

QFlash User Guide

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About the Document

History

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1.1	2012-12-02	Yolanda YAO	Updated QFlash version to 1.1
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1 Introduction

1.1. OS and Version

This document mainly introduces how to upgrade the firmware with “QFlash” upgrade tool supplied by Quectel. The tool can run on a PC without installation 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. Applicable Modules

QFlash is applicable to the following Quectel modules.

Table 1: Applicable Modules

NB-IoT Module Series	BCxx: BC95/BC95-G/BC68/BC66 module
LTE Module Series	ECxx: includes EC20/EC25/EC21 modules
	EG9x: includes EG91/EG95 modules
	Ex06: includes EP06/EG06/EM06 modules
	SCxx: includes SC20/SC60 modules
	SGxx: includes SG30/SG36 modules
	EM05 module
	AG35 module

	BG96 module
	EM12 module
UMTS/HSPA(+) Module Series	UCxx: includes UC15/UC20 modules
	UGxx: includes UG95/UG96 modules
GSM/GPRS Module Series	Mxx: includes M10/M66/M72/M80/M85/M95/MC25/MC60/M25/M26 modules
	GCxx: GC10 module

1.3. About QFlash Tool

The QFlash tool developed by Quectel is shown as below.

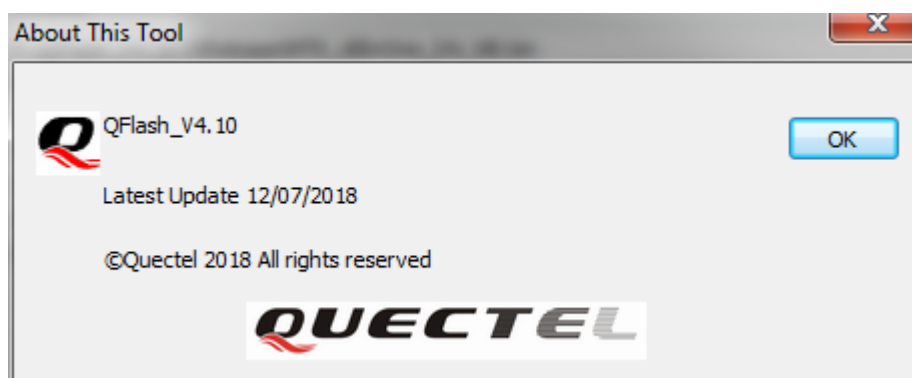


Figure 1: About the Tool

NOTE

The paths where the tool and firmware are stored should NOT contain any spaces, and English characters are preferred.

2 Firmware Upgrade Procedures

The firmware can be upgraded through the following three steps by the QFlash tool.

Step 1: Set serial port and baud rate.

Step 2: Load firmware files.

Step 3: Upgrade the firmware.

The following describes the details of how to use the tool to upgrade firmware.

2.1.1. Configure Serial Port and Baud Rate

When the QFlash tool is opened, the main interface will show as below.

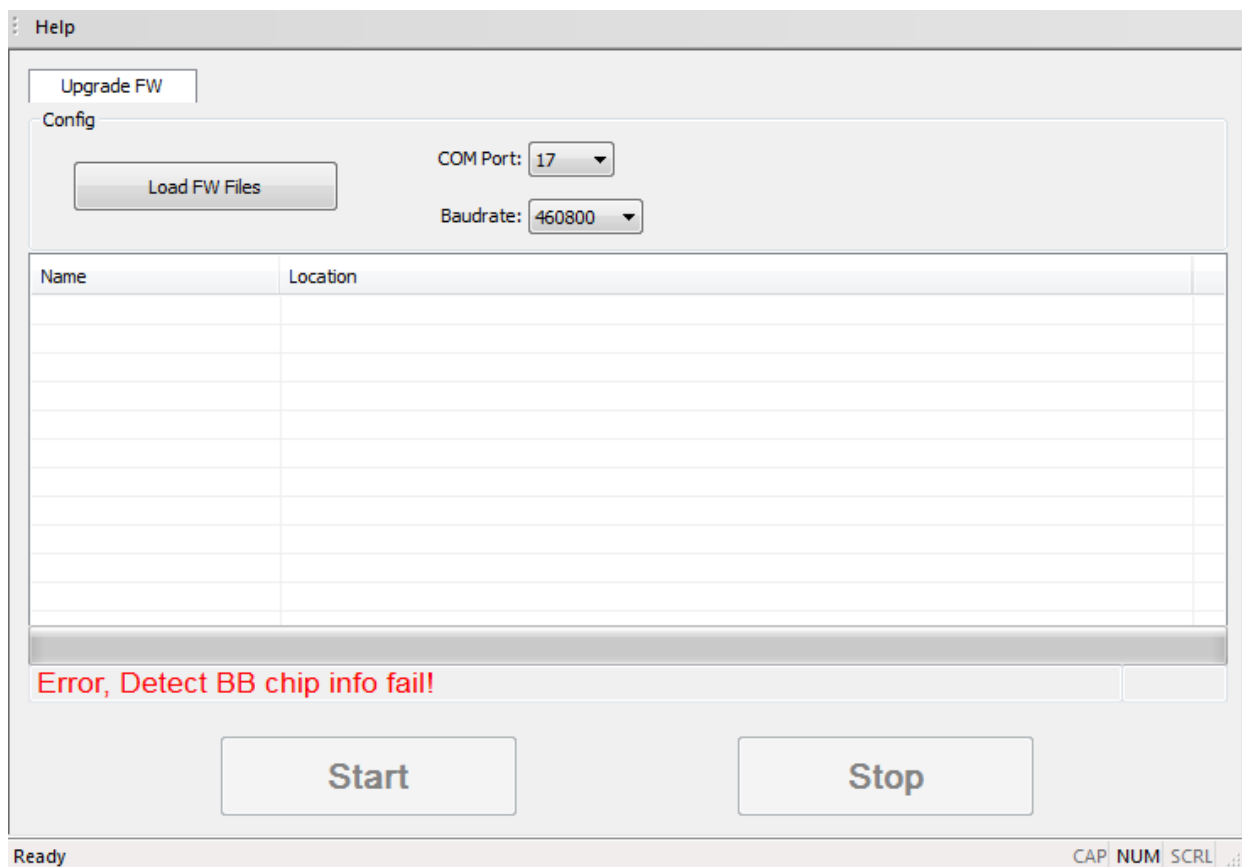


Figure 2: Main Interface

2.1.2. Set Serial Port

2.1.2.1. COM Port Selection for Mxx/GCxx/BCxx Modules

Click “**COM Port**” dropdown list to select the COM port through which the firmware is upgraded. As shown in the following figure.

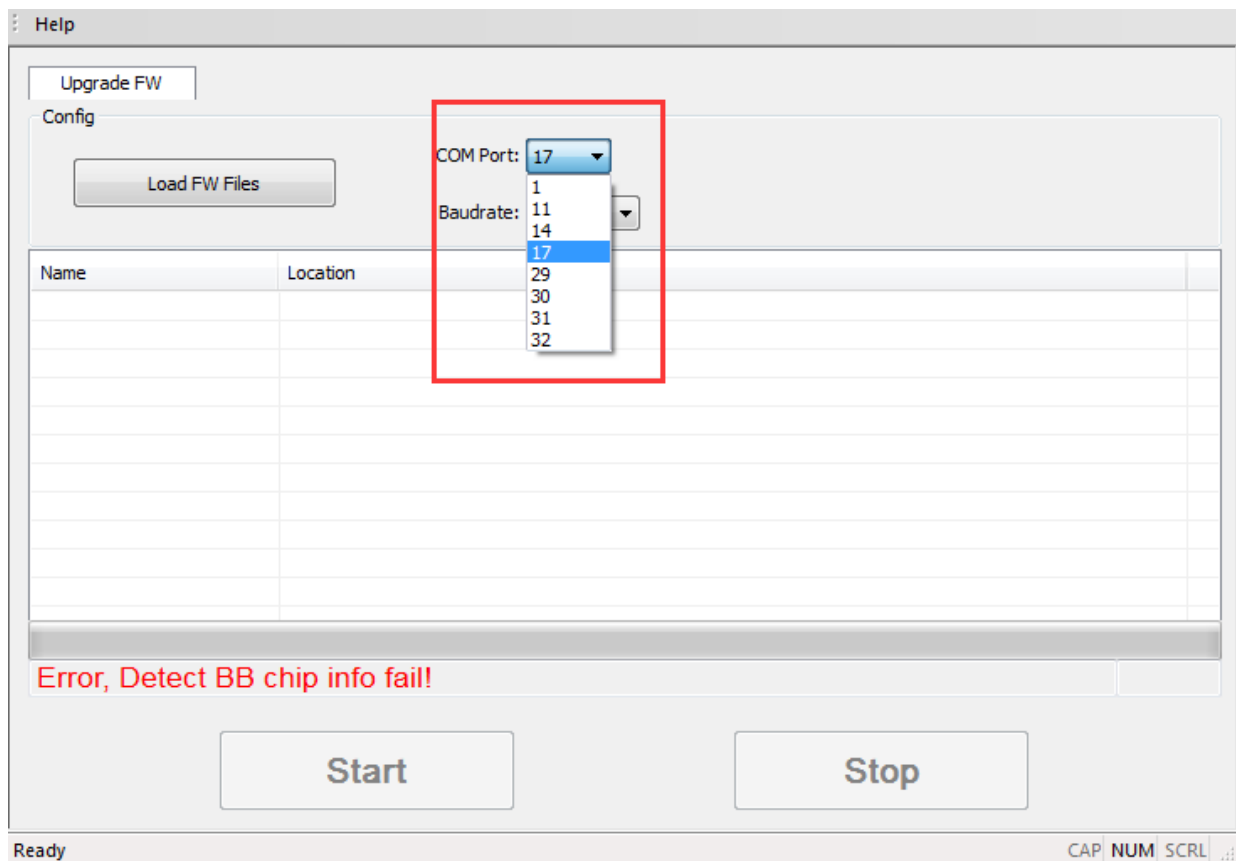


Figure 3: Select the Correct Serial Port for Mxx/GCxx/BCxx Modules

NOTES

1. For Mxx modules, it is the main UART to be used for firmware upgrade. After the port is selected, please manually restart the module.
2. For GCxx modules, it is the USB port to be used for firmware upgrade, and then the module will be automatically restarted.
3. For BC95 modules, it is the main UART to be used for firmware upgrade. After the port is selected, please click the “**Start**” button to wait for the prompt “**Module Reset By Hand**”, and then manually restart the module.
4. For BC66 module, it is the USB UART Ch A to be used for firmware upgrade. After the port is selected, please click the “**Start**” button to wait for the prompt “[**INFO**]Start connect with

target, Please reset DUT...", and then manually restart the module.

5. For BC95-G and BC68 modules, it is the USB UART Ch A to be used for firmware upgrade. After the port is selected, please click the **"Start"** button to wait for the prompt **"reset"**, and then manually restart the module.

2.1.2.2. COM Port Selection for UGxx Modules

For UGxx modules, it is the USB port to be used for firmware upgrade, and it can be selected automatically. When firmware files are uploaded, **"COM Port"** dropdown list will display **"USB"** in gray. Then the module will be automatically restarted and ready to upgrade, and the USB port will be identified. The interface is shown in the following figure.

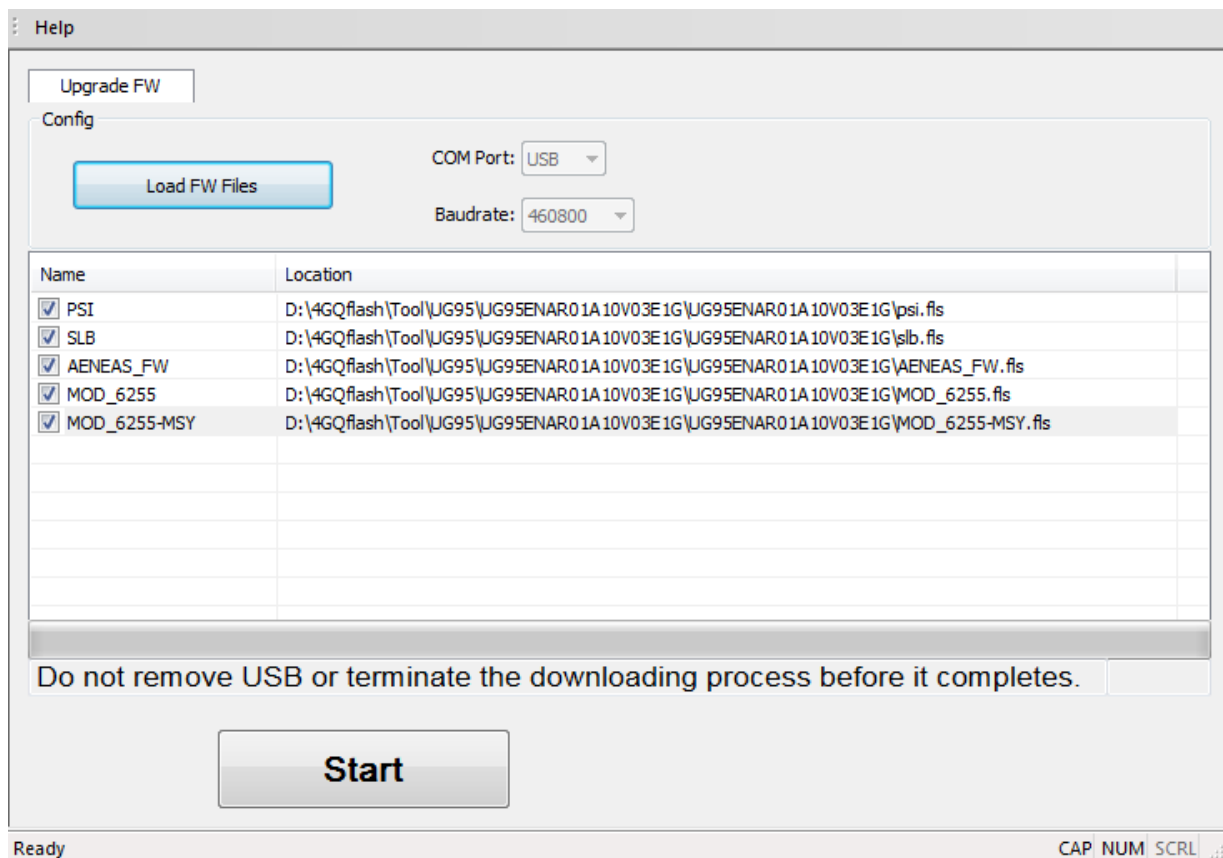


Figure 4: No Need to Select COM Port for UGxx Modules

2.1.2.3. COM Port Selection for UCxx/ECxx/EGxx/Ex06/EM05/AG35/BG96/EM12 Modules

For UCxx/ECxx/EGxx/Ex06/EM05/AG35/BG96/EM12 modules, the USB DM port can be used for firmware upgrade. Click **"COM Port"** dropdown list and select the USB DM port for upgrade, as shown in the following figure.

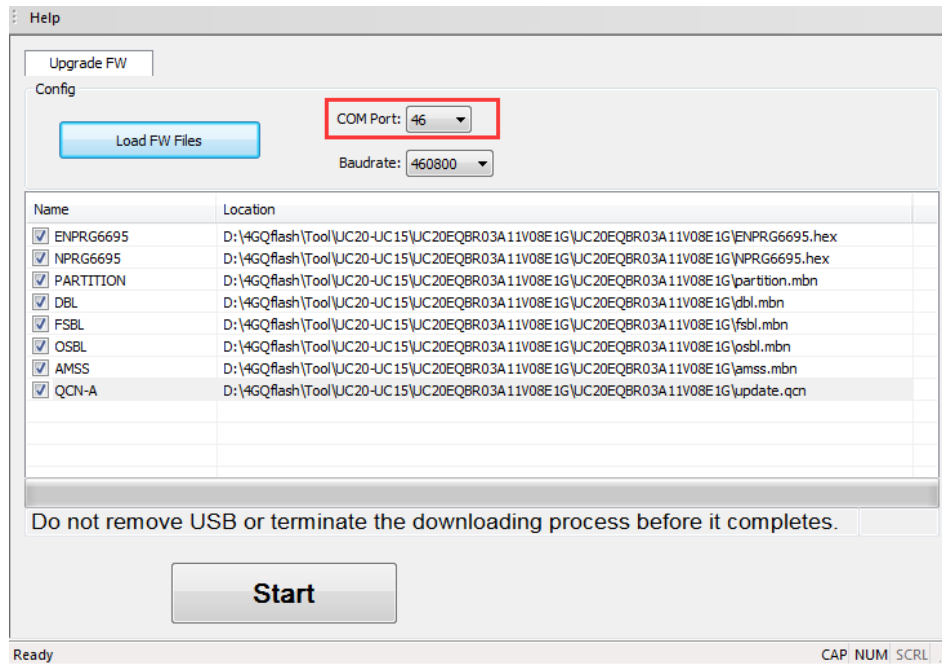


Figure 5: Select the USB DM Port for UCxx/ECxx/EGxx/Ex06/EM05/AG35/BG96/EM12 Modules

2.1.2.4. COM Port Selection for SCxx/SGxx Modules

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

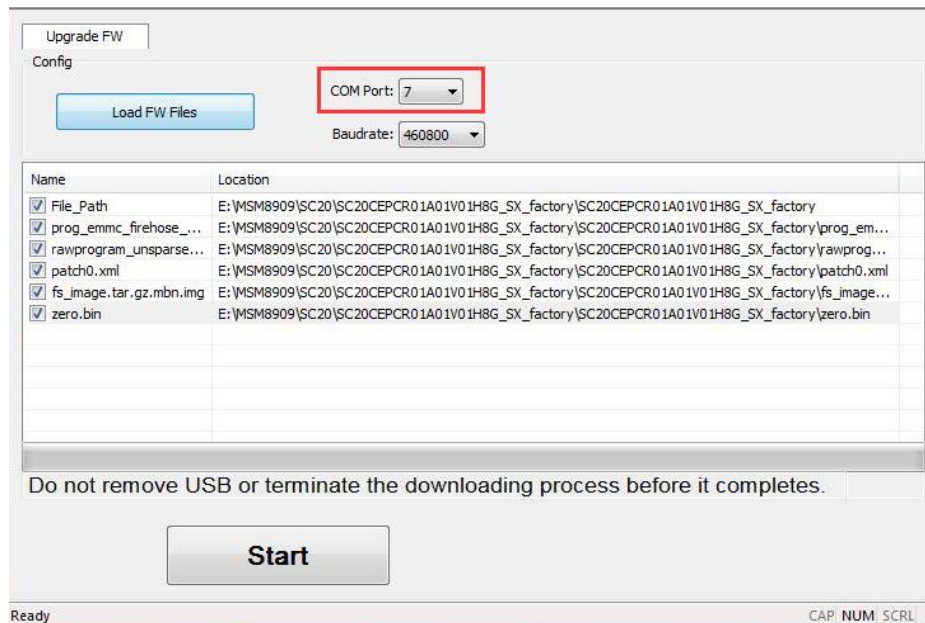


Figure 6: Select the HS-USB Diagnostics 9091 Port for SCxx/SGxx Modules

2.1.3. Set Baud Rate

Click the “**Baudrate**” dropdown list and select an appropriate baud rate. It is recommended to select 921600 for GCxx modules, 9600 for BCxx modules and 460800 for other Quectel modules, as shown in the following figure.

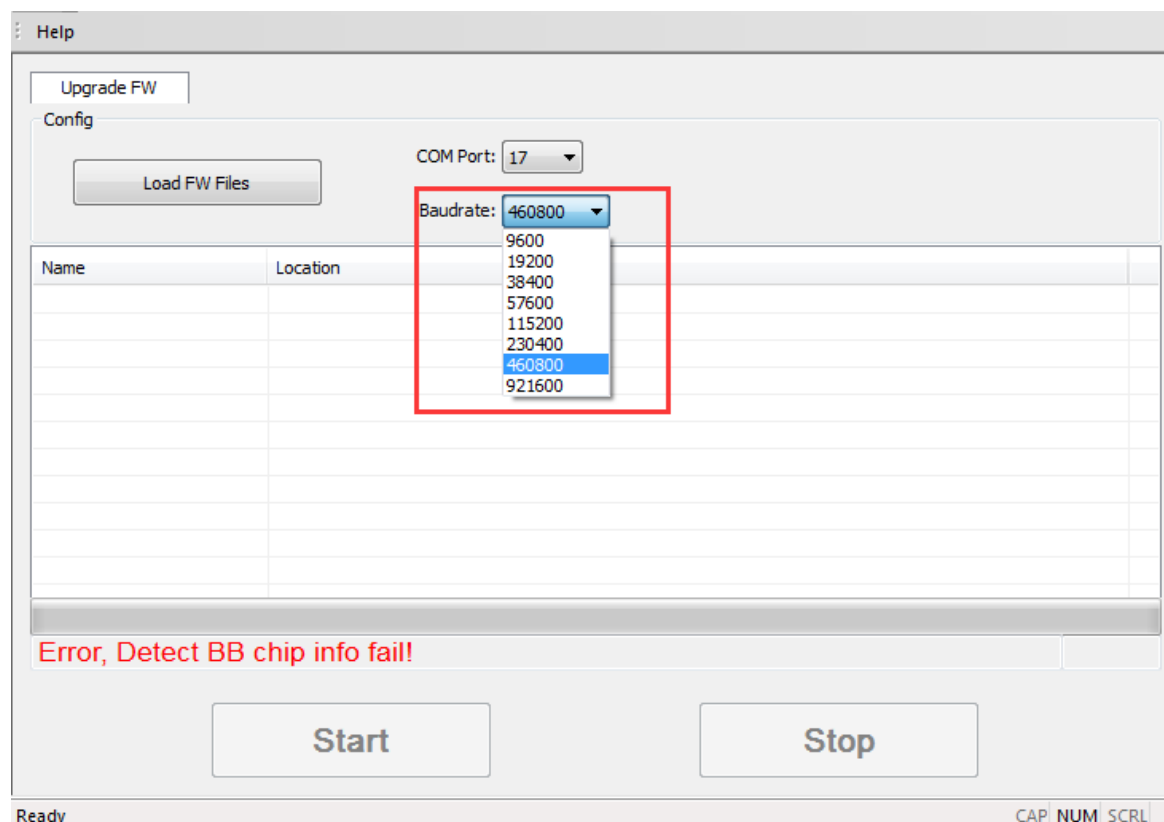


Figure 7: Select the Baud Rate

NOTES

1. Baud rates have many different values, and it is the hardware environment that determines whether a specified baud rate can be supported. If not supported, an error message will be returned.
2. Please set baud rate into 921600 when upgrading firmware for GCxx modules. Other baud rates may lead to an upgrading failure.
3. When upgrading firmware for BCxx modules, the baud rate is 9600 by default.
4. Baud rate setting is unnecessary for USB virtual ports.

2.2. Load Firmware Files

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

Step 2: Select the *.txt*, *.cfg*, *.mbn*, *.lod*, *.fls* or *.fwpkg* file which needs to be downloaded to the module.

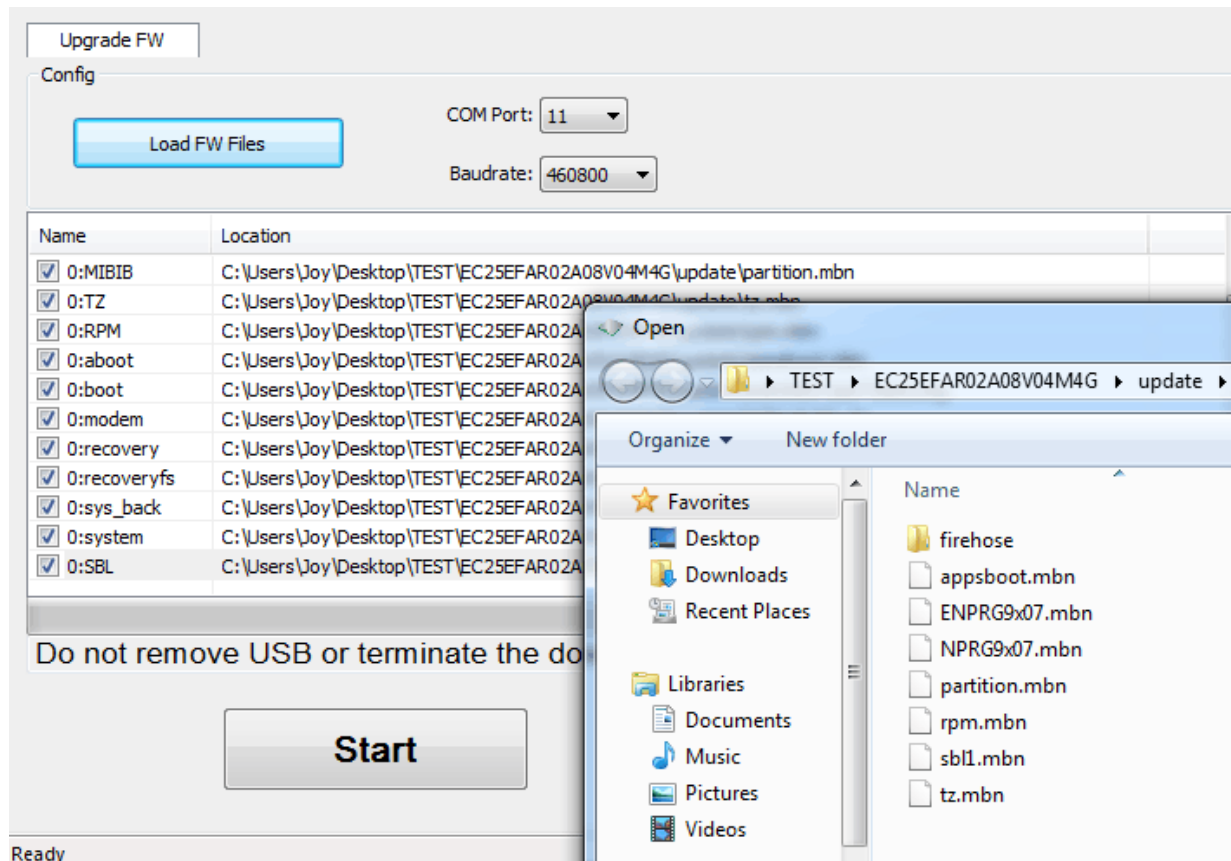


Figure 8: Select the File to be Downloaded

NOTE

The path where the firmware is stored should NOT contain any spaces, and English characters are preferred.

2.2.1. Load APP Firmware for OpenCPU or Quecopen Modules

This step is only necessary for Quectel OpenCPU or Quecopen modules.

Step 1: Click the button “Load FW Files”, and select the *.cfg* file which needs to be downloaded to the module.

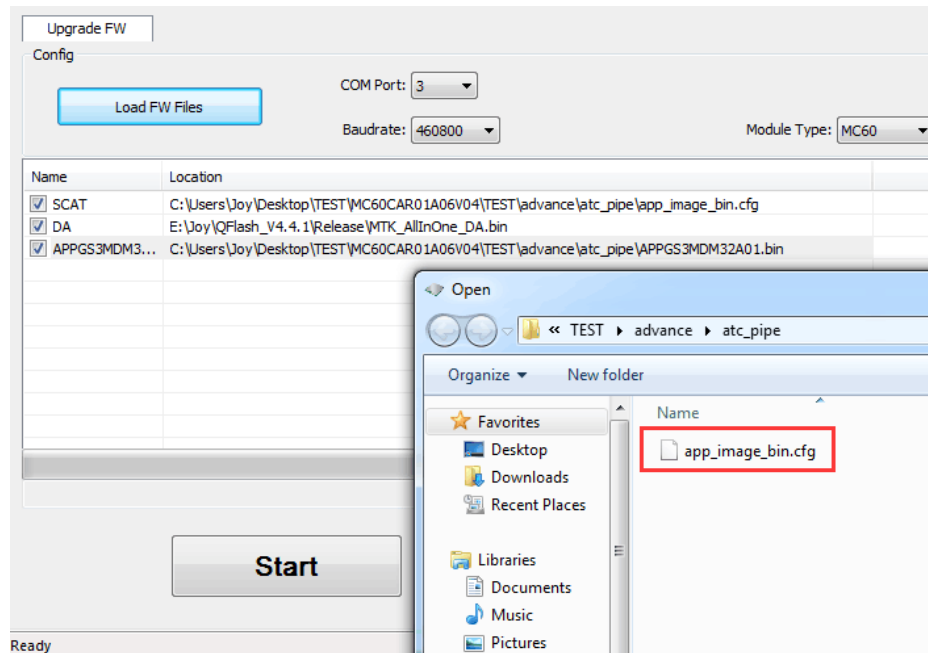


Figure 9: Select the .cfg File

NOTE

The path where the firmware is stored should NOT contain any spaces, and English characters are preferred.

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

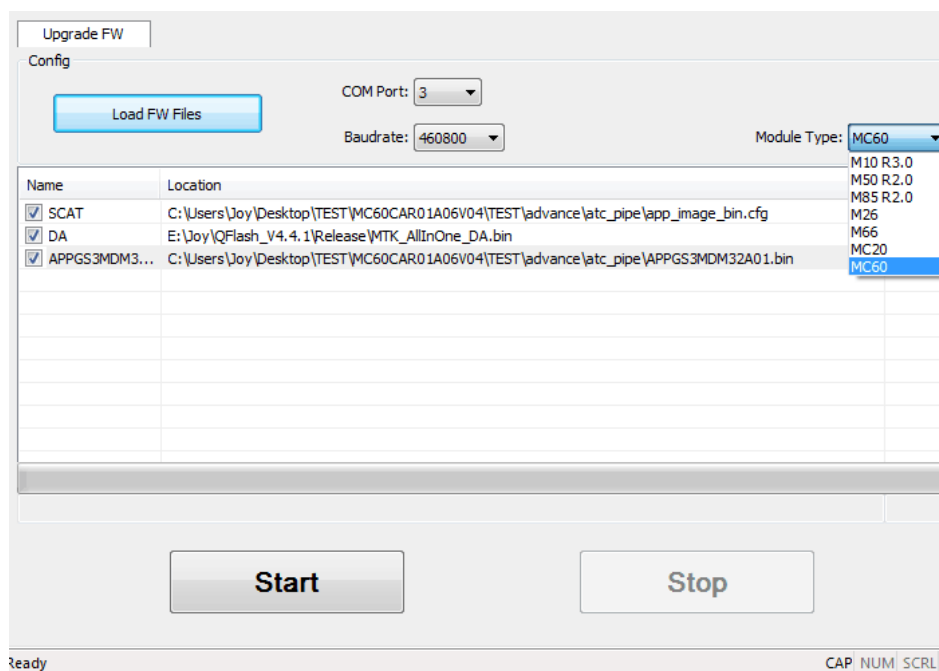


Figure 10: Select the Module Type

2.3. Upgrade Firmware

2.3.1. Standard Method to Upgrade Firmware

Step 1: Click “**Start**” button to upgrade the firmware. There is no “**Stop**” button while upgrading firmware for GCxx/UCxx/UGxx/ECxx/EG9x/Ex06/SCxx/SGxx/BCxx/EM05/AG35/BG96/EM12 modules

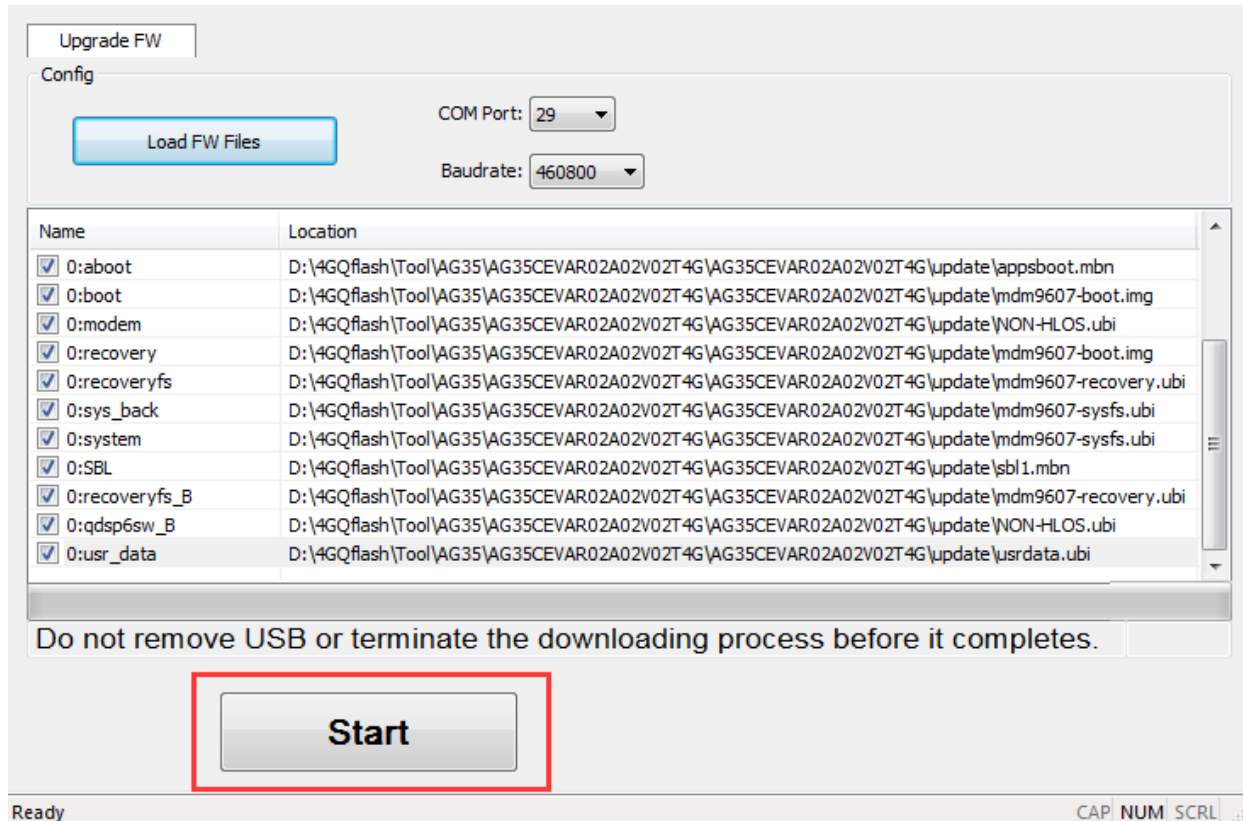


Figure 11: Click the Start Button

NOTES

1. Please note that it is NOT permitted to stop the upgrading process, and please do NOT remove USB or terminate the downloading process before upgrading is completed.
2. For ECxx modules, if the firmware contains a Firehose folder, then it will be downloaded in Firehose mode by default.

Step 2: For Mxx/BC95 modules, switch the D/L to “ON” on EVB after clicking “**Start**” button in 30 seconds, and then manually restart the module. It will start to upgrade the firmware as shown in the following figure.

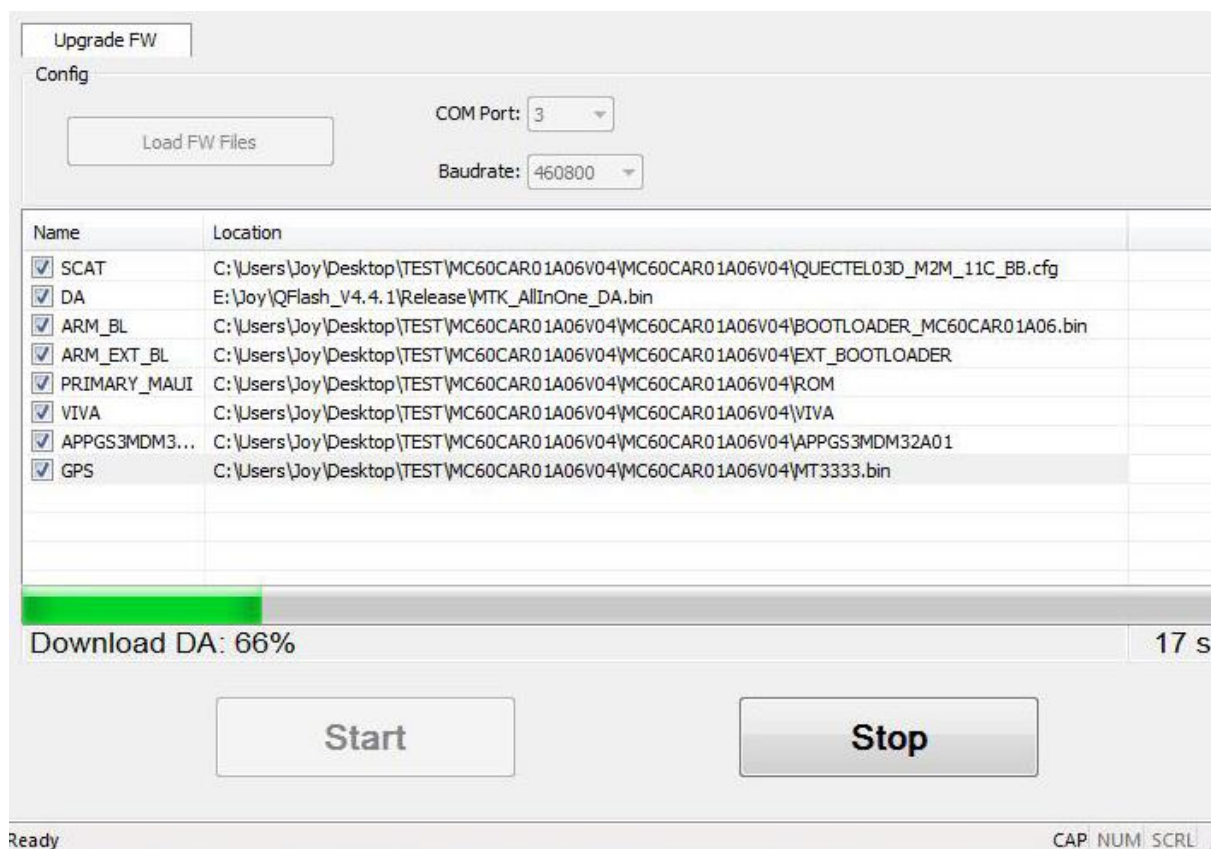


Figure 12: Start to Upgrade after Restarting the Mxx Modules

NOTE

On Mxx modules, please make sure the EVB is powered by 5V power supply when switching the D/L to “ON”, and then manually restart the module.

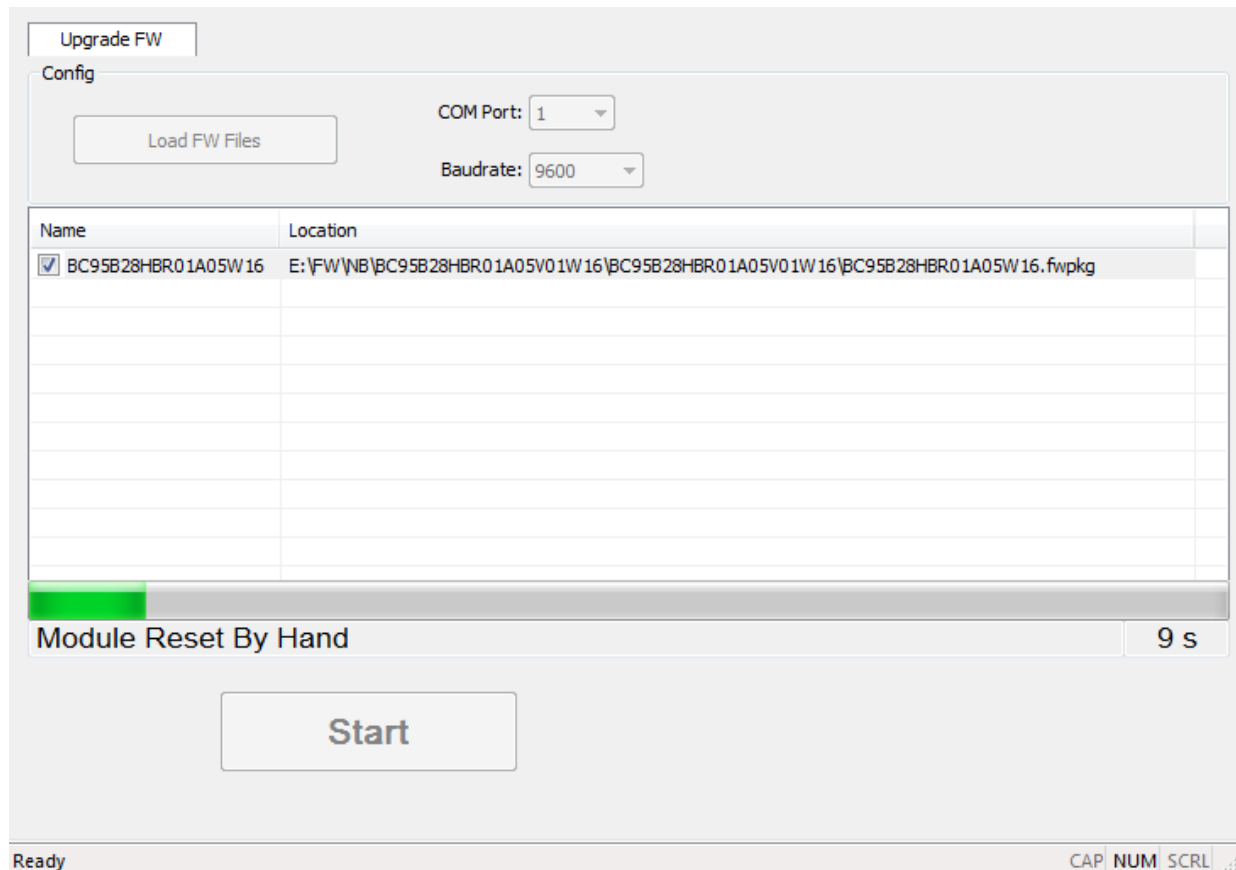


Figure 13: Start to Upgrade after Restarting the BCxx Modules

NOTE

On BC95 module, please make sure the EVB is powered by 5V power supply when switching the D/L to “ON”, and click the “**Start**” button to wait for the prompt “**Module Reset By Hand**”, then manually restart the module.

For BC95-G, BC68 and BC66 modules upgrading firmware through TE-B, please wait for the prompt “**reset**” (for BC95-G/BC68) or “[**INFO**]Start connect with target,Please reset DUT...” (for BC66) after clicking the “**Start**” button, and then manually restart the modules.

If users are upgrading the firmware for GCxx/UCxx/UGxx/ECxx/EG9x/Ex06/SCxx/SGxx/EM05/AG35/BG96/EM12 modules, the module will be restarted automatically, so there is no need to restart the module. Please refer to the following figure.

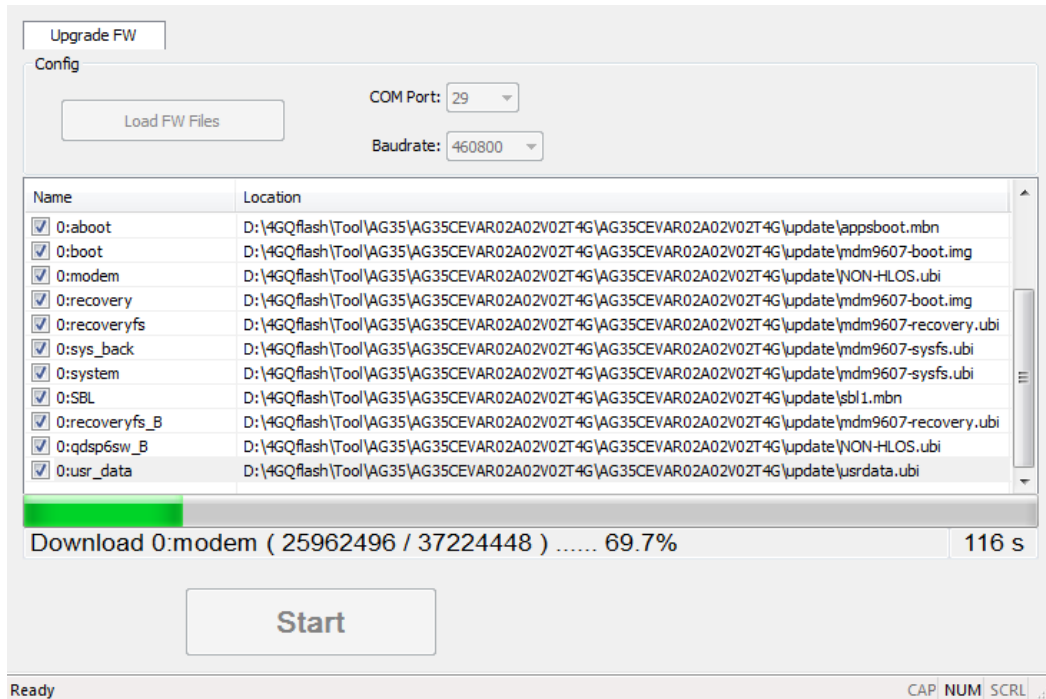


Figure 14: Start to Upgrade Firmware

NOTE

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 the firmware has been successfully upgraded, as shown in the following figure.

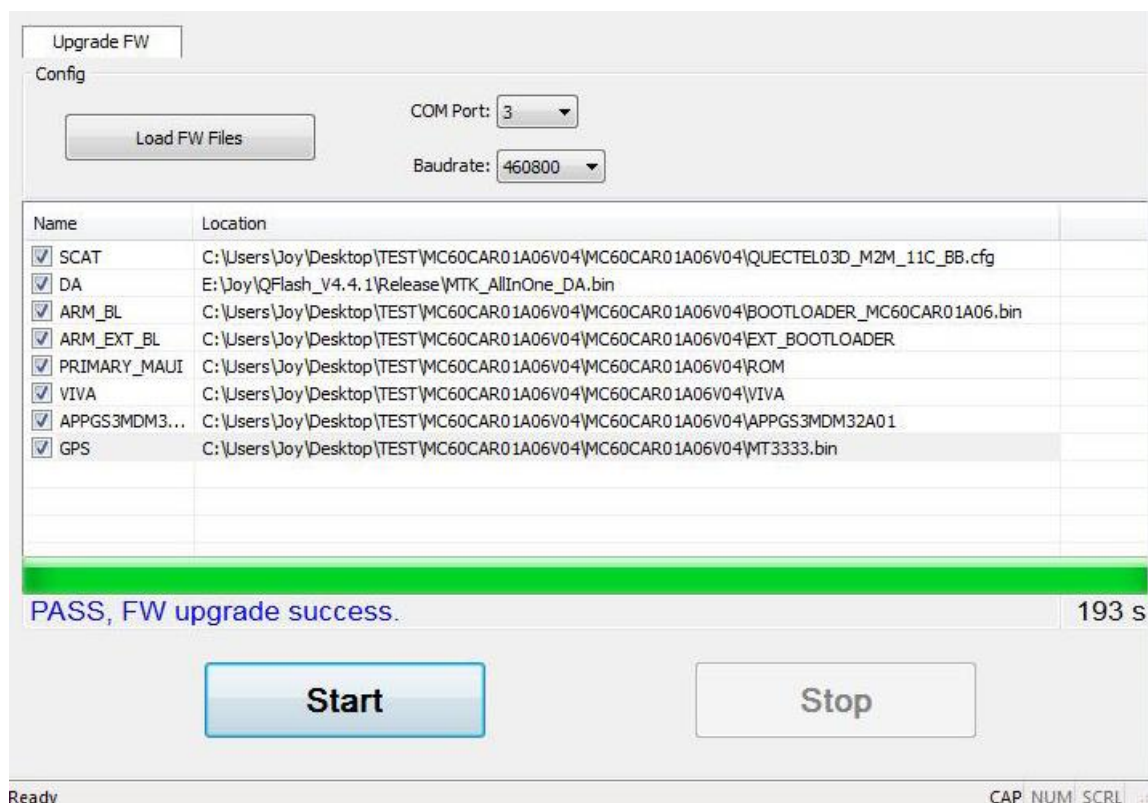


Figure 15: Successful Firmware Upgrade

2.3.2. Command Line Download to Upgrade Firmware (M26&MC60)

For M26 and MC60 modules, in addition to the firmware upgrade method described in **Chapter 2.3.1**, the command line download method is also supported to upgrade the firmware. The procedures are as follows:

Step 1: Open the file *Release* in the tool package, open the file *MainConfig.ini*, change “QFLASH_CMD=0” to “QFLASH_CMD=1” and save the setting.

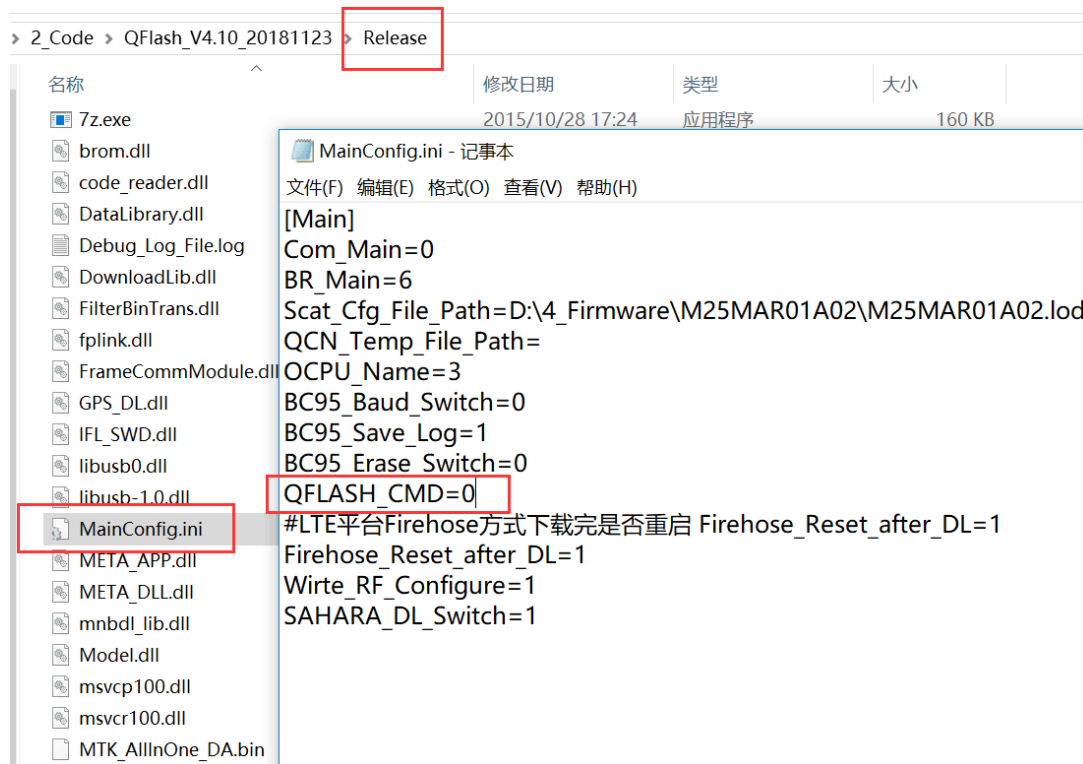


Figure 16: Change the MainConfig.ini Setting

Step 2: Open the file *QFlash_V4.10* in path *Release*, enter the COM Port 37, Baudrate 115200, and the firmware path.

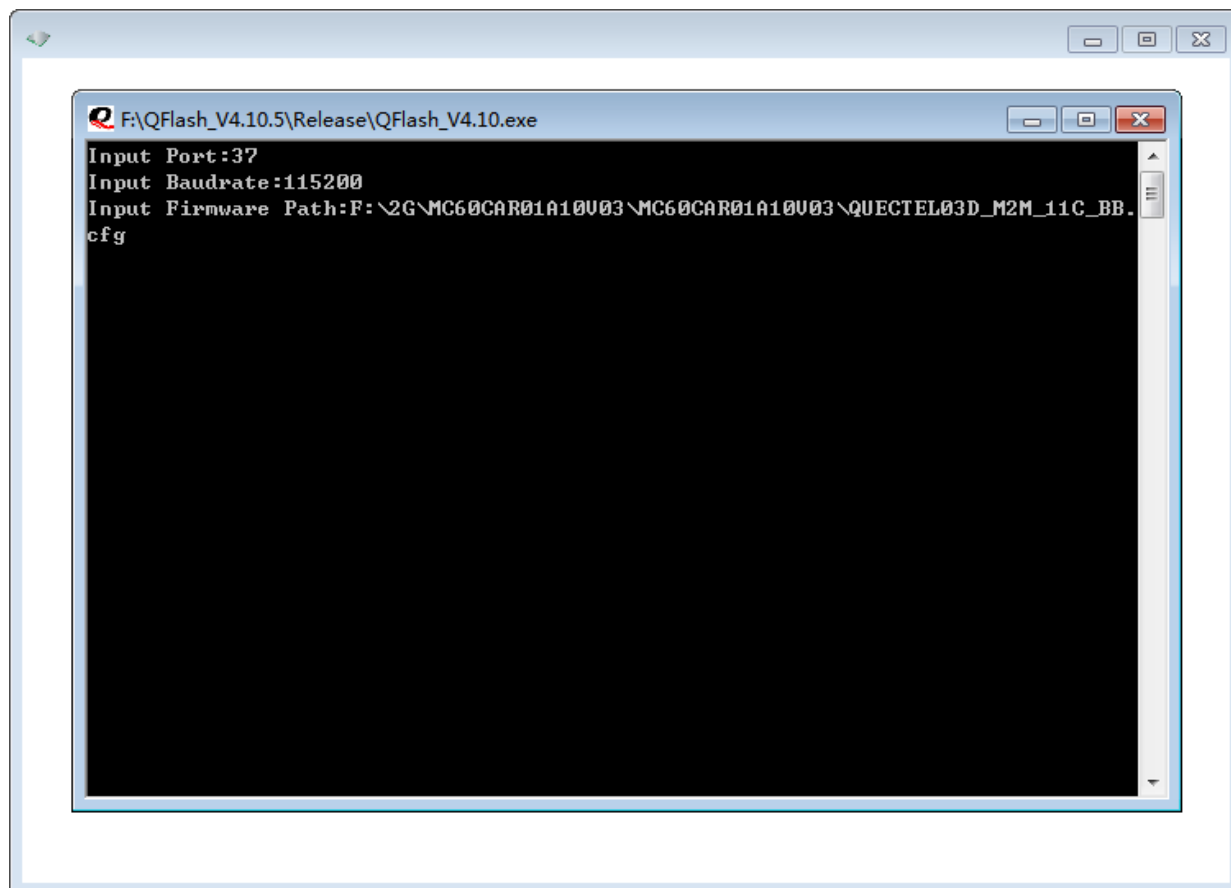


Figure 17: Enter COM Port, Baudrate and Firmware Path

Step 3: Restart the module when there is prompt to do so.

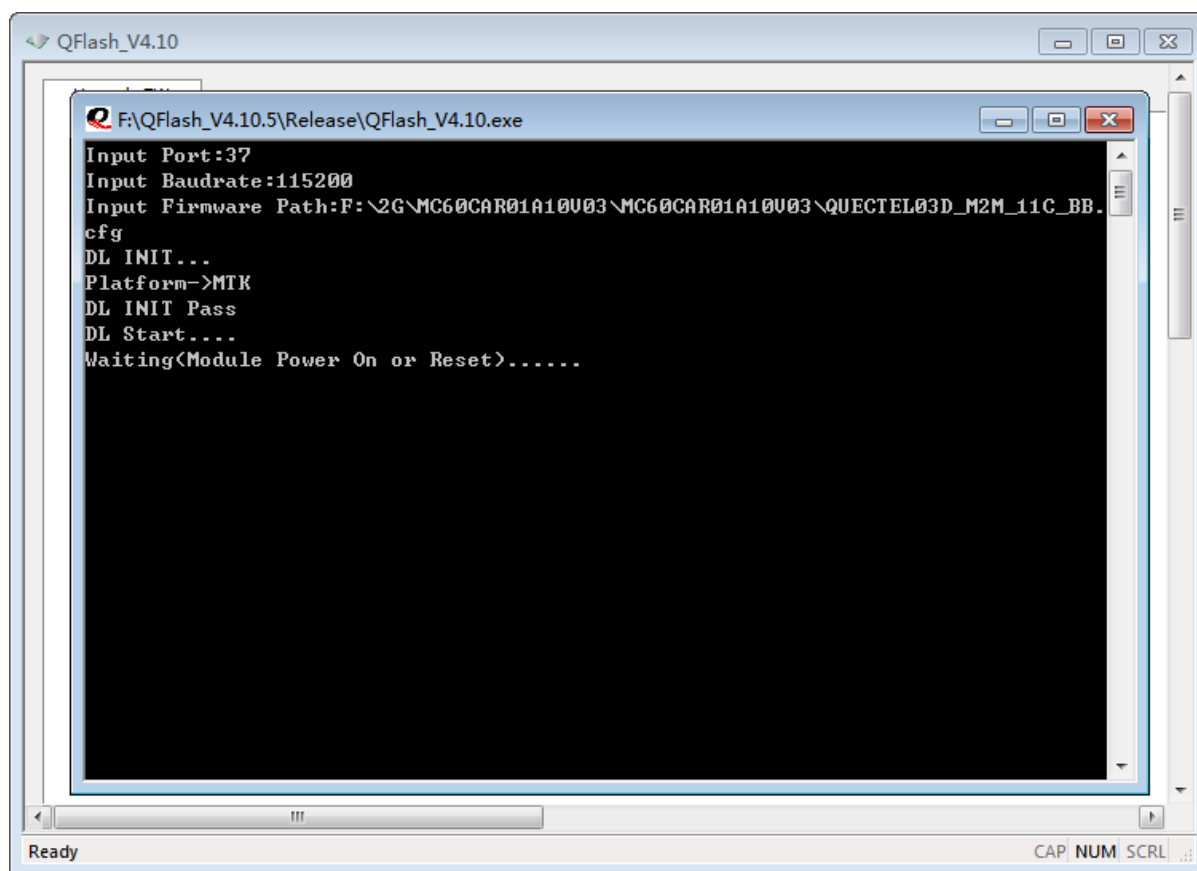


Figure 18: Restart the Module

Step 4: Firmware is upgraded successfully.

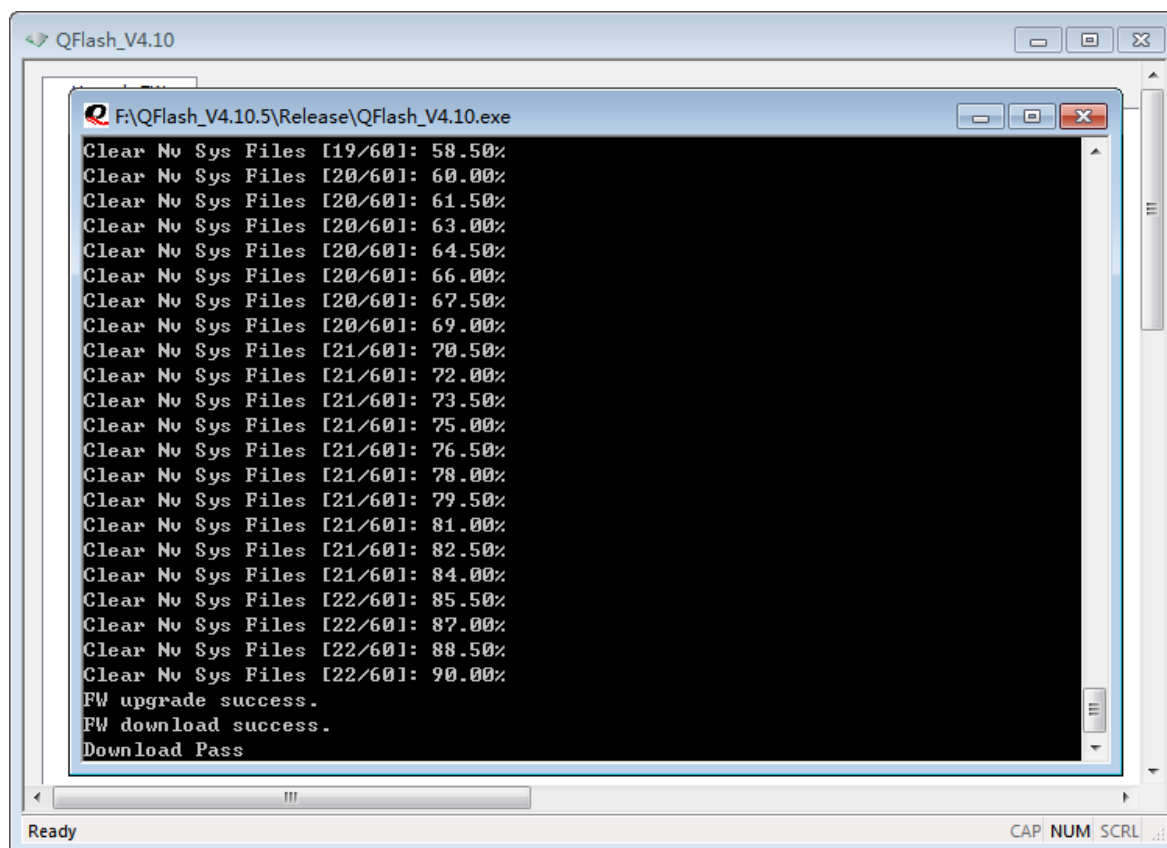


Figure 19: Successful Firmware Upgrade

2.4. Abnormalities

Abnormalities may be caused by incorrect parameter of baud rate, damaged EVB/TE-B or invalid files, etc. The following illustrates some common abnormalities.

2.4.1. Selected a Wrong Serial Port

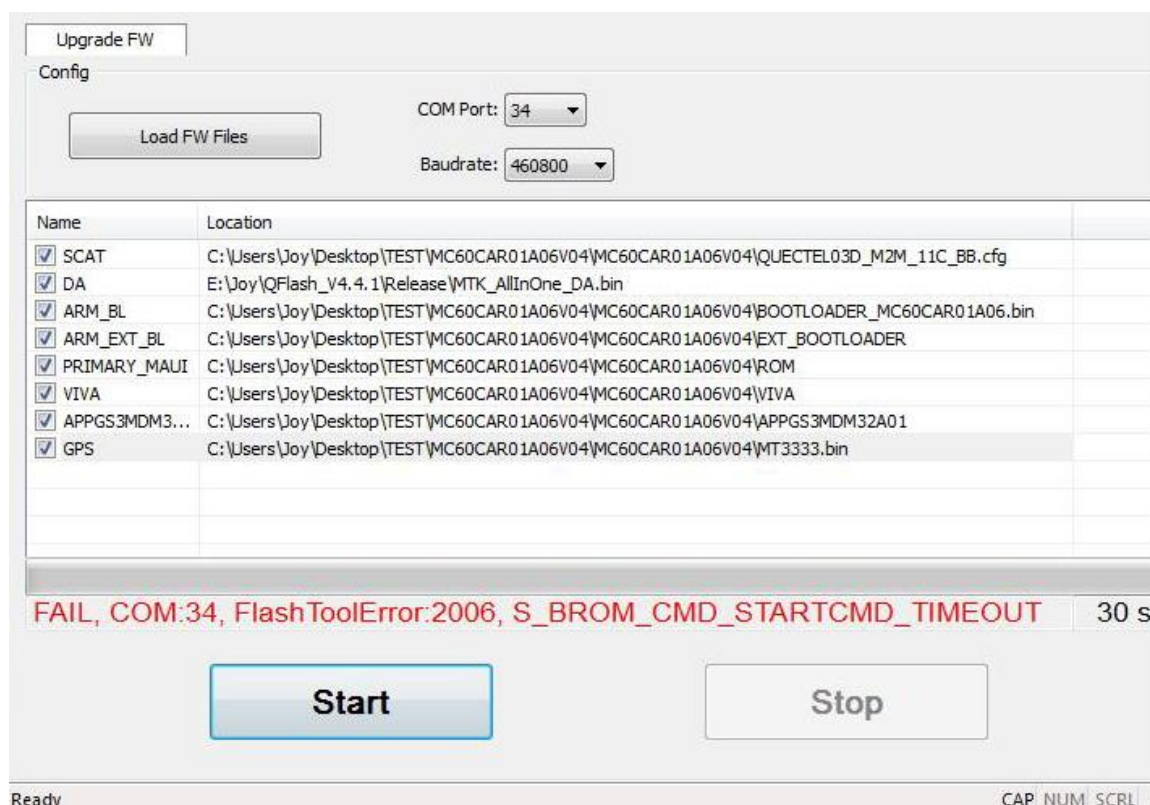


Figure 20: Connected to a Wrong Serial Port (Mxx Modules)

NOTE

After selecting a correct serial port, if the Mxx modules are not restarted, then the error message will be the same as that of selecting a wrong serial port.

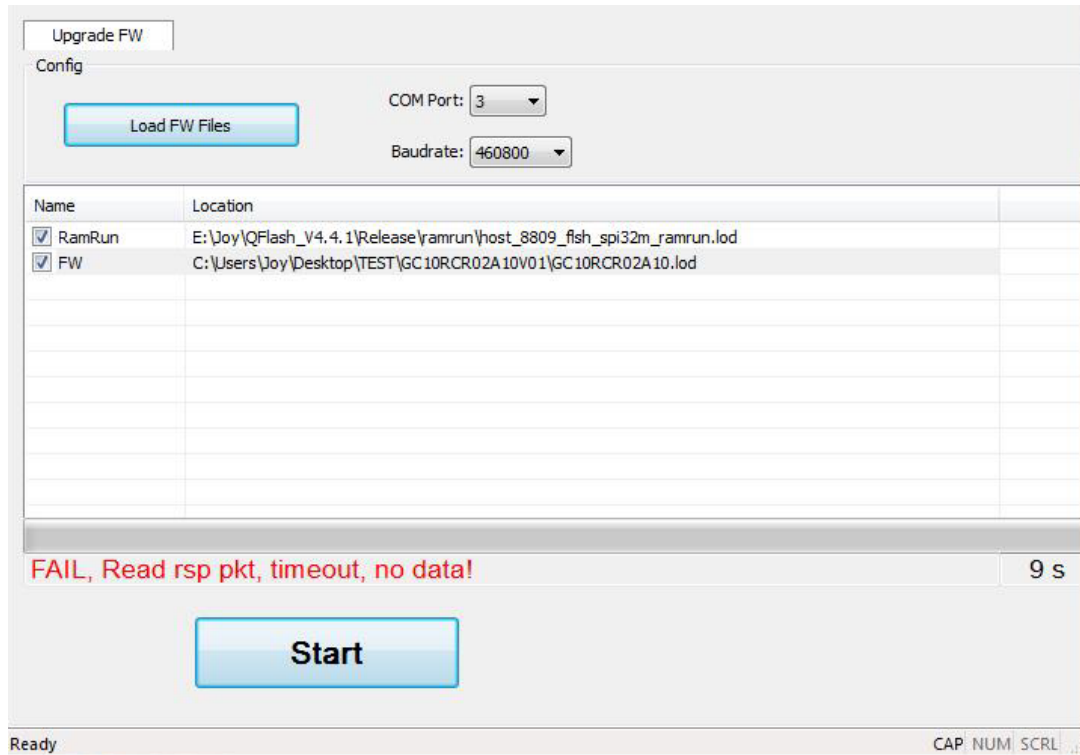


Figure 21: Connected to a Wrong Serial Port (GCxx Modules)

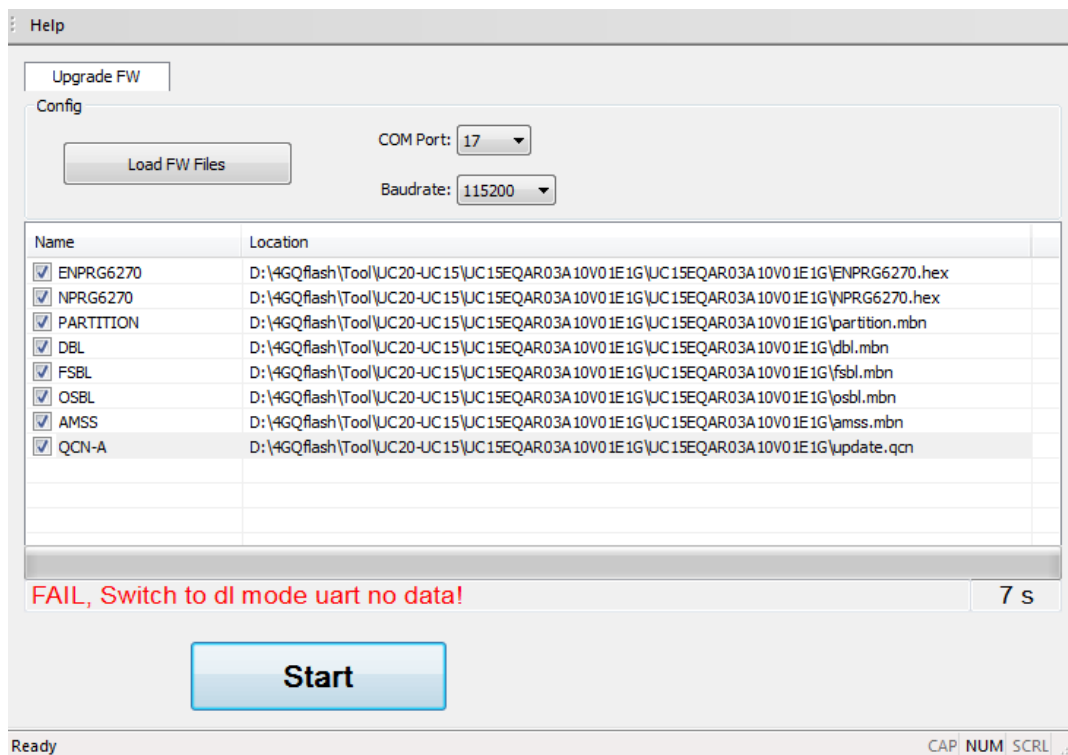


Figure 22: Connected to a Wrong Serial Port (UCxx Modules)

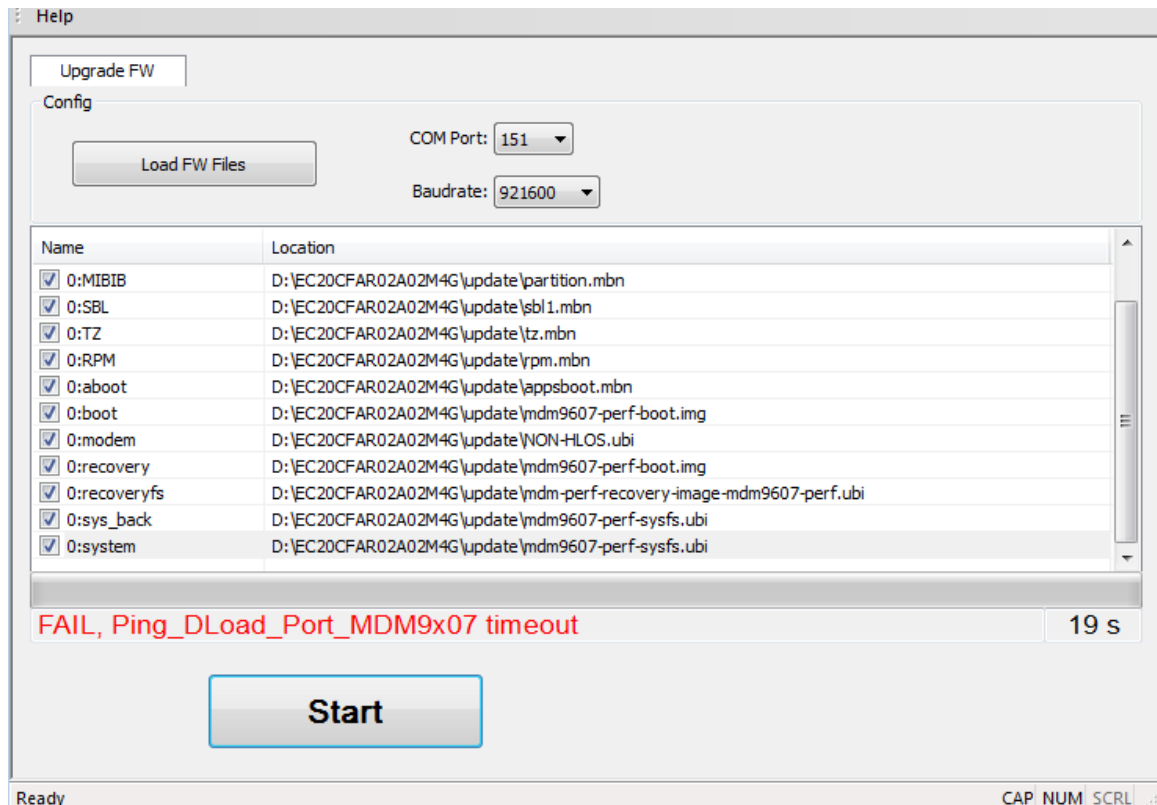


Figure 23: Connected to a Wrong Serial Port (ECxx/EG9x/Ex06/EM05/BG96/EM12 Modules)

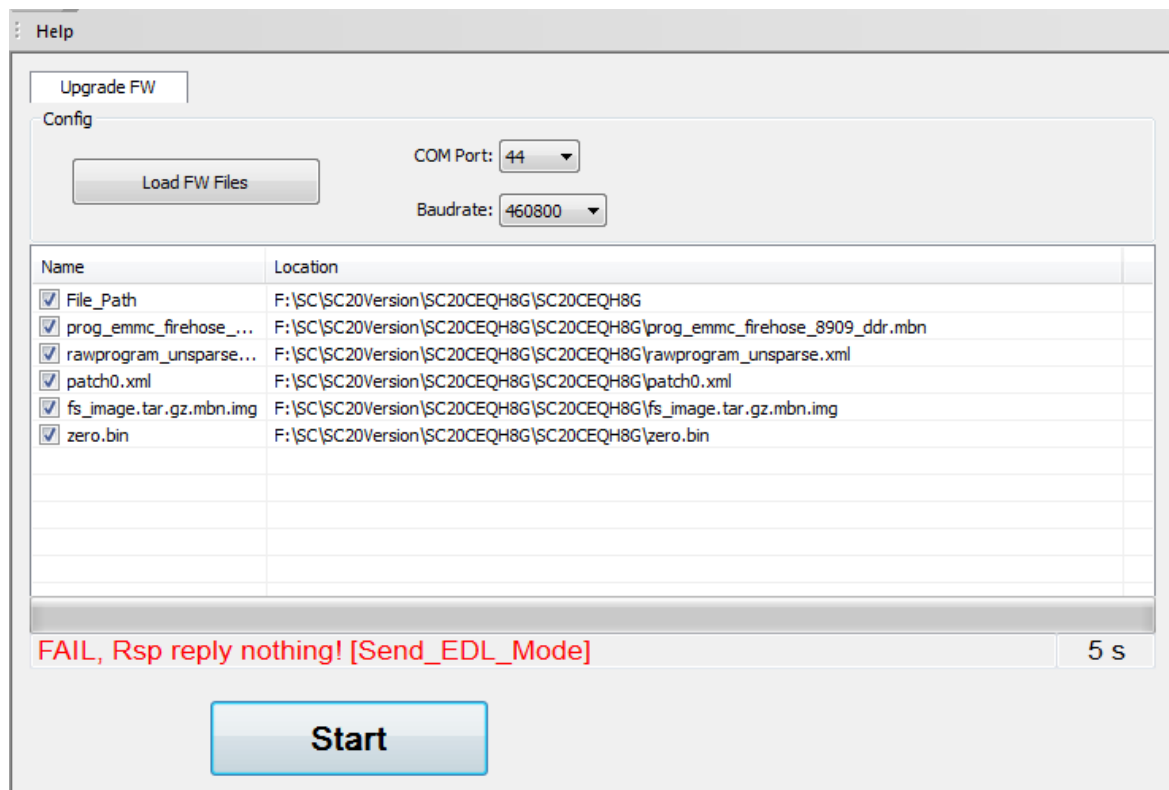


Figure 24: Connected to a Wrong Serial Port (SCxx/SGxx Modules)

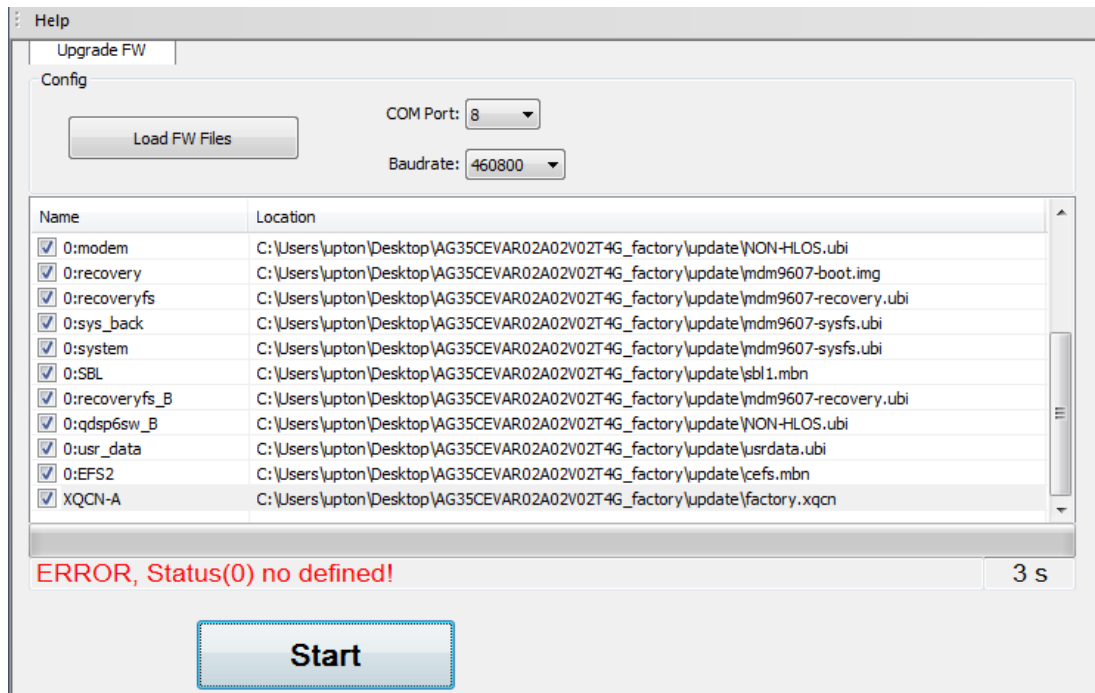


Figure 25: Connected to a Wrong Serial Port (AG35 Module)

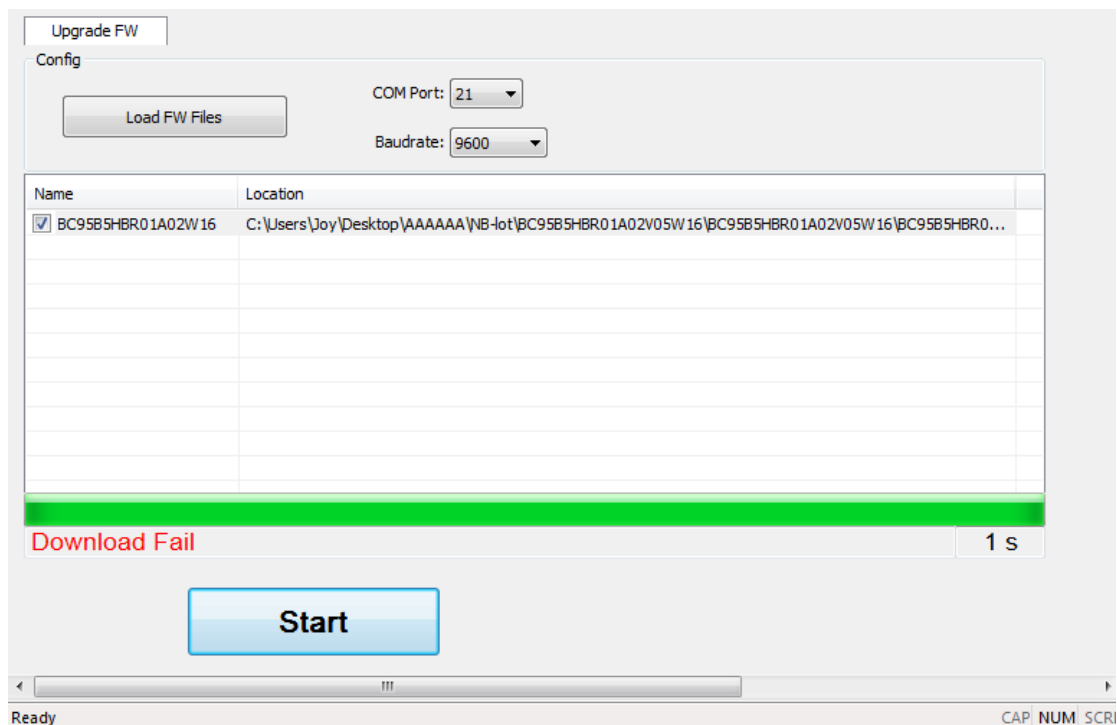


Figure 26: Connected to a Wrong Serial Port (BCxx Modules)

2.4.2. Connected to an Occupied Serial Port

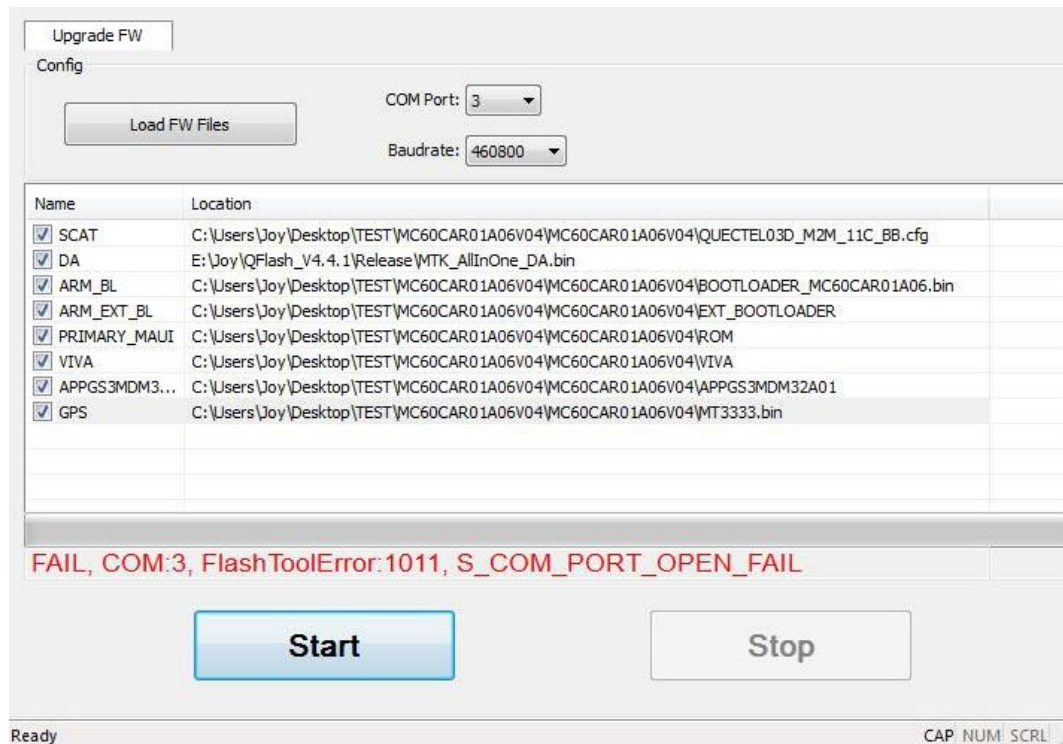


Figure 27: Connected to an Occupied Serial Port (Mxx Modules)

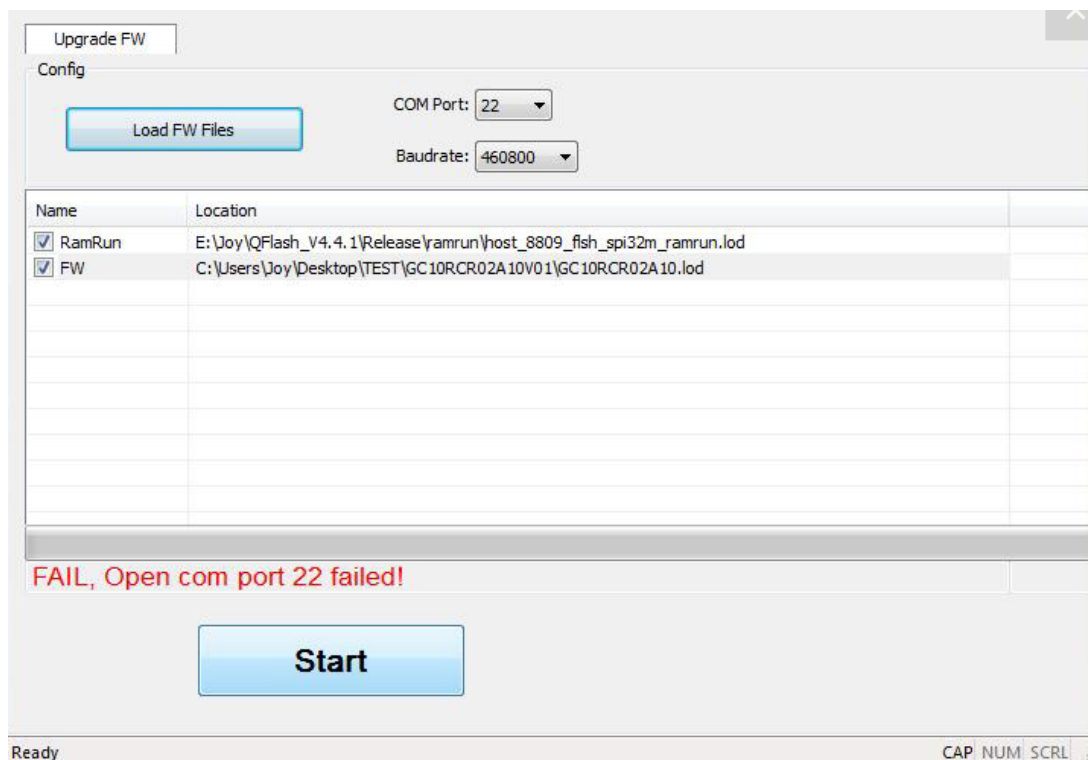


Figure 28: Connected to an Occupied Serial Port (GCxx Modules)

2.4.3. Selected an Unsupported Baud Rate

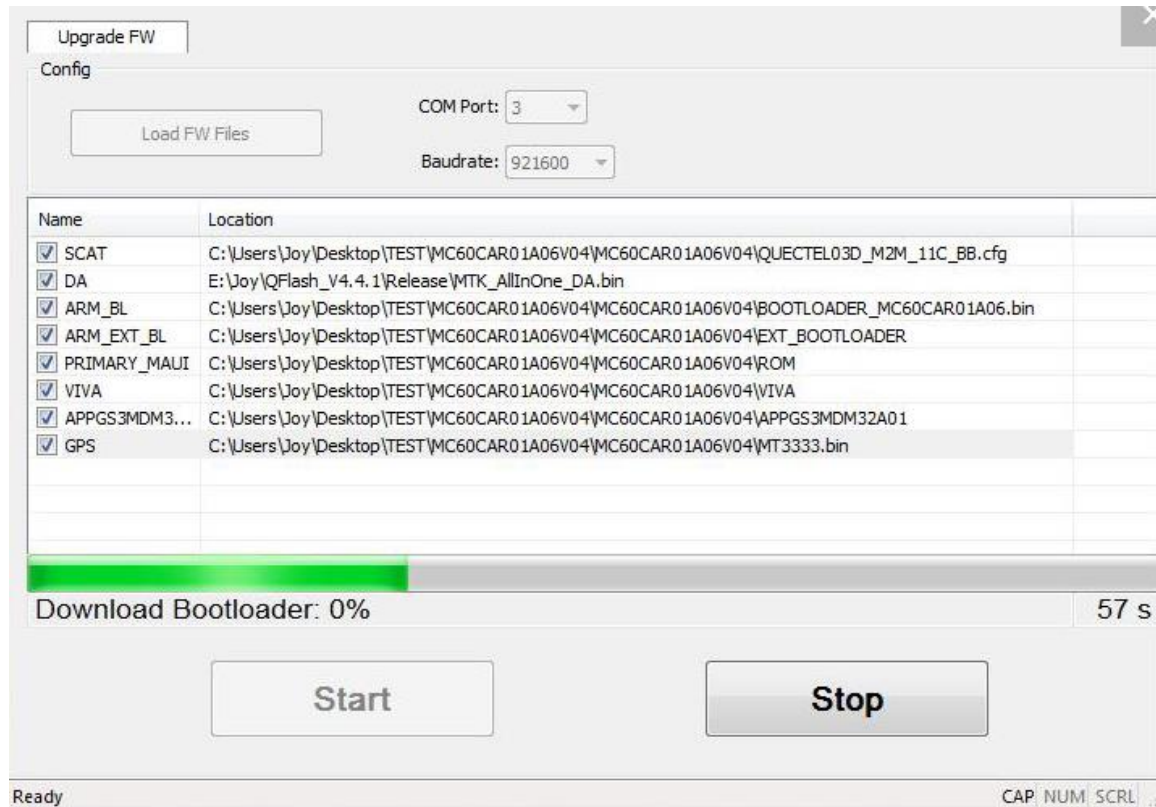


Figure 31: An Unsupported Baud Rate is Selected (Mxx Modules)

NOTE

For Mxx modules, if an unsupported baud rate is selected, the tool will stop to run and no error message will be prompted. In such case, please click the “**Stop**” button to re-select a supported baud rate to upgrade.

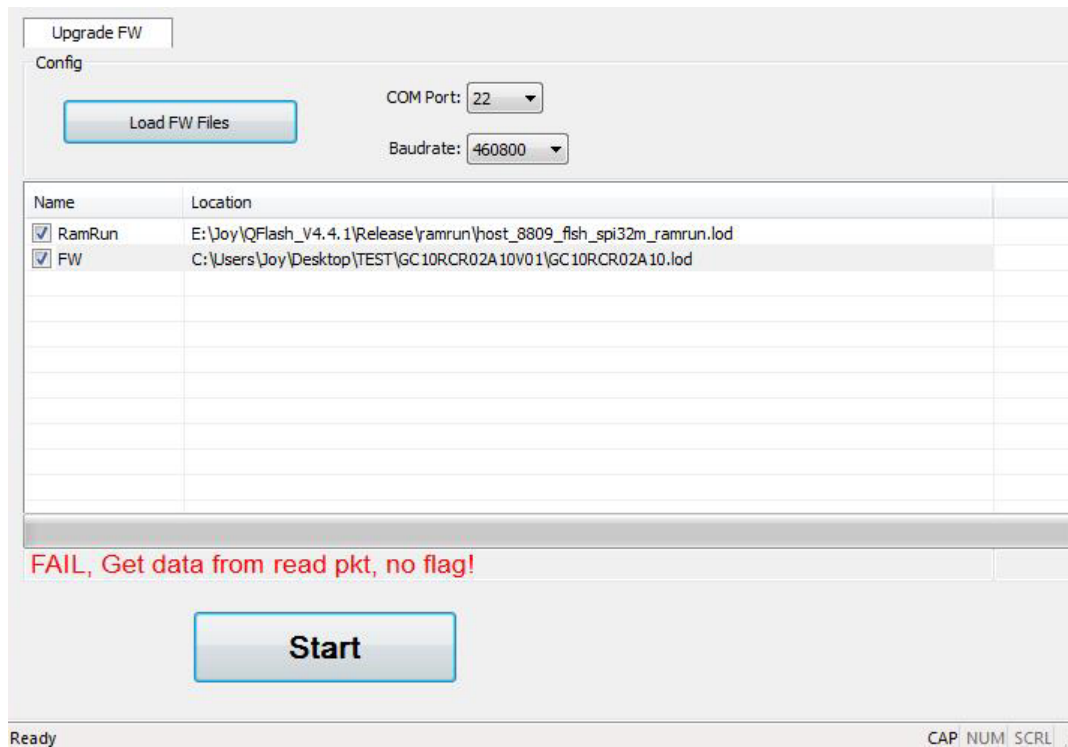


Figure 32: An Unsupported Baud Rate is Selected (GCxx Modules)

2.4.4. Selected an Invalid Load File

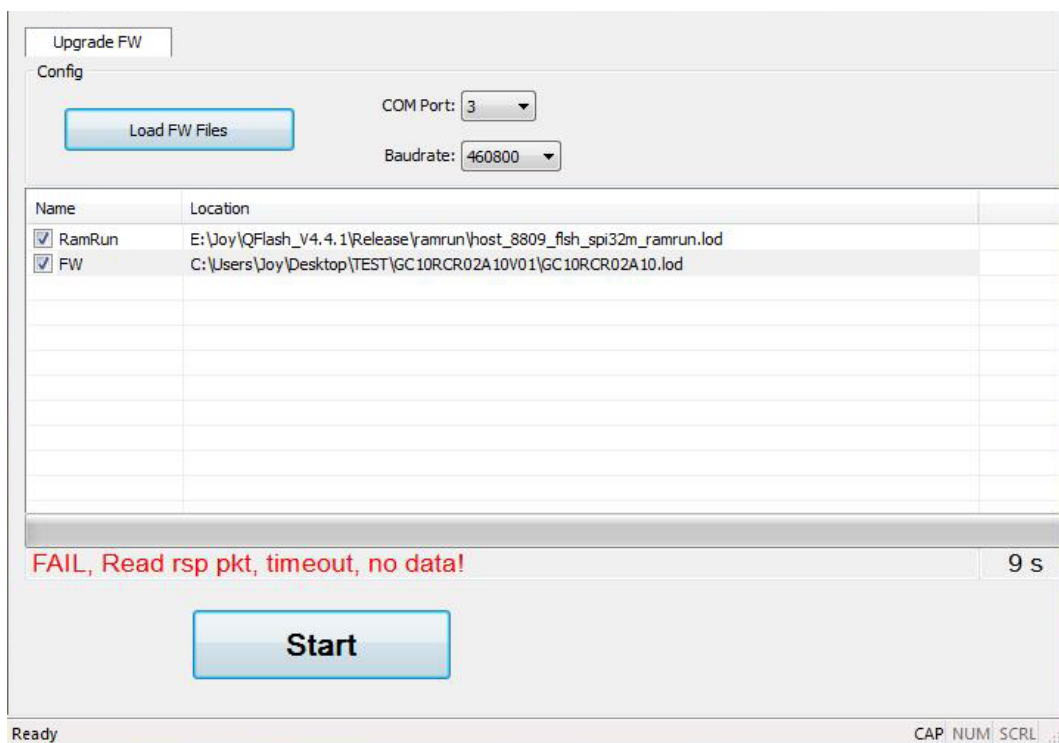


Figure 33: An Invalid Scatter File is Selected (Mxx Modules)

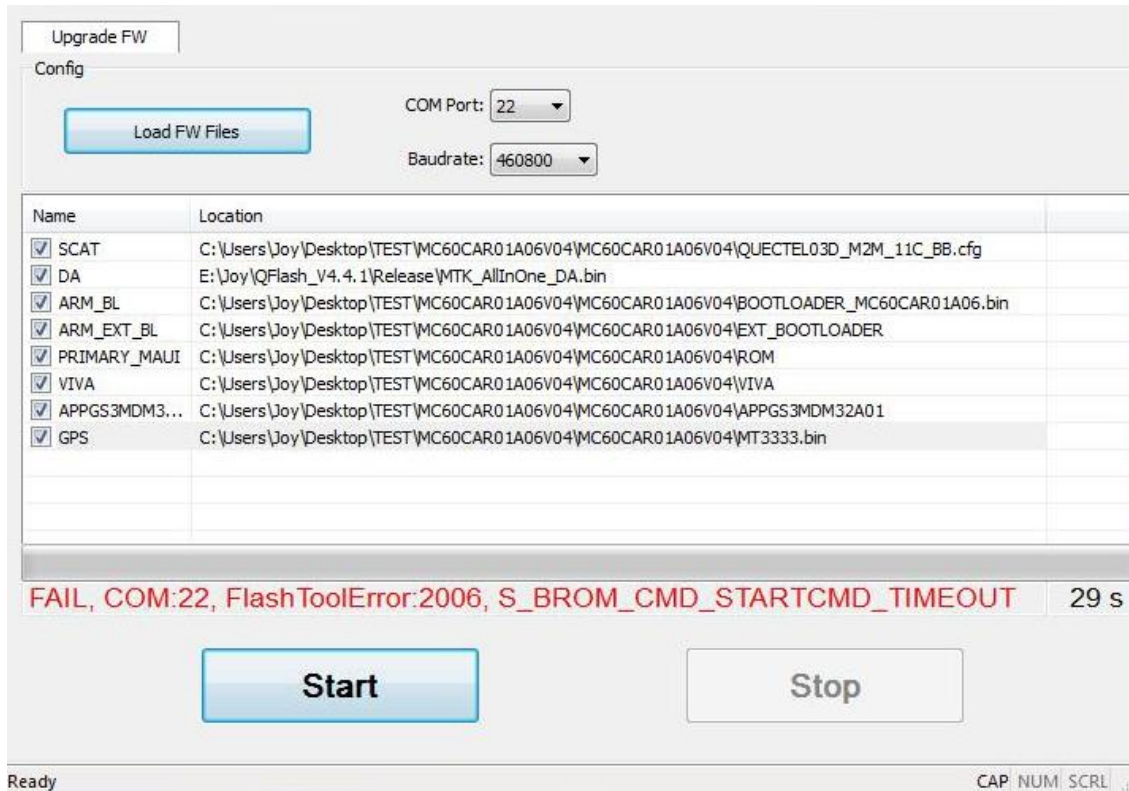


Figure 34: An Invalid Load File is Selected (GCxx Modules)

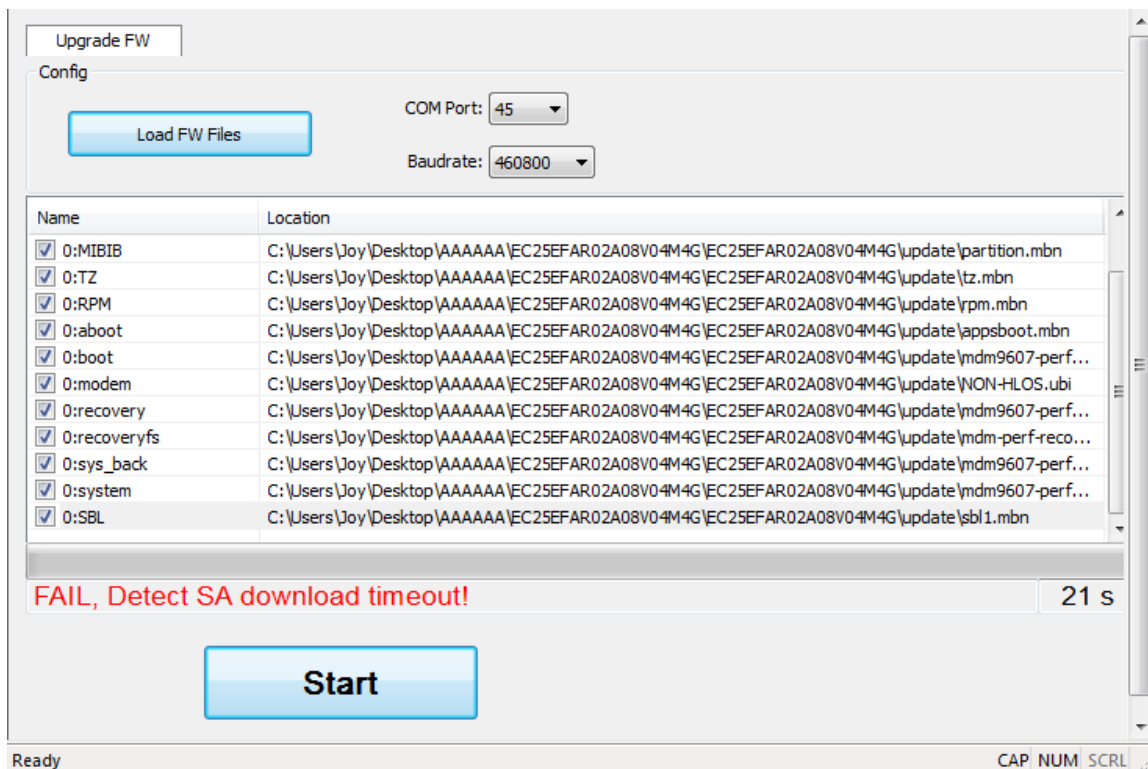


Figure 35: An Invalid Load File is Selected (UCxx Modules)

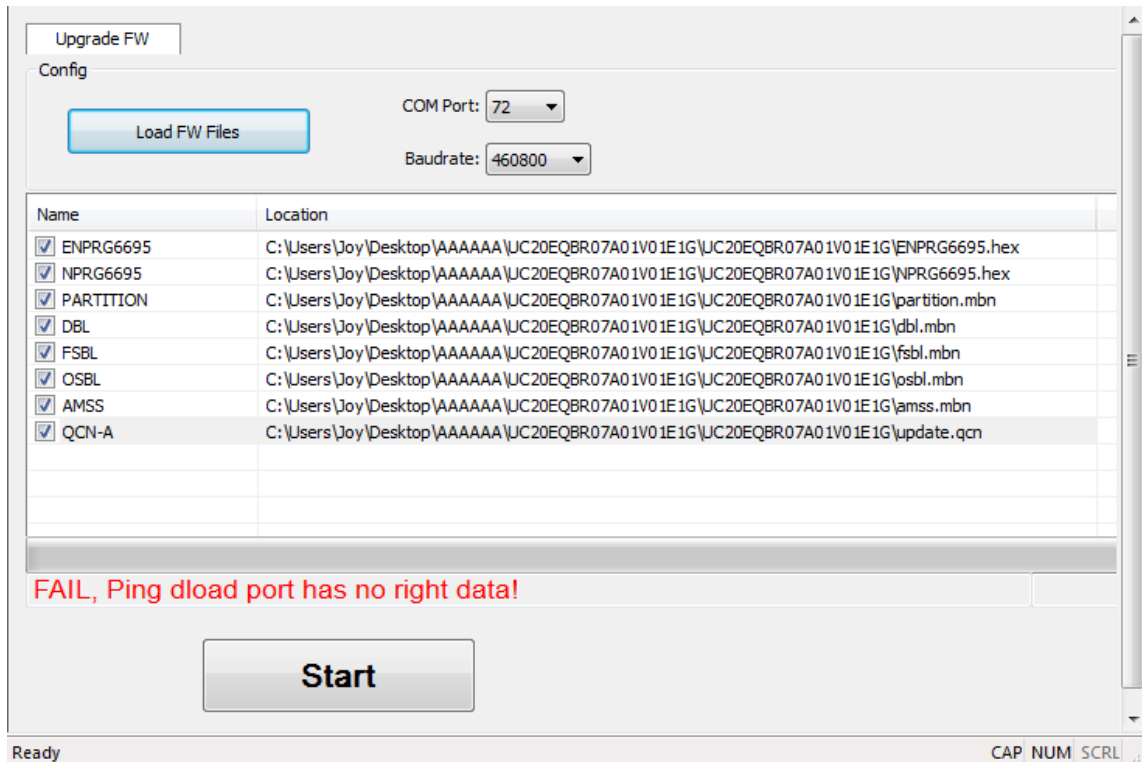


Figure 36: An Invalid Load File is Selected (ECxx/EG9x Modules)

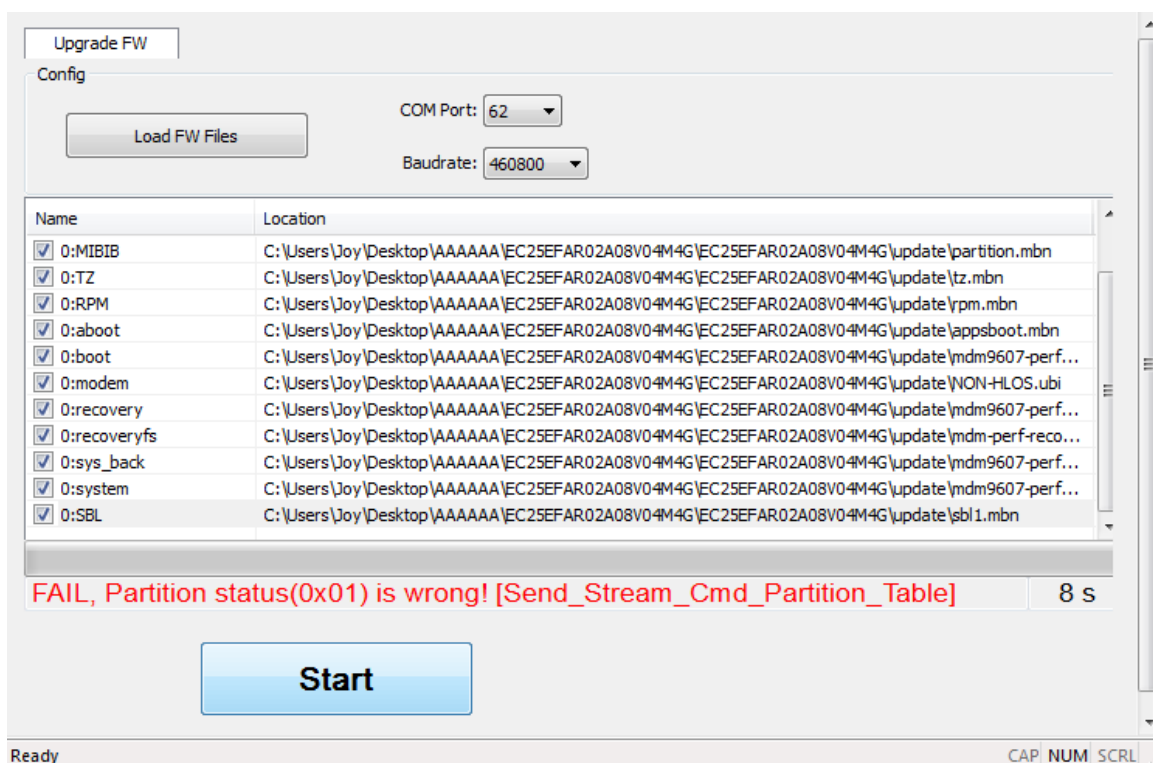


Figure 37: An Invalid Load File is Selected (Ex06/AG35/BG96/EM12 Modules)

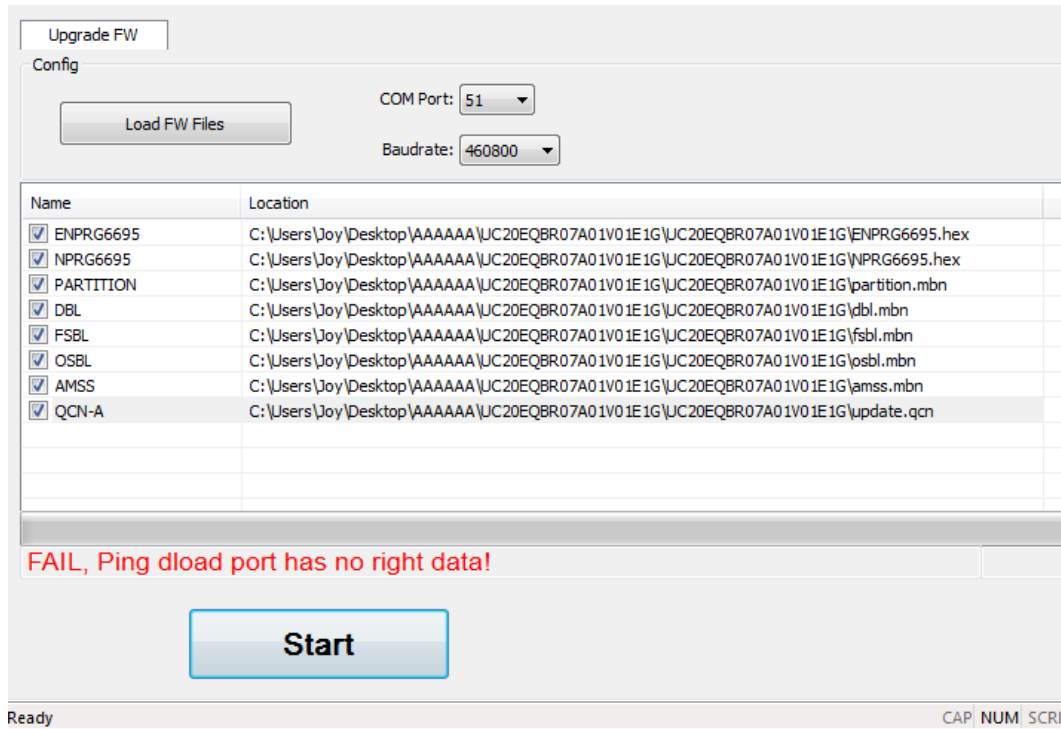


Figure 38: An Invalid Load File is Selected (EM05 Module)

2.4.5. Power Supply is Abnormal

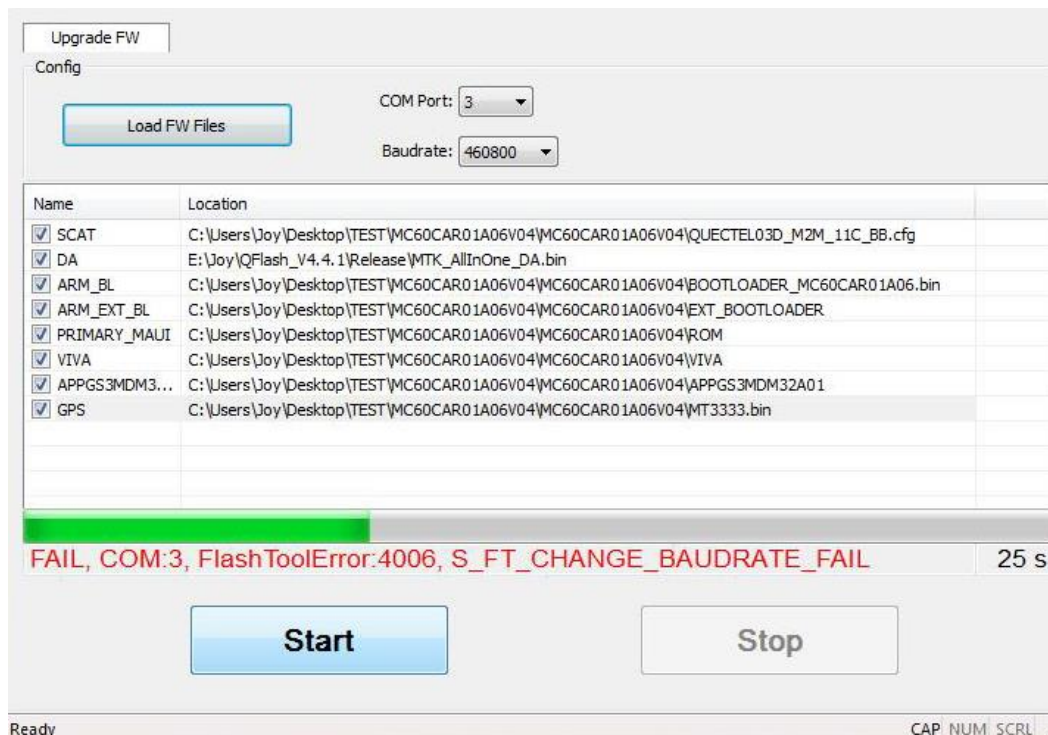


Figure 39: Power Supply is Abnormal (Mxx Modules)

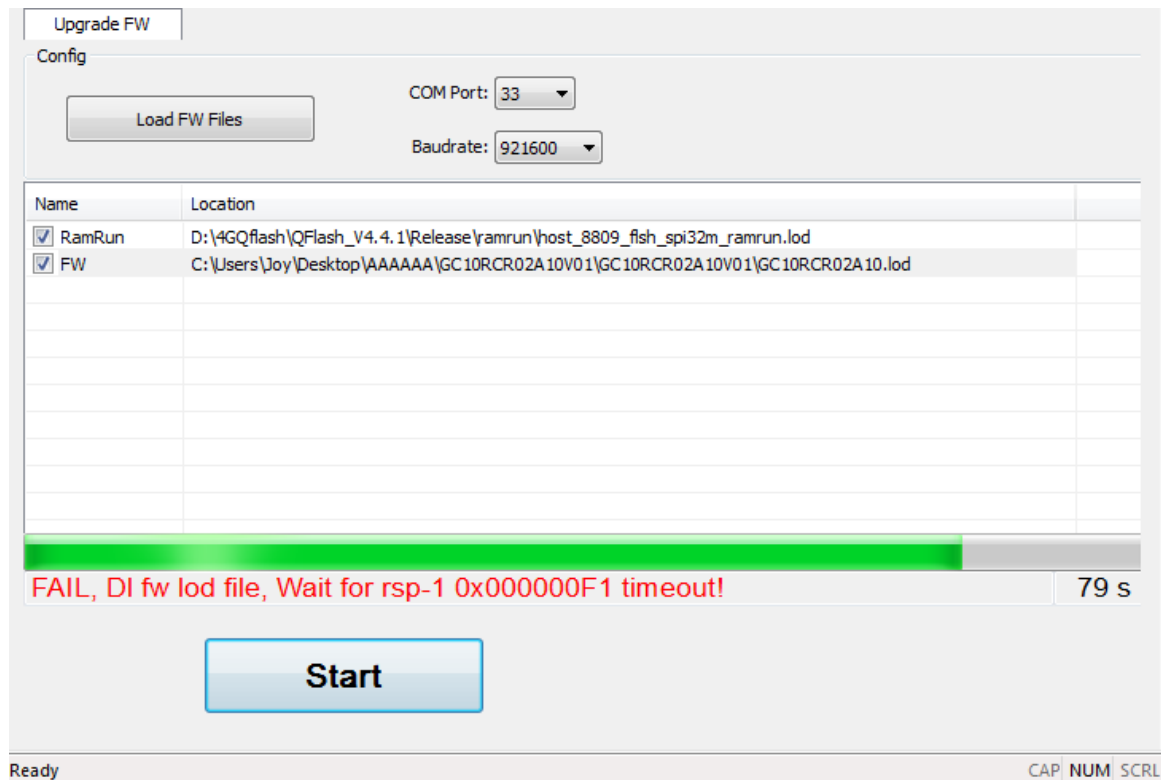


Figure 40: Power Supply is Abnormal (GCxx Modules)

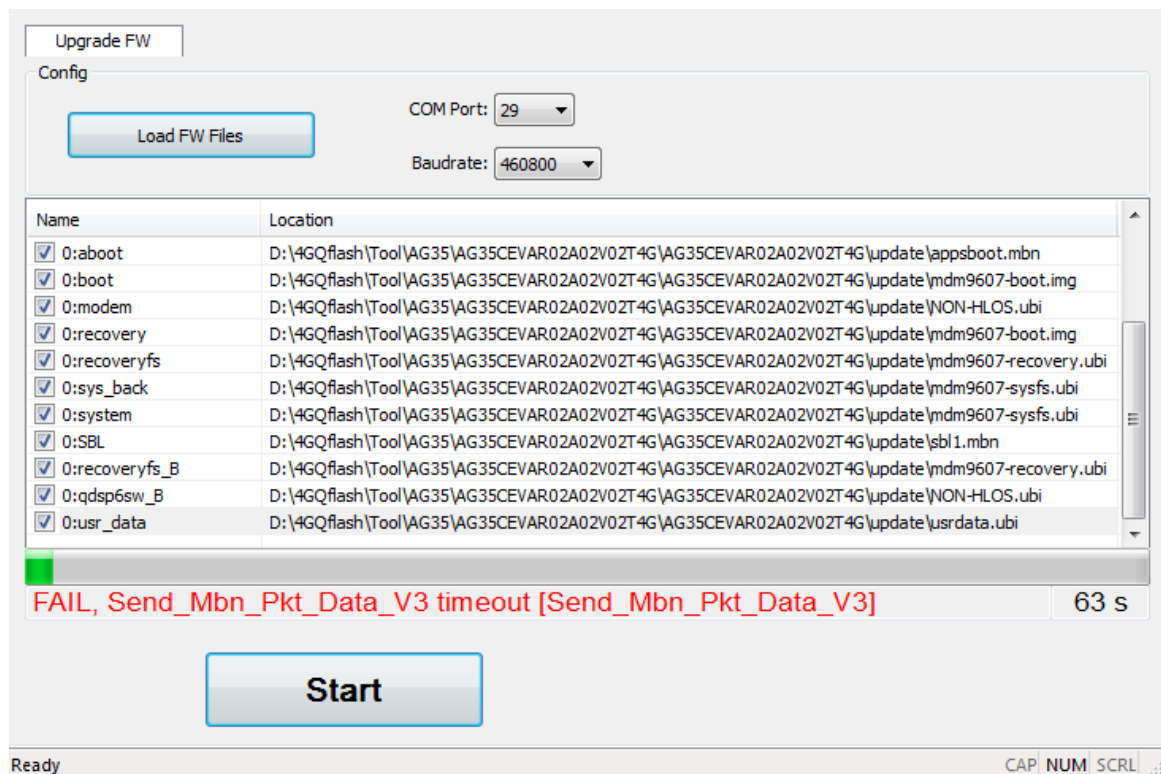


Figure 41: Power Supply is Abnormal (UCxx/ECxx/EG9x/Ex06/EM05/AG35/BG96/EM12 Modules)

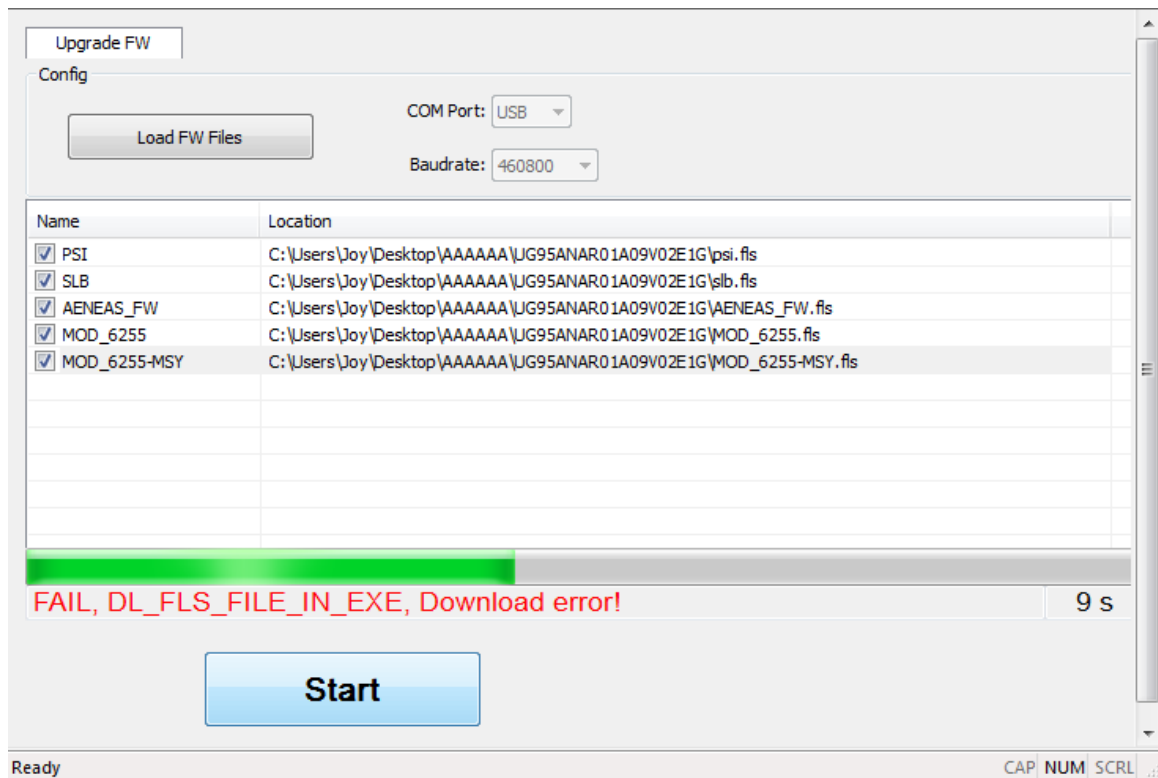


Figure 42: Power Supply is Abnormal (UGxx Modules)

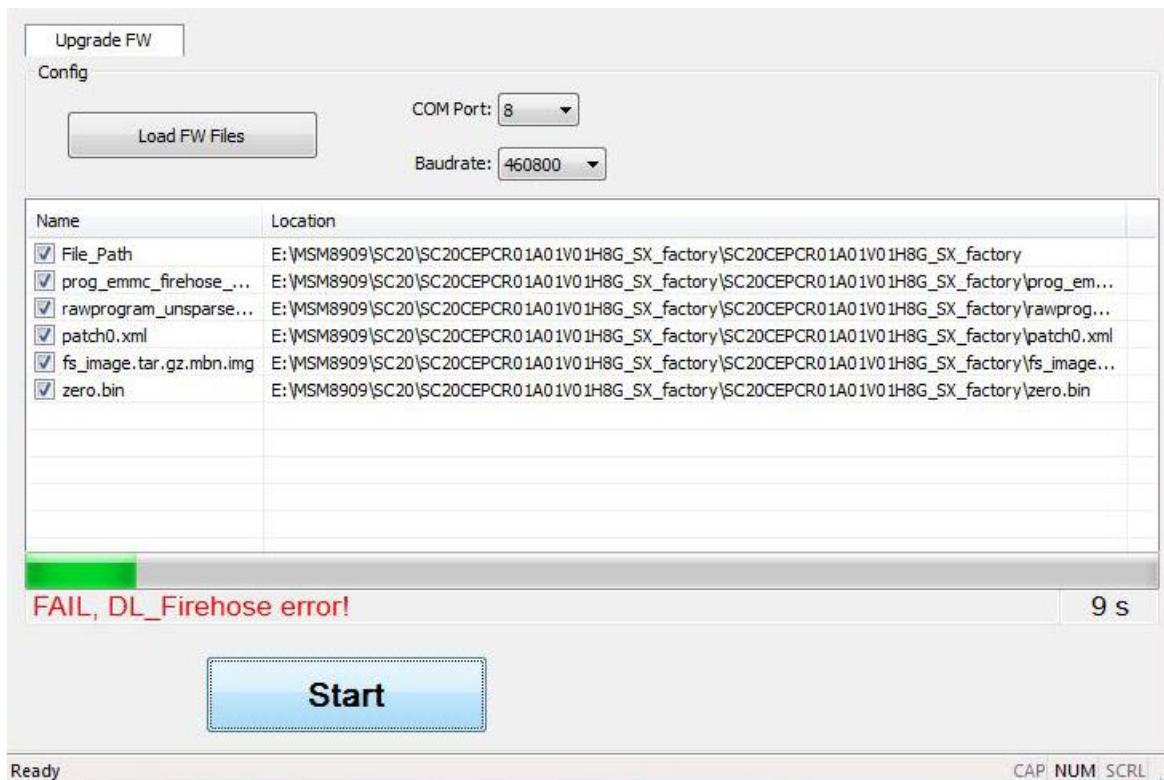


Figure 43: Power Supply is Abnormal (SCxx/SGxx Modules)

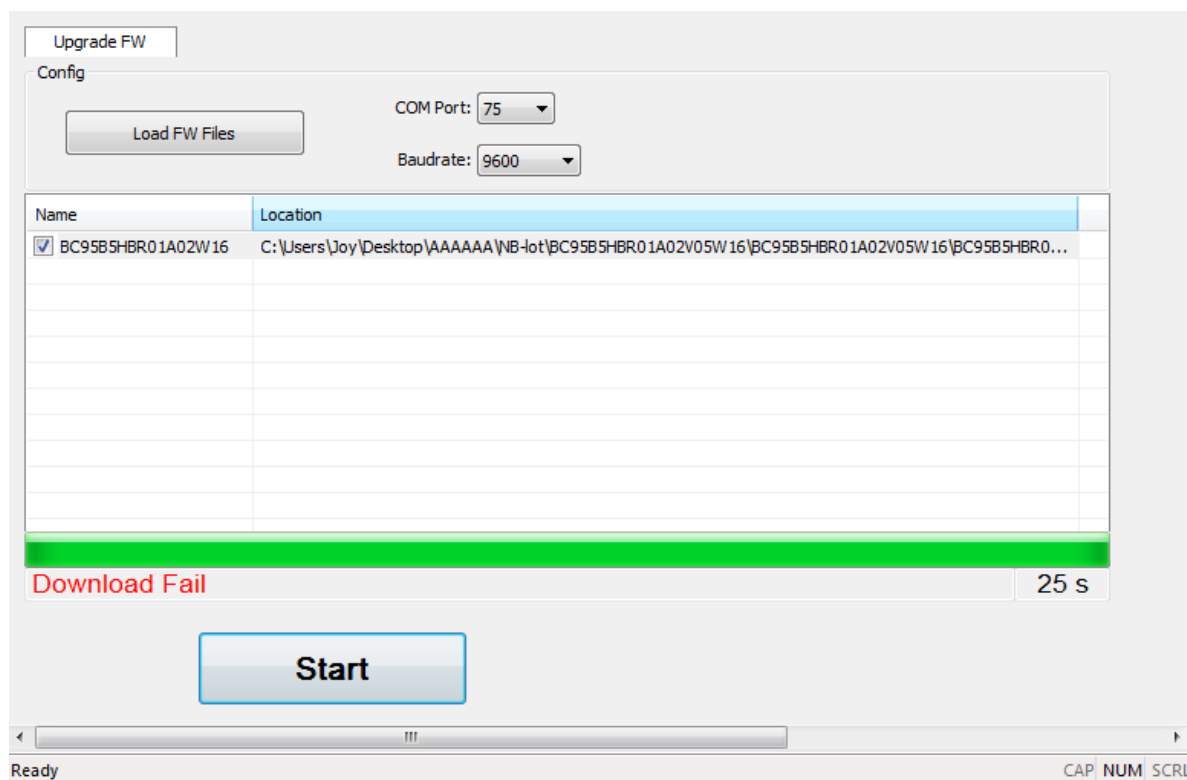


Figure 44: Power Supply is Abnormal (BCxx Modules)

2.4.6. USB to RS-232 Converter Cable is Abnormal

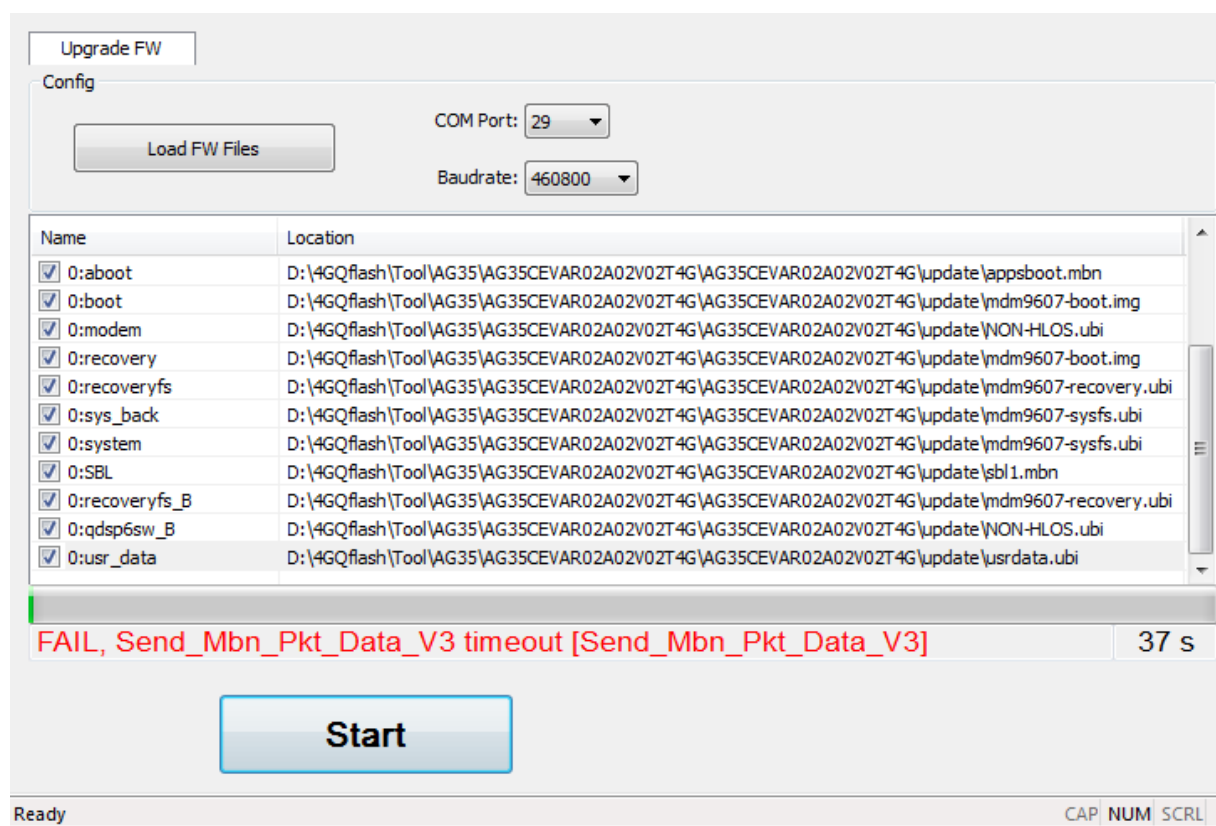


Figure 45: USB to RS-232 Converter Cable is Abnormal