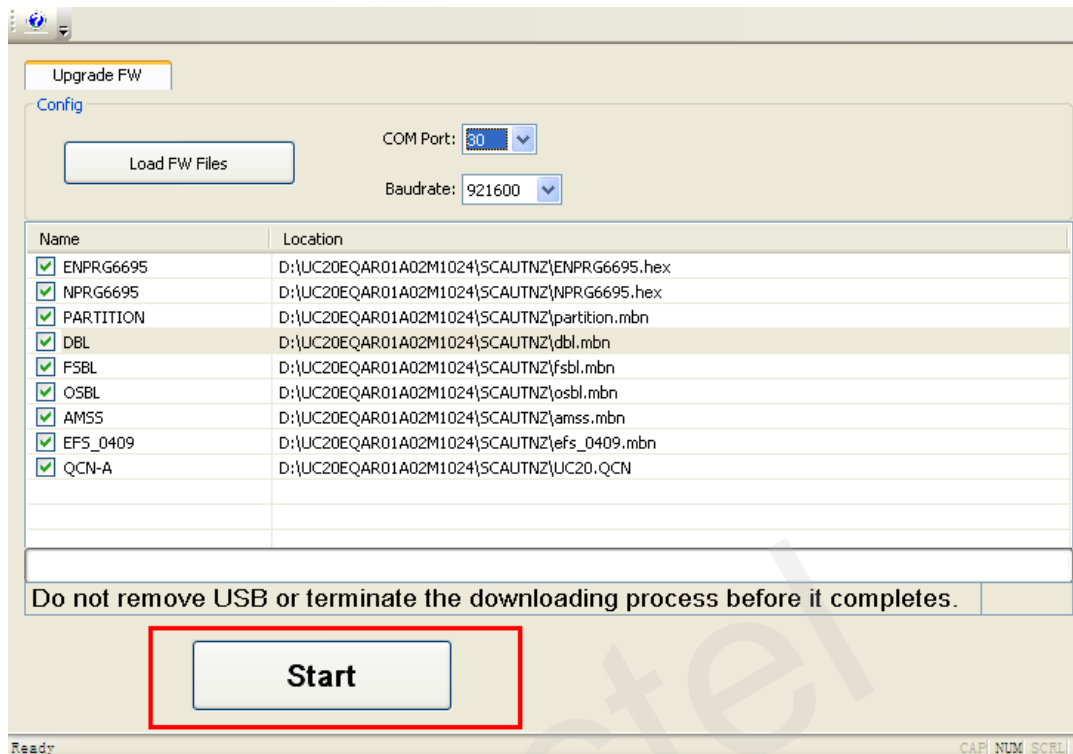


Figure 12: Click the Start Button (UC15/UC20/ECXX/GCXX/SCXX Module)

NOTE

Please note that it is not permitted to stop the upgrading, and please do not remove USB or terminate the downloading process before upgrading is completed.

Step 2: Restart the module by switching the D/L to “ON” after clicking “Start” button in 30 seconds. It will start to upgrade the firmware as shown in **Figure 13**.

If users are upgrading the firmware for UC15/UC20/ECXX/GCXX/SCXX module series, please ignore this step. It will restart the module automatically, as shown in **Figure14**.

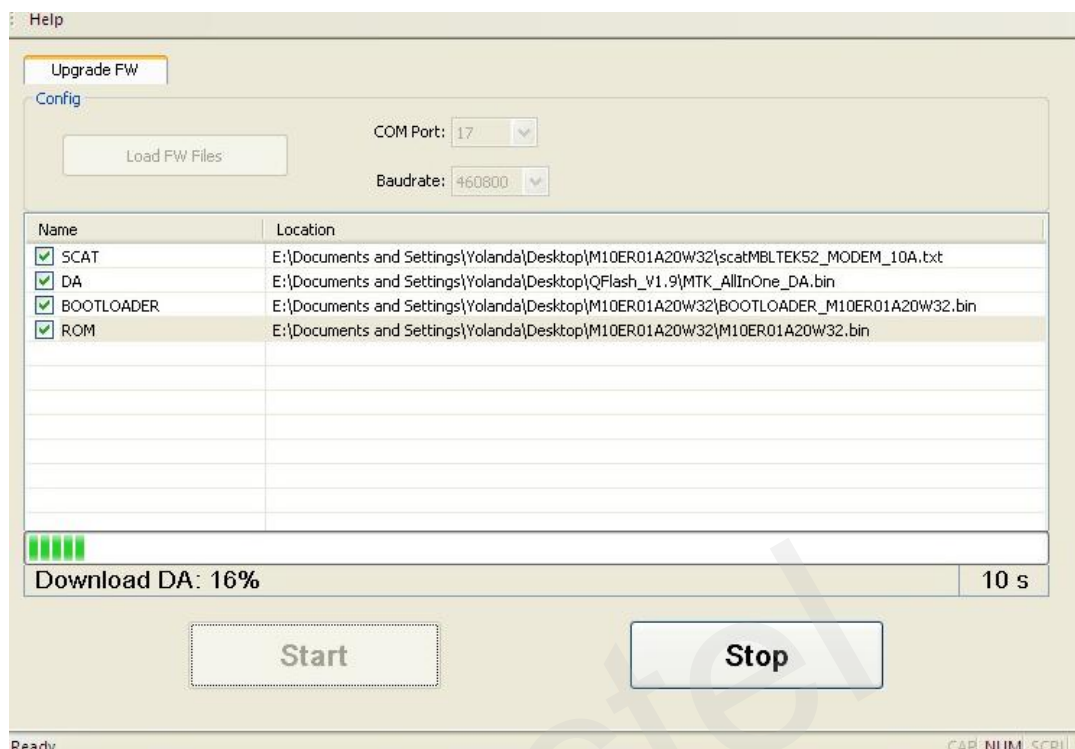


Figure 13: Start to Upgrade after Restarting the Module

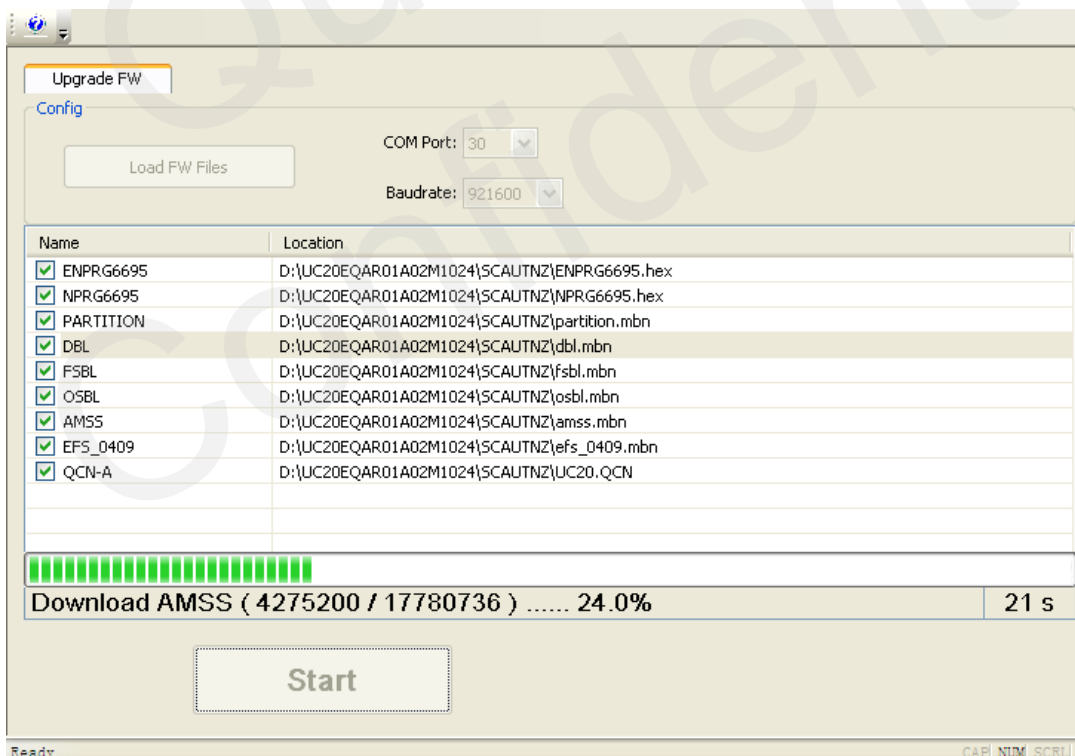


Figure 14: Start to Upgrade Firmware

NOTES

1. Please make sure the 5V_SW switch is ON when restarting the module by switching the D/L to “ON” on EVB.
2. If there is no EVB for module firmware upgrading, please drive the PWRKEY pin to low level after clicking the “Start” button in 30 seconds.

Step 3: “FW upgrade success” will be shown on the interface after module upgrading has been successfully completed, as shown in the following figure.

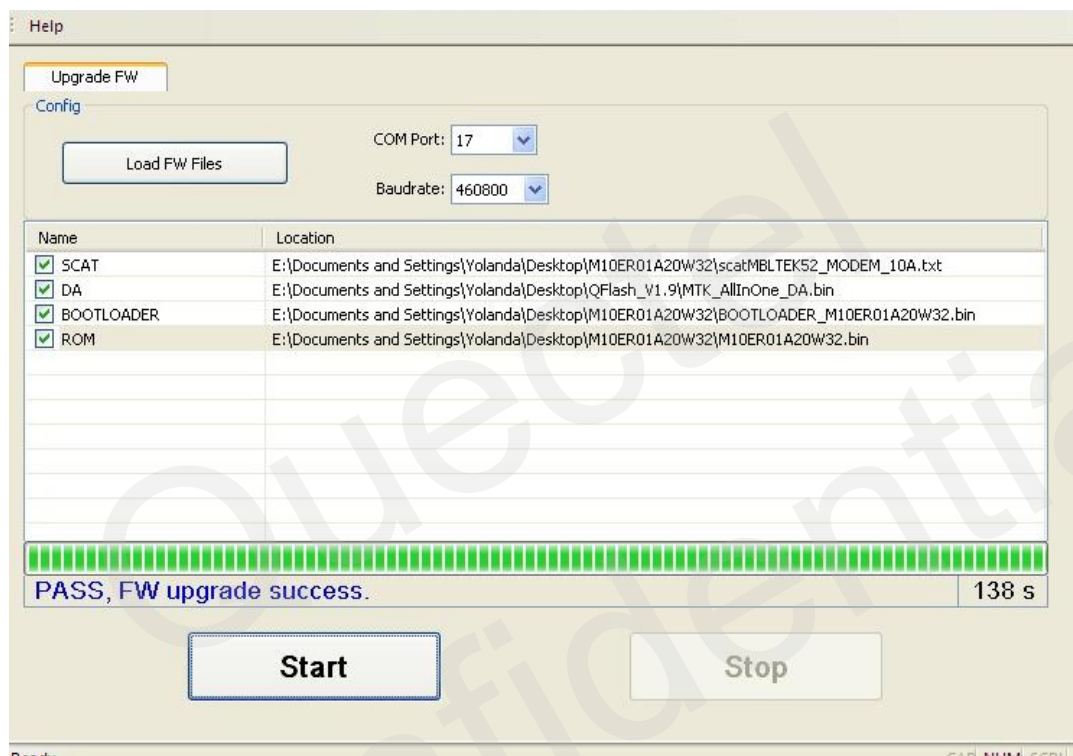


Figure 15: Successful Upgrade

2.1.5. Load APP Firmware

Step 1: Click the button “**Load FW Files**”, and select the file with “**cfg**” filename extension which users want to download to module.

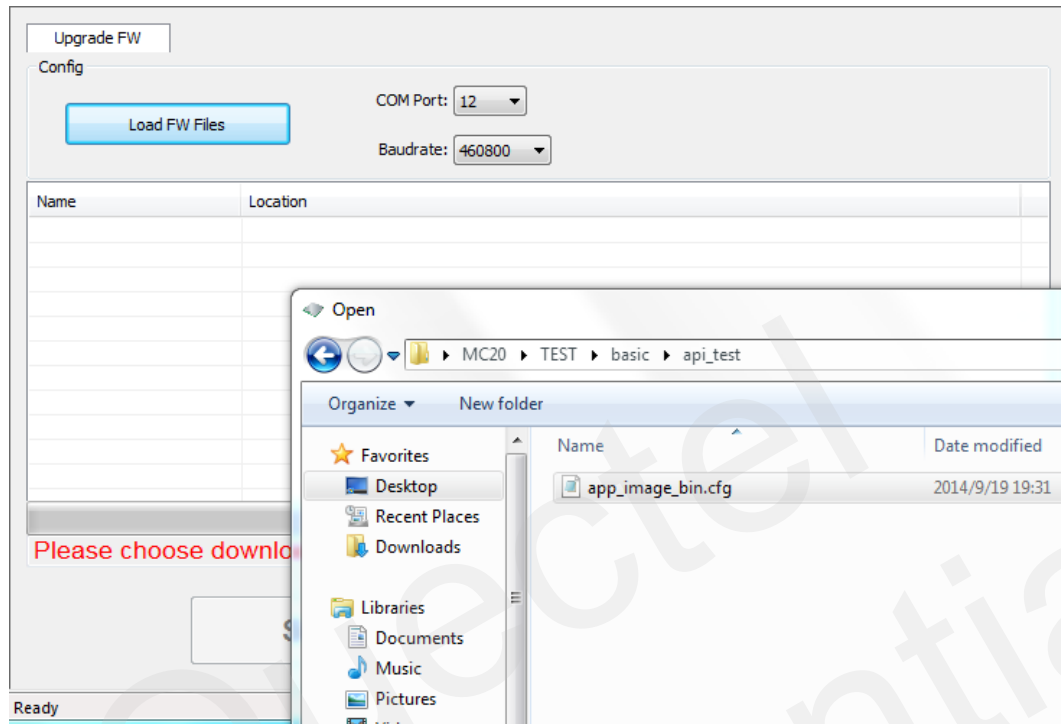


Figure 16: Select the APP File

Step 2: Click the “**Module Type**” dropdown list and choose an appropriate module type.

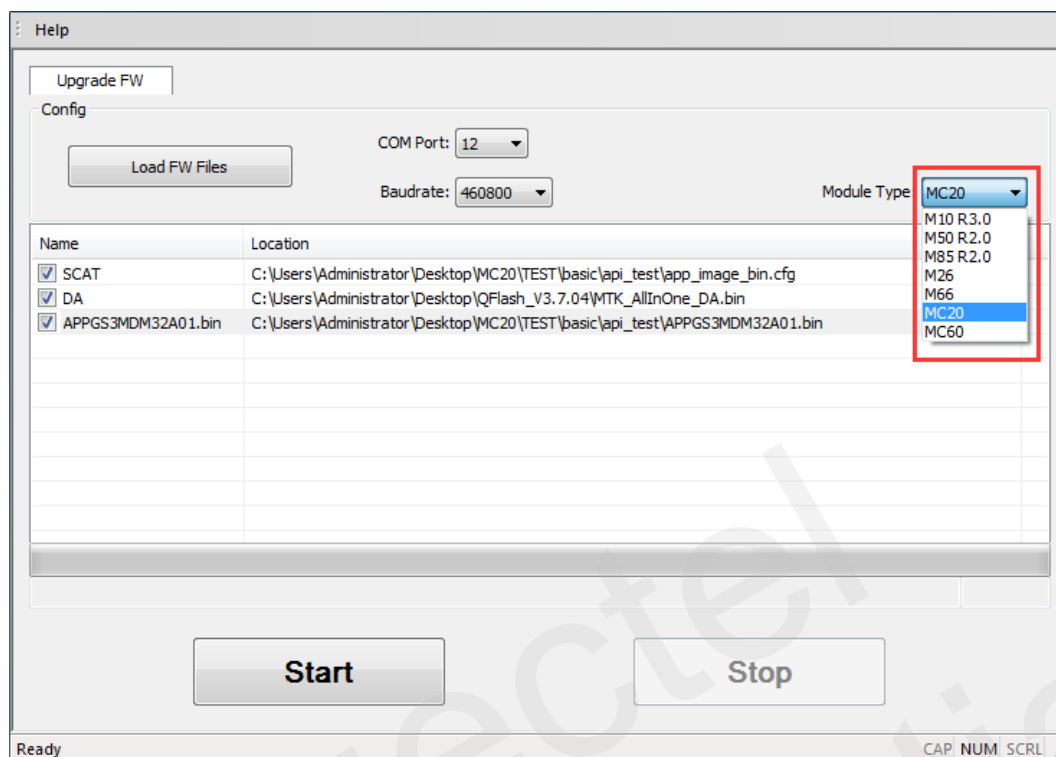


Figure 17: Select the Module Type

Step 3: Click the “**Start**” button to download the APP file, as shown in the following figure.

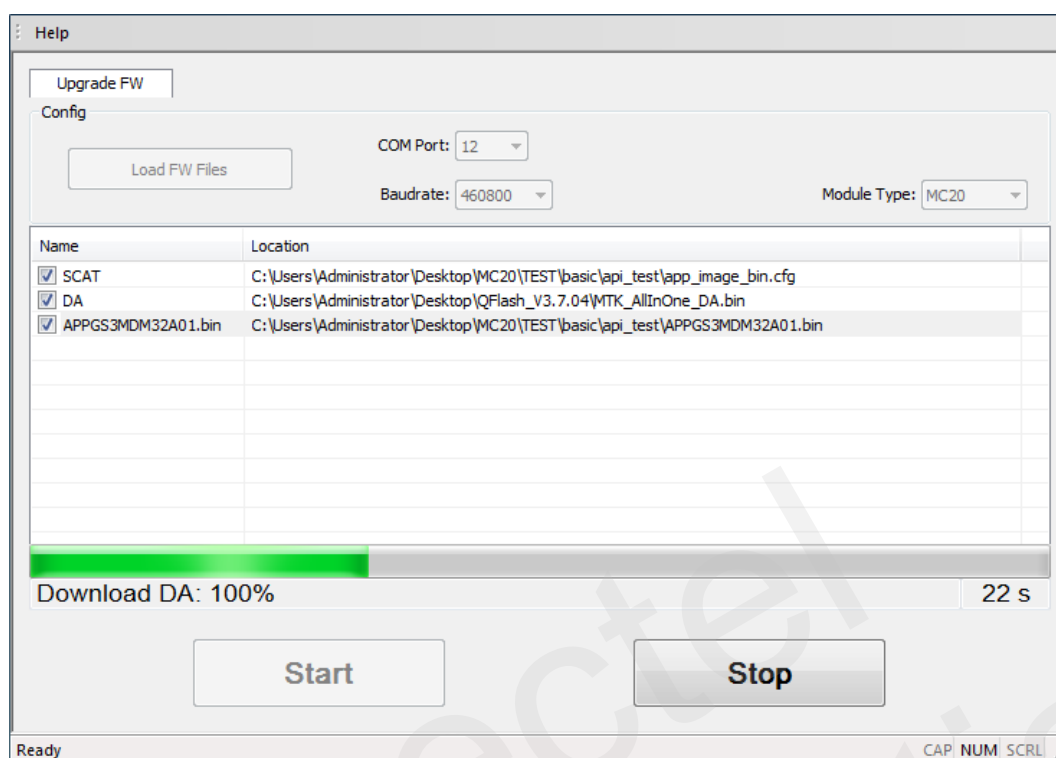


Figure 18: Click the Start Button

Step 4: “FW upgrade success” will be shown on the interface after APP download has been successfully completed, as shown in the following figure.

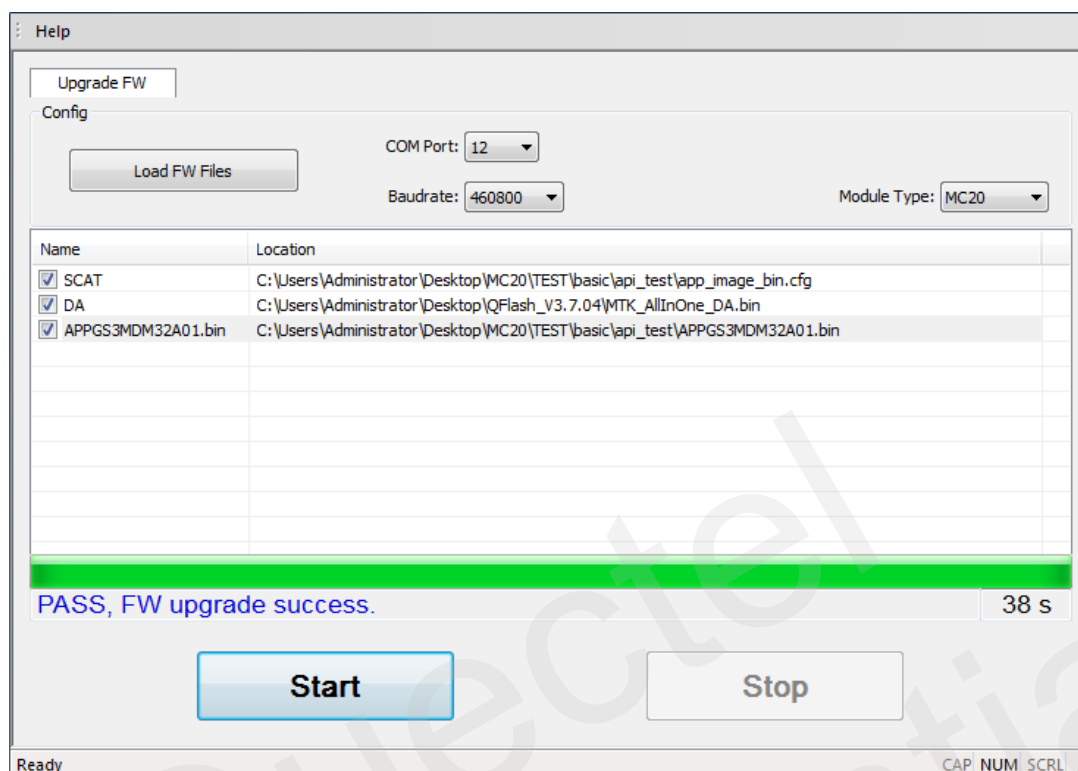


Figure 19: Successful Download

2.2. Abnormalities

Abnormalities may occur if there is incorrect parameter of baud-rate, damaged EVB or invalid files, etc.

2.2.1. COM Port Connected to a Wrong Series Port

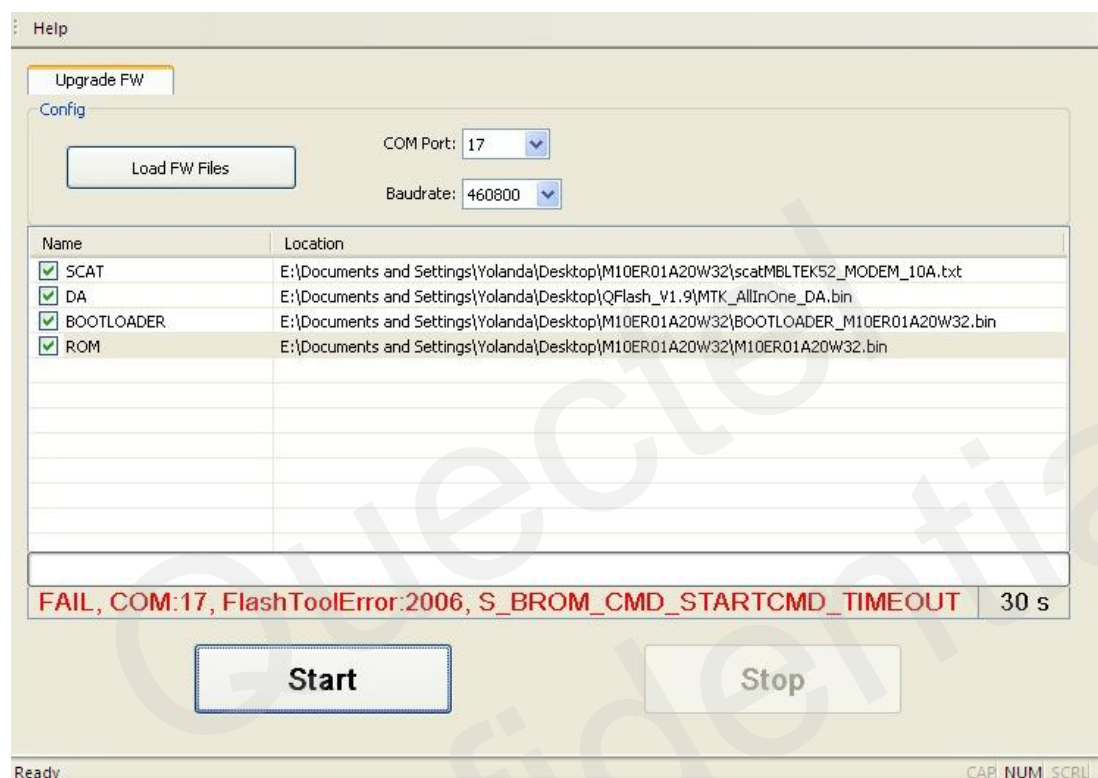


Figure 20: Connected to a Wrong Serial Port

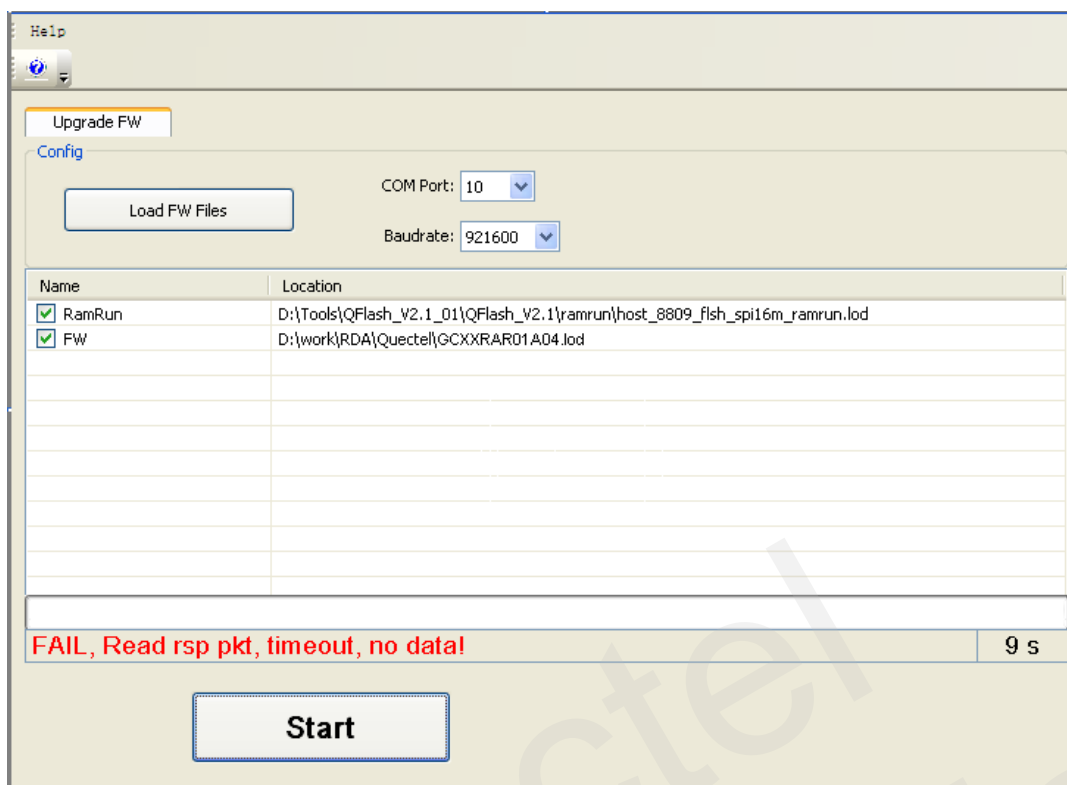


Figure 21: Connected to a Wrong Serial Port (GCXX Module)

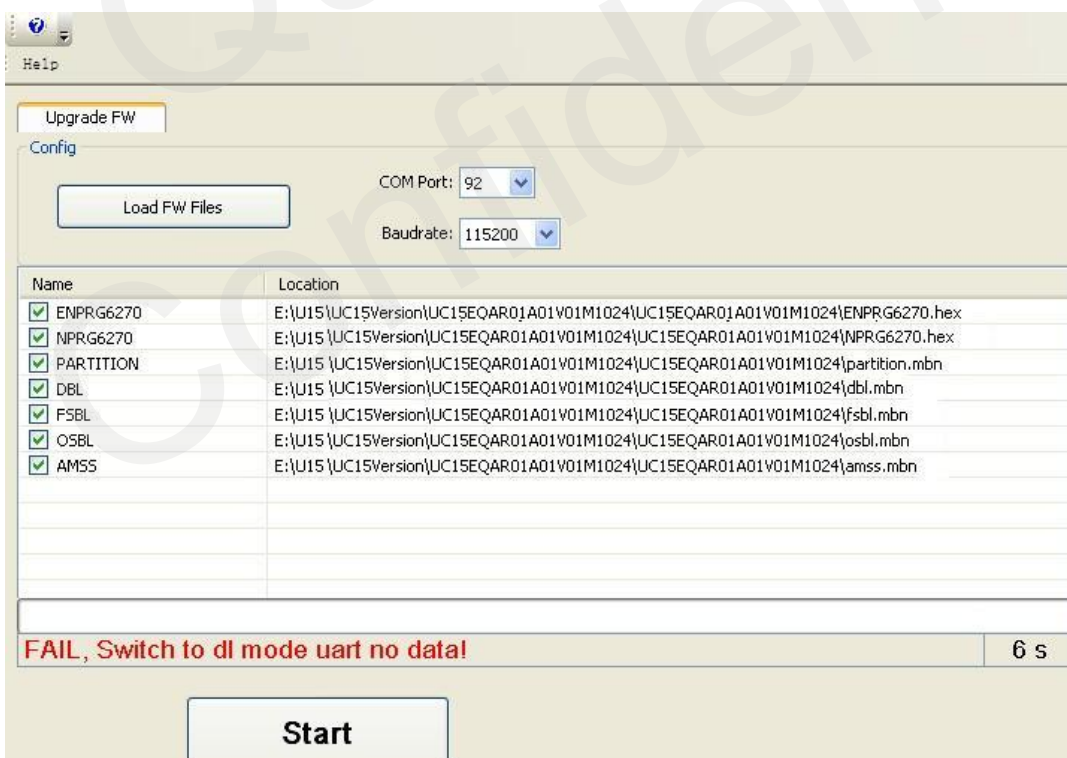


Figure 22: Connected to a Wrong Serial Port (UC15/UC20 Module)

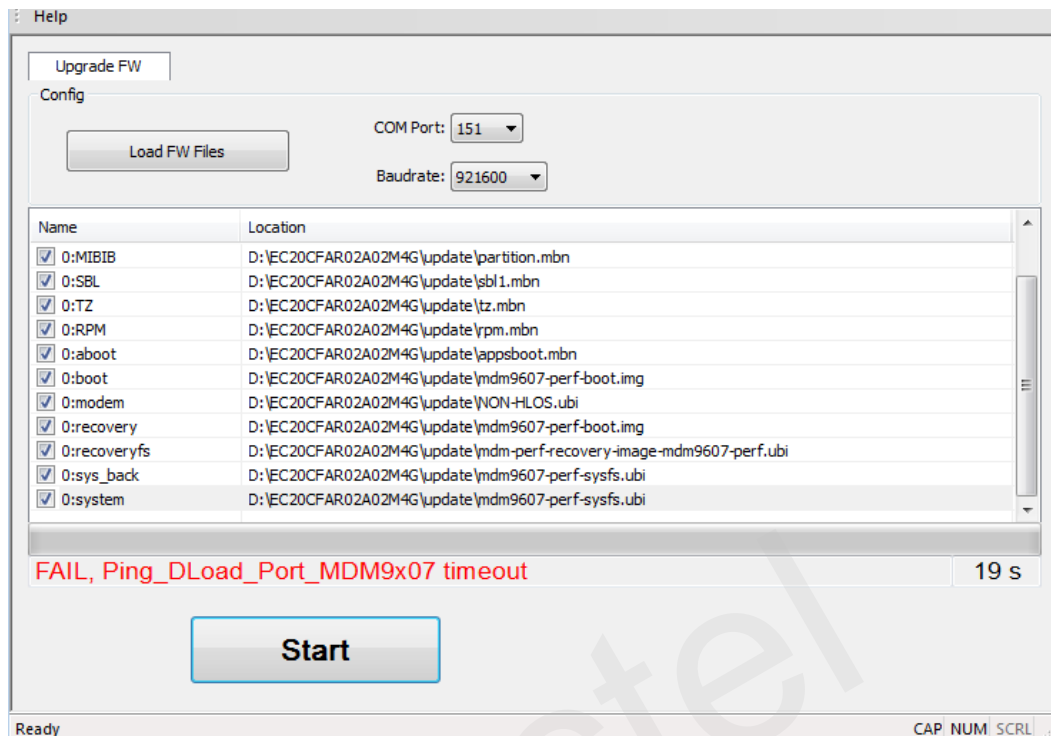


Figure 23: Connected to a Wrong Serial Port (ECXX Module)

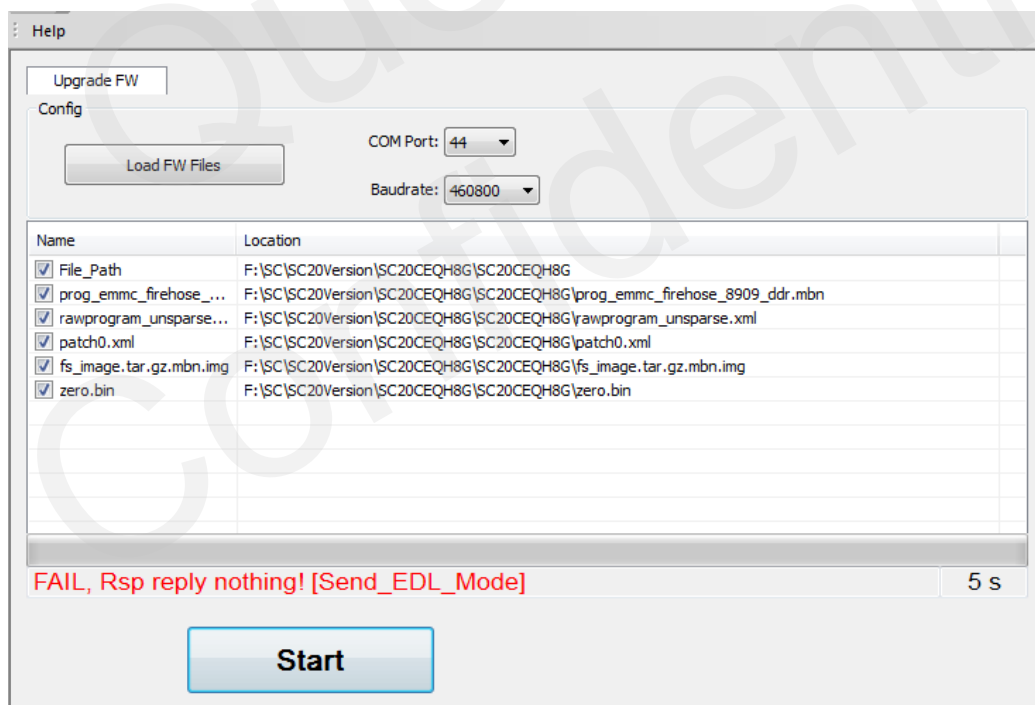


Figure 24: Connected to a Wrong Serial Port (SCXX Module)

2.2.2. COM Port Connected to an Occupied Serial Port

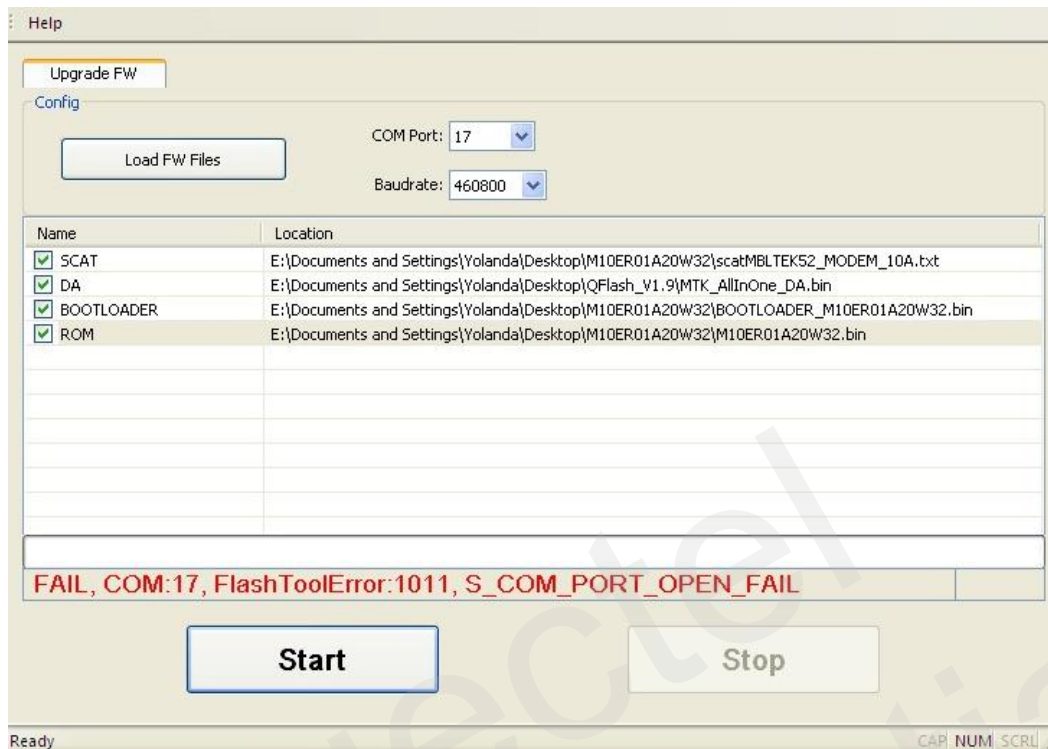


Figure 25: Connected to an Occupied Serial Port

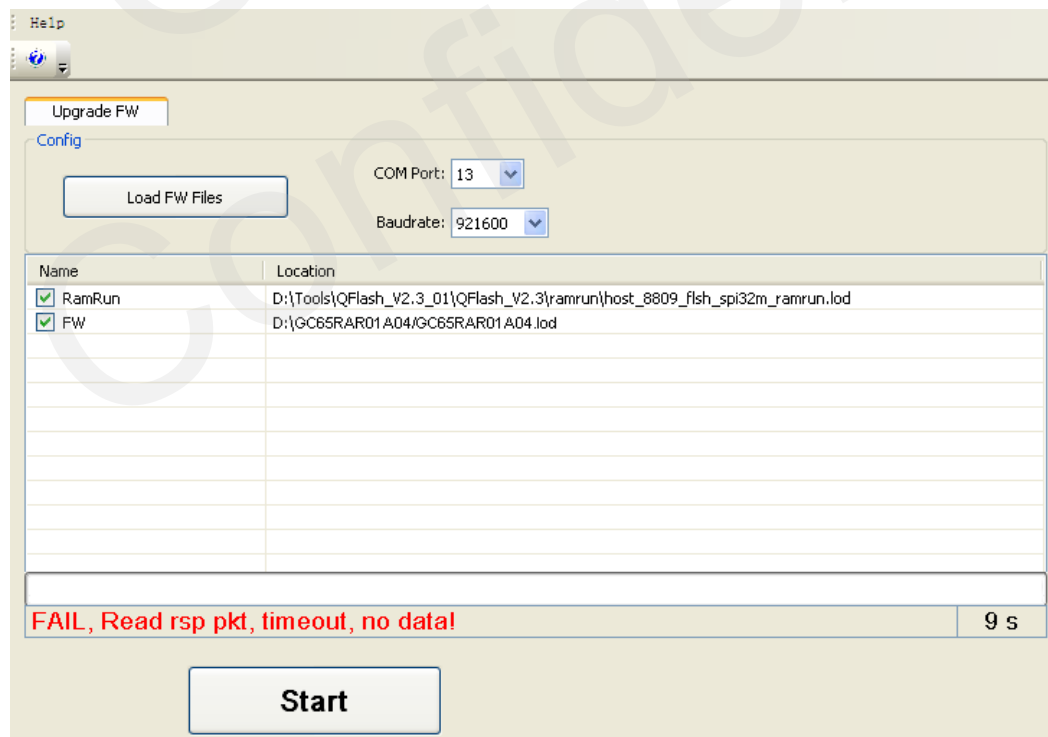


Figure 26: Connected to an Occupied Serial Port (GCXX Module)

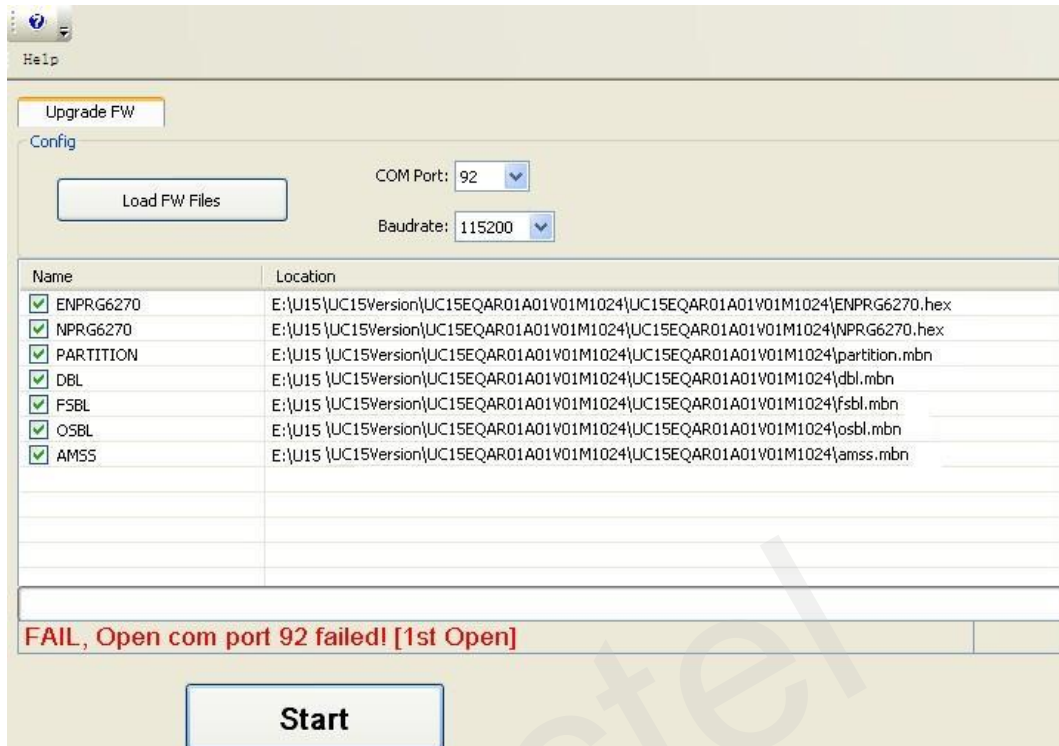


Figure 27: Connected to an Occupied Serial Port (UC15/UC20/ECXX Module)

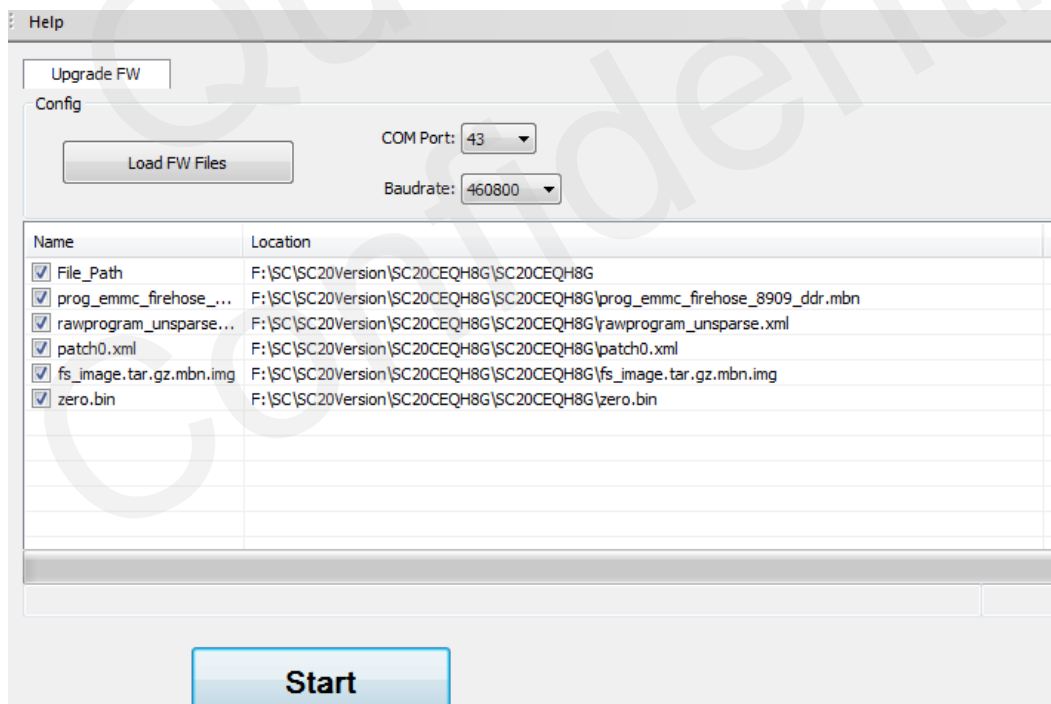


Figure 28: Connected to an Occupied Serial Port (SCXX Module)

2.2.3. Selected an Unsupported Baudrate

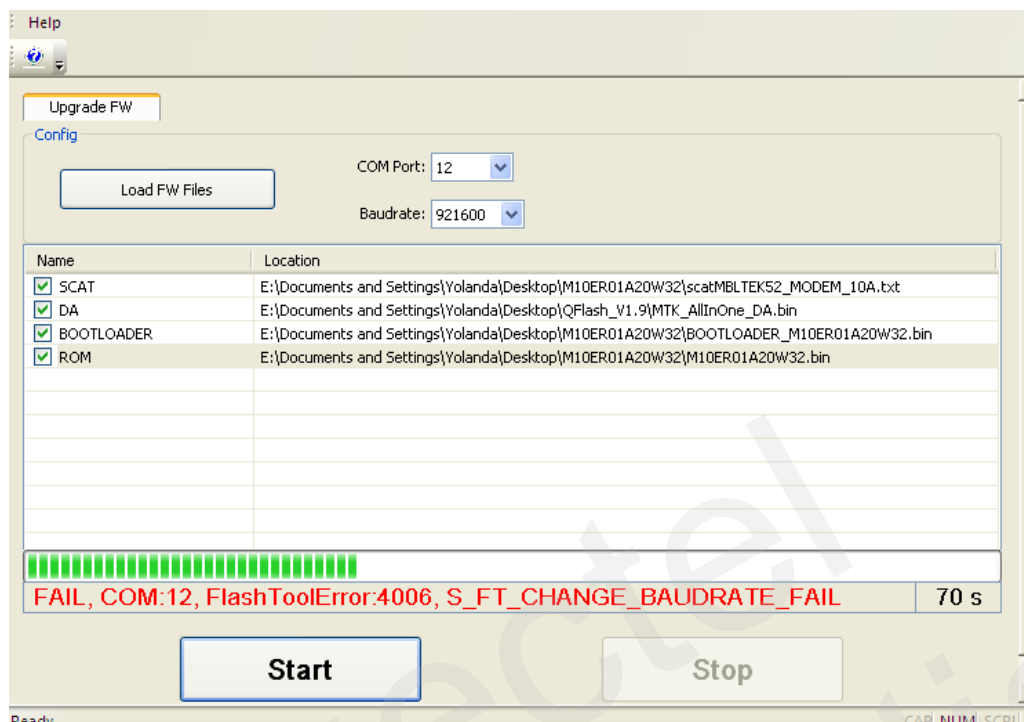


Figure 29: An Unsupported Baudrate is Selected

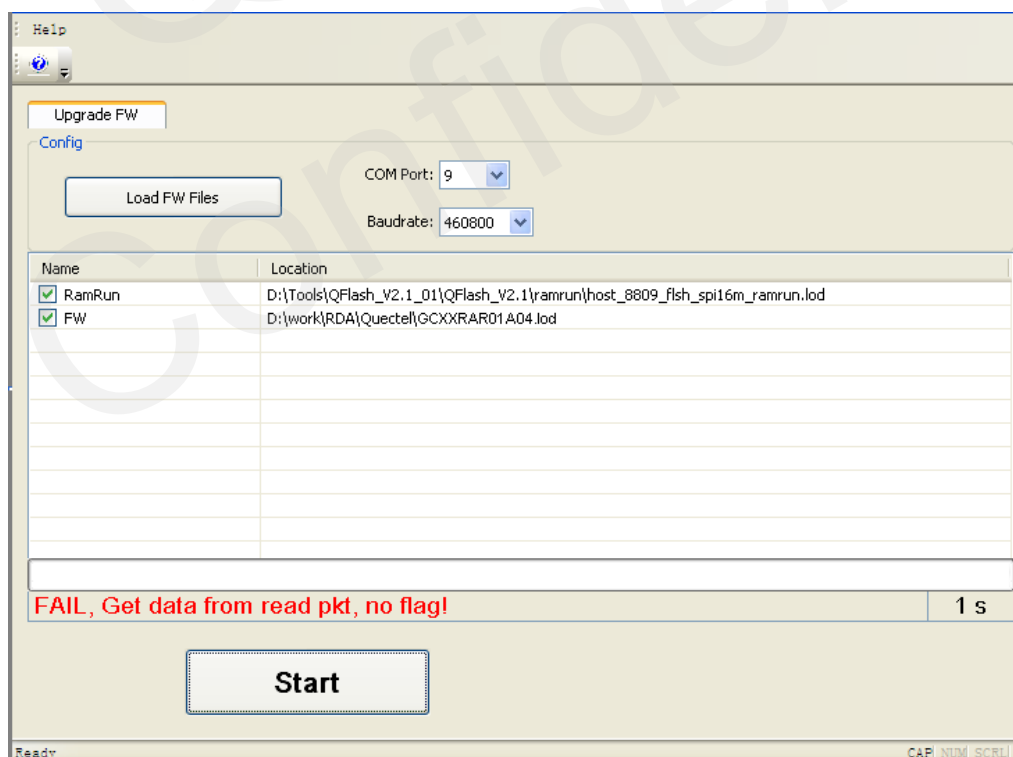


Figure 30: Unsupported Baudrate is Selected (GCXX Module)

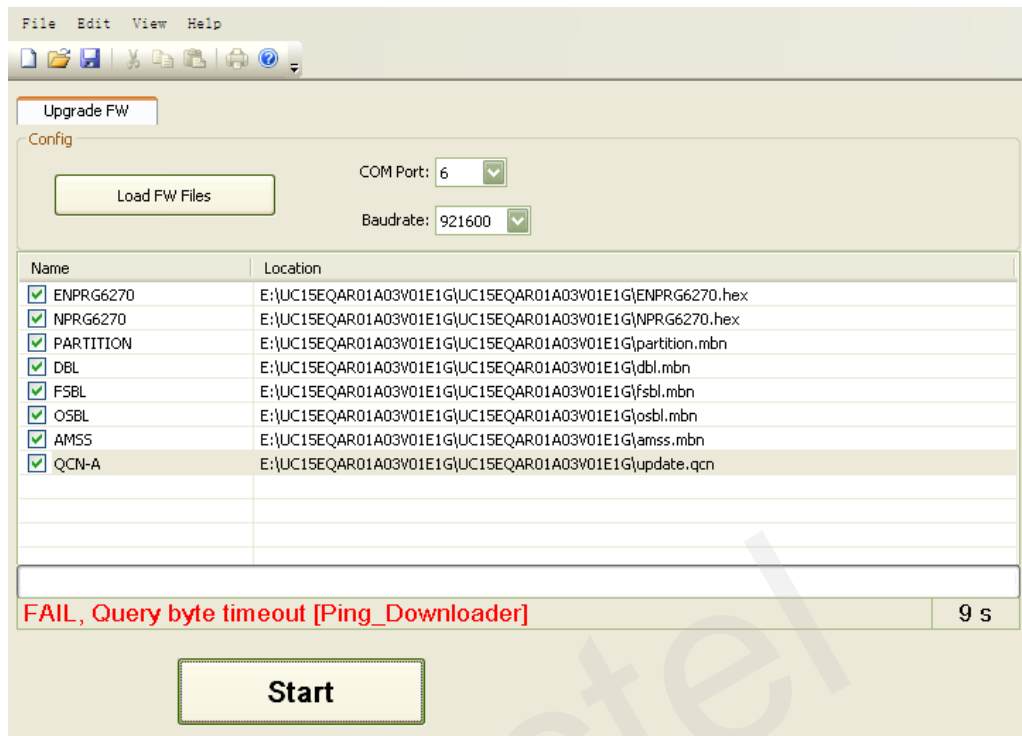


Figure 31: Unsupported Baudrate is Selected (UC15/UC20 Module)

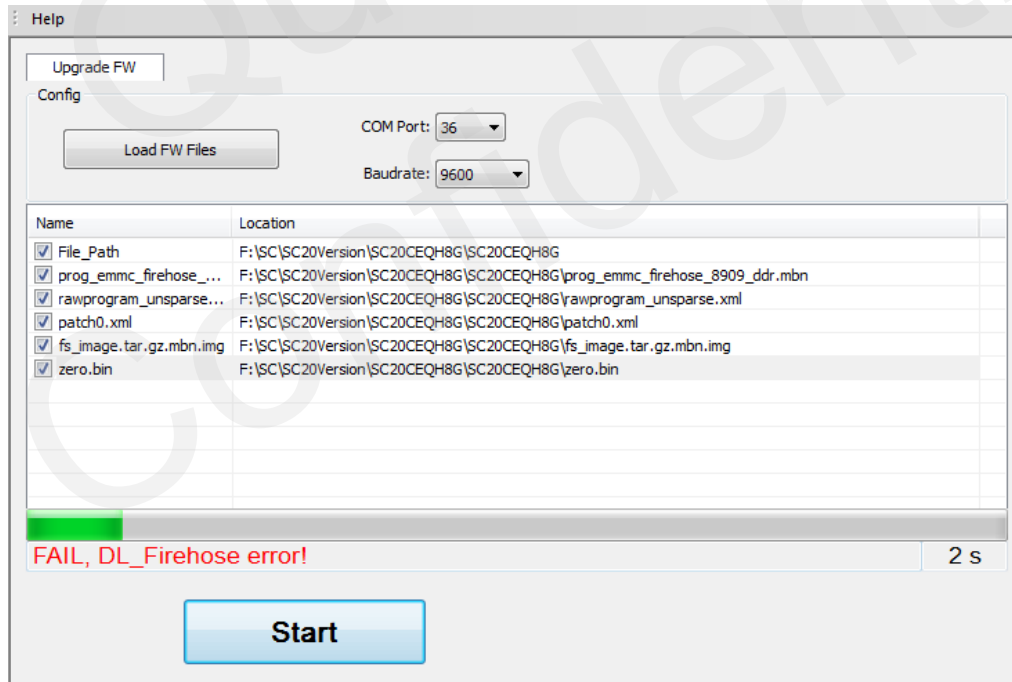


Figure 32: Unsupported Baudrate is Selected (SCXX Module)

2.2.4. Selected an Invalid Scatter File

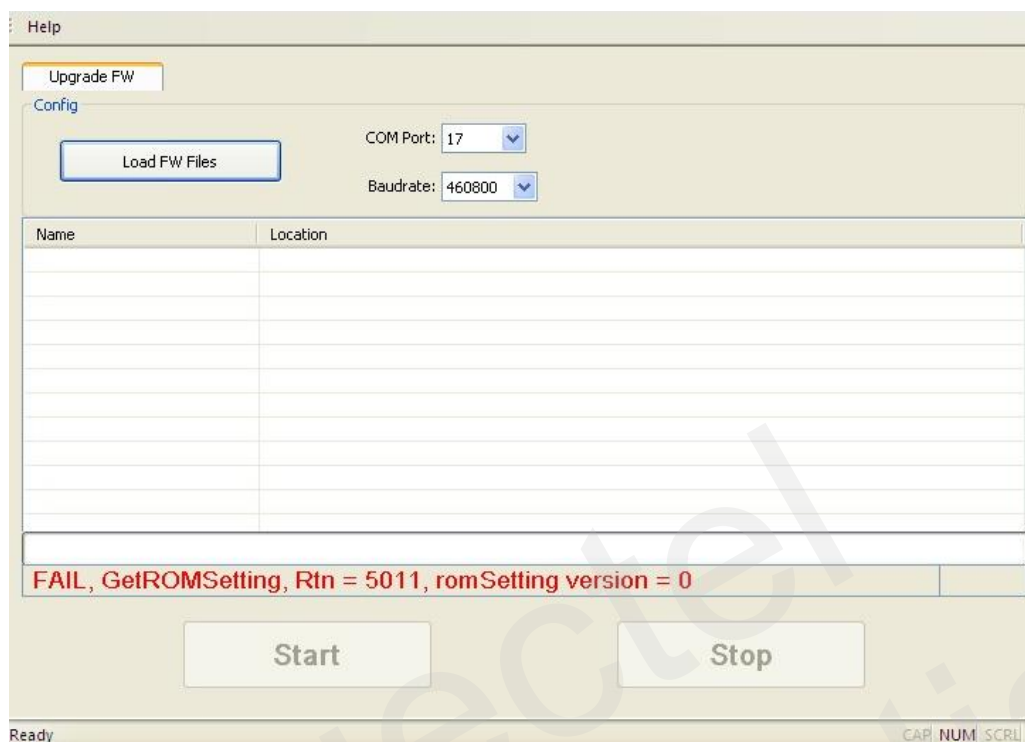


Figure 33: An Invalid Scatter File is Selected

2.2.5. Selected an Invalid Load File (GCXX Module)

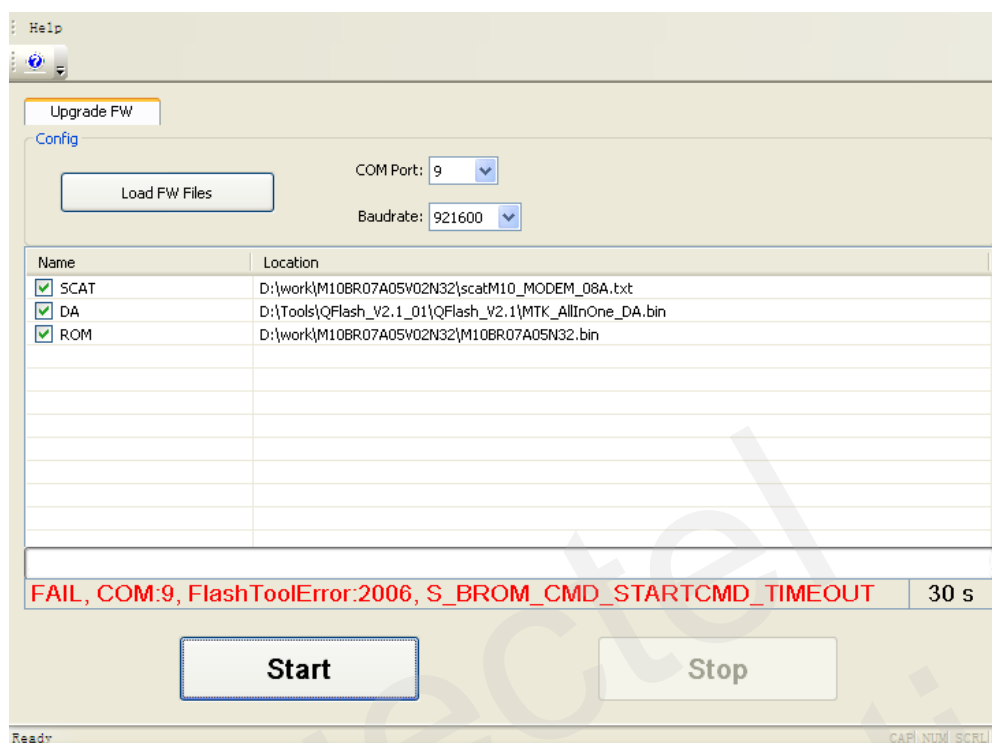


Figure 34: An Invalid Load File is Selected (GCXX Module)

2.2.6. Power Supply is Abnormal

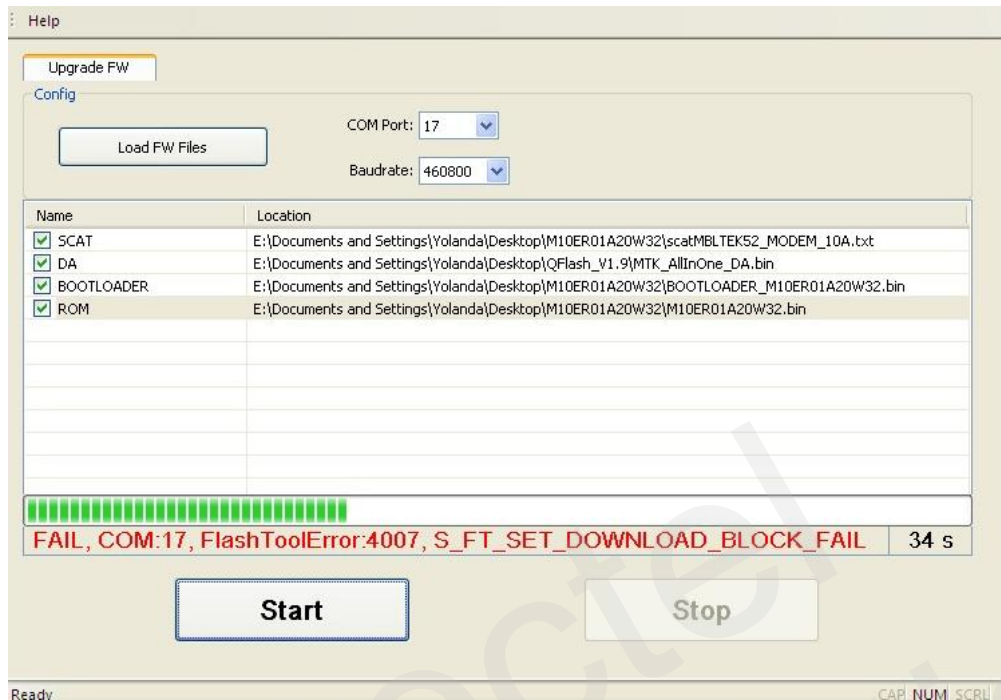


Figure 35: Power Supply is Abnormal (GCXX Module)

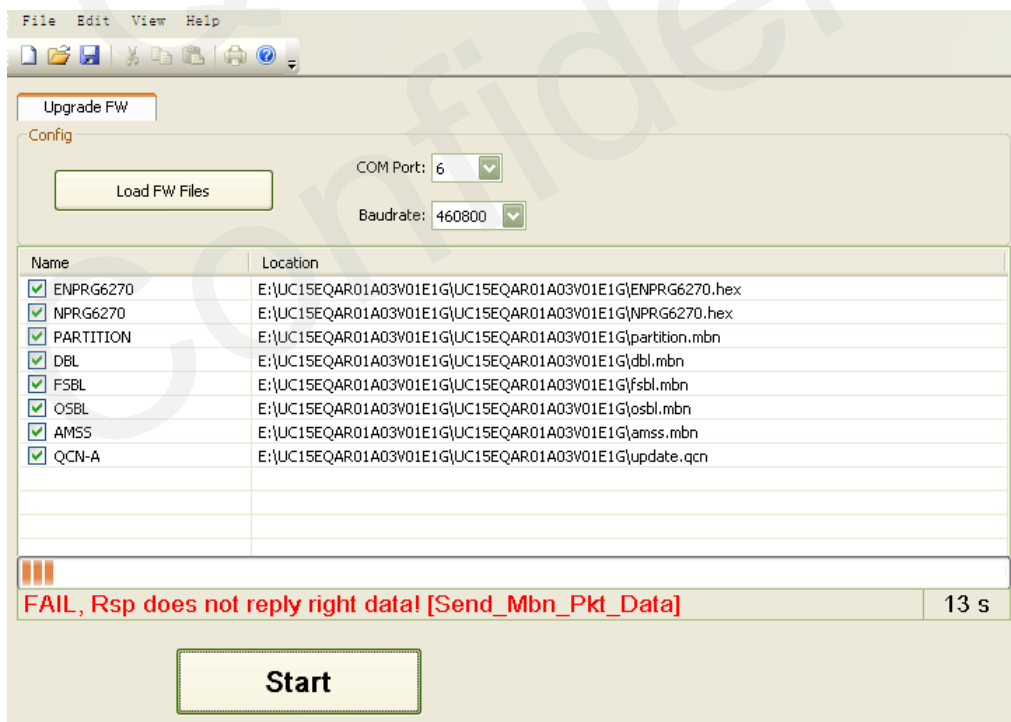


Figure 36: Power Supply is Abnormal (UC15/UC20 Module)

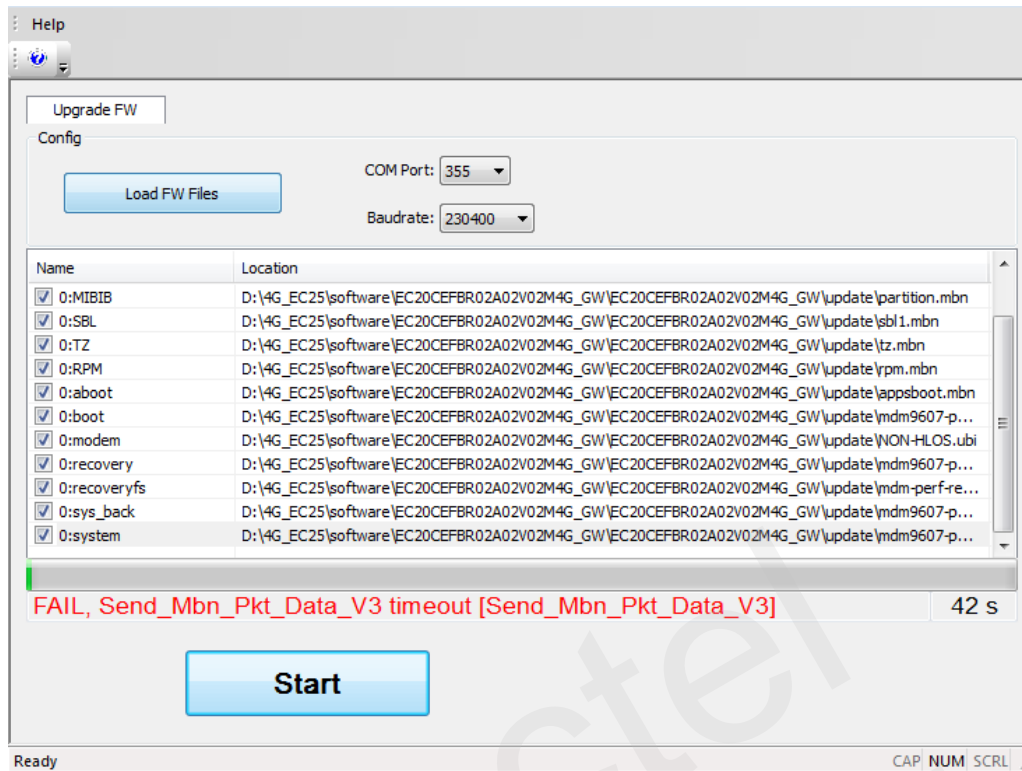


Figure 37: Power Supply is Abnormal (ECXX Module)

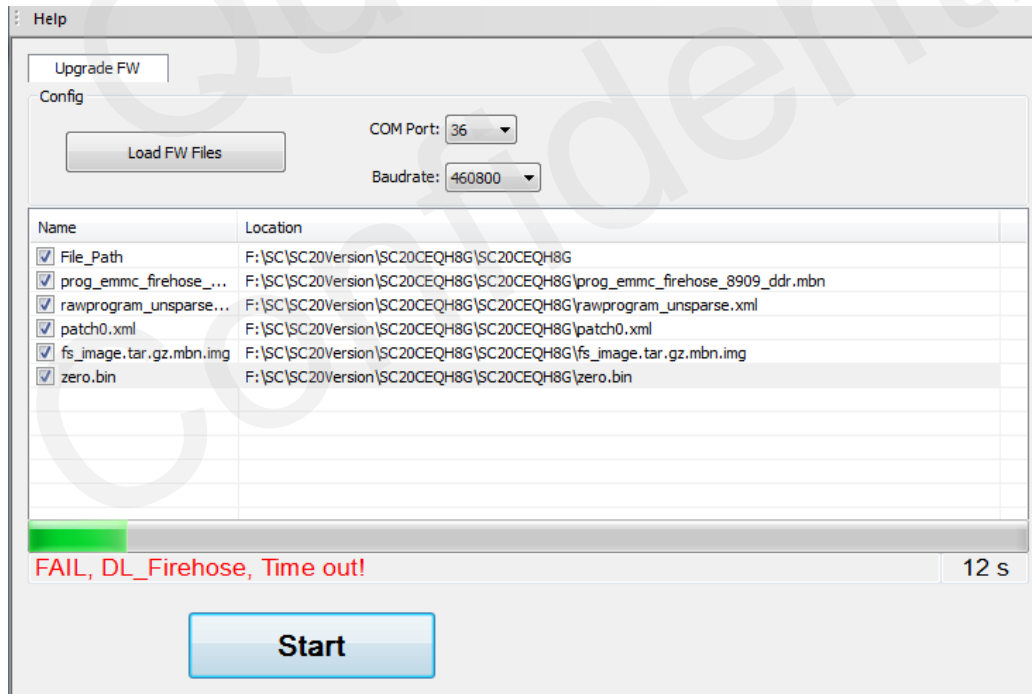


Figure 38: Power Supply is Abnormal (SCXX Module)

2.2.7. USB to Serial Cable is Abnormal

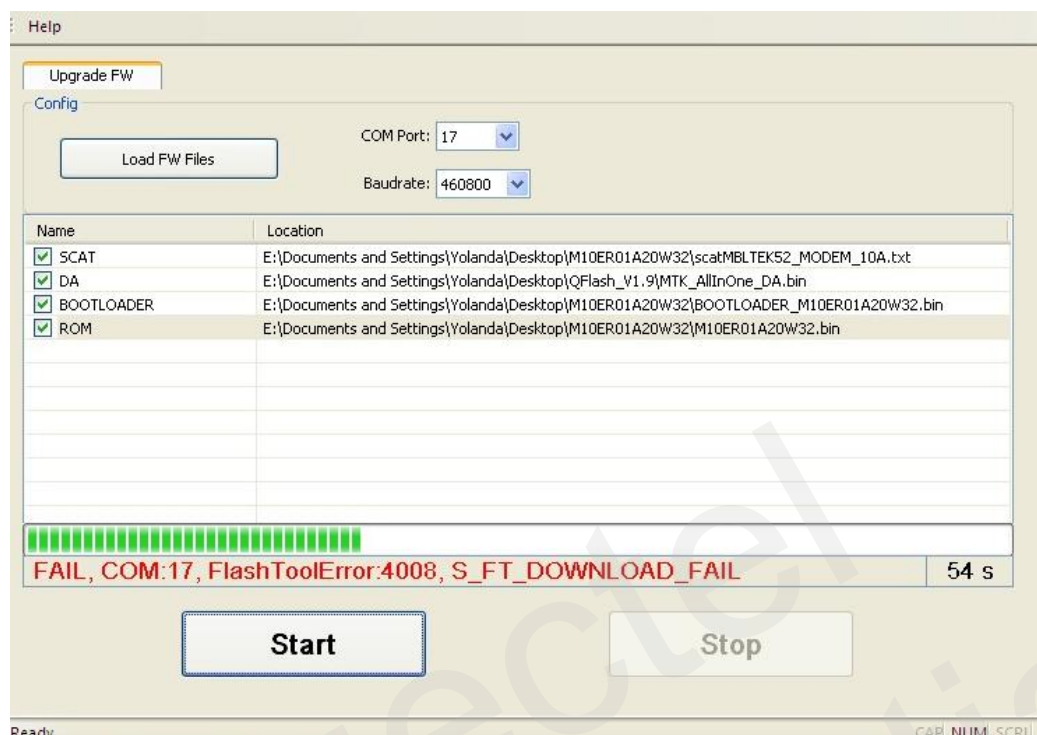


Figure 39: USB to Serial Cable is Abnormal

3 Appendix A Reference

Table 1: Terms and Abbreviations

Abbreviation	Description
APP	Application
EVB	Evaluation Board
OS	Operating System
PC	Personal Computer
UART	Universal Asynchronous Receiver/Transmitter
USB	Universal Serial Bus