

# QFlash User Guide

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# About the Document

## History

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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
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2.3	2018-04-25	Kitty WANG	Updated QFlash version to 4.7

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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.

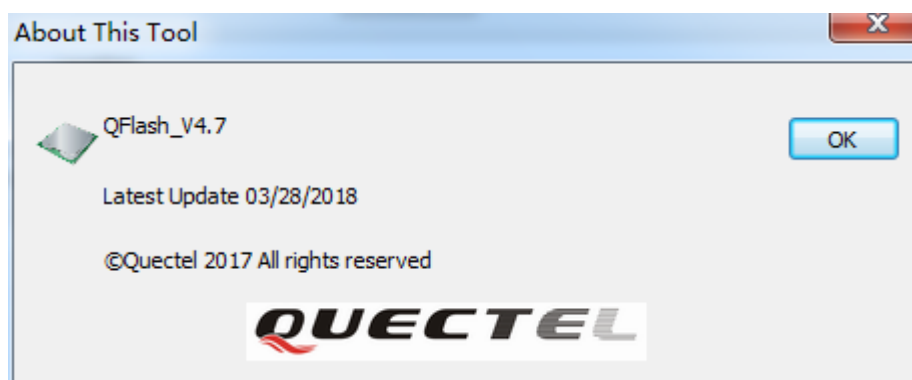
**Table 1: Applicable Modules**

<b>NB-IoT Module Series</b>	BCxx: BC95 module
<b>LTE Module Series</b>	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
<b>UMTS/HSPA(+) Module Series</b>	UCxx: includes UC15/UC20 modules
	UGxx: includes UG95/UG96 modules
<b>GSM/GPRS Module Series</b>	Mxx: includes M10/M66/M72/M80/M85/M95/MC60 modules
	GCxx: GC10 module

### 1.3. About QFlash Tool

The QFlash tool developed by Quectel is shown as below.



**Figure 1: About the Tool**



## 2 Firmware Upgrade Procedures

The firmware can be upgraded through 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. Configure Serial Port and Baud Rate

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

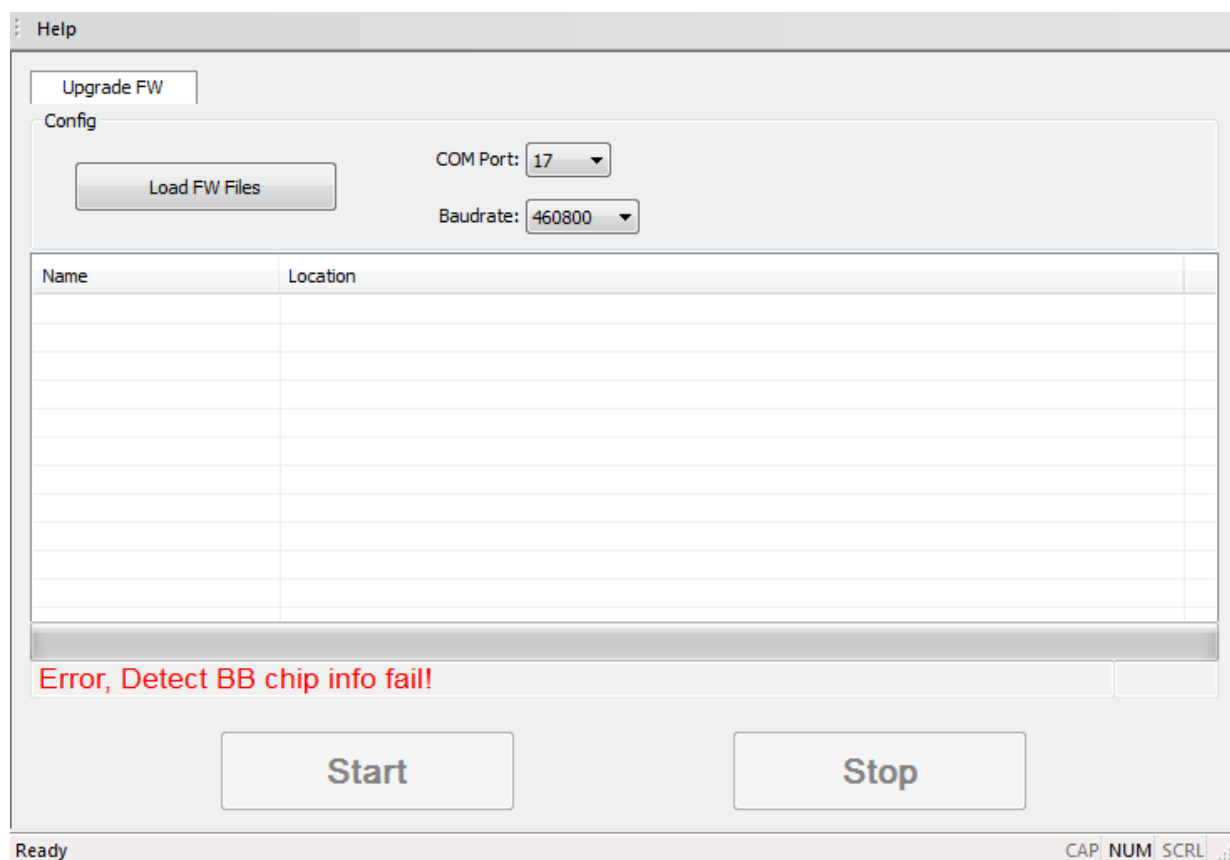
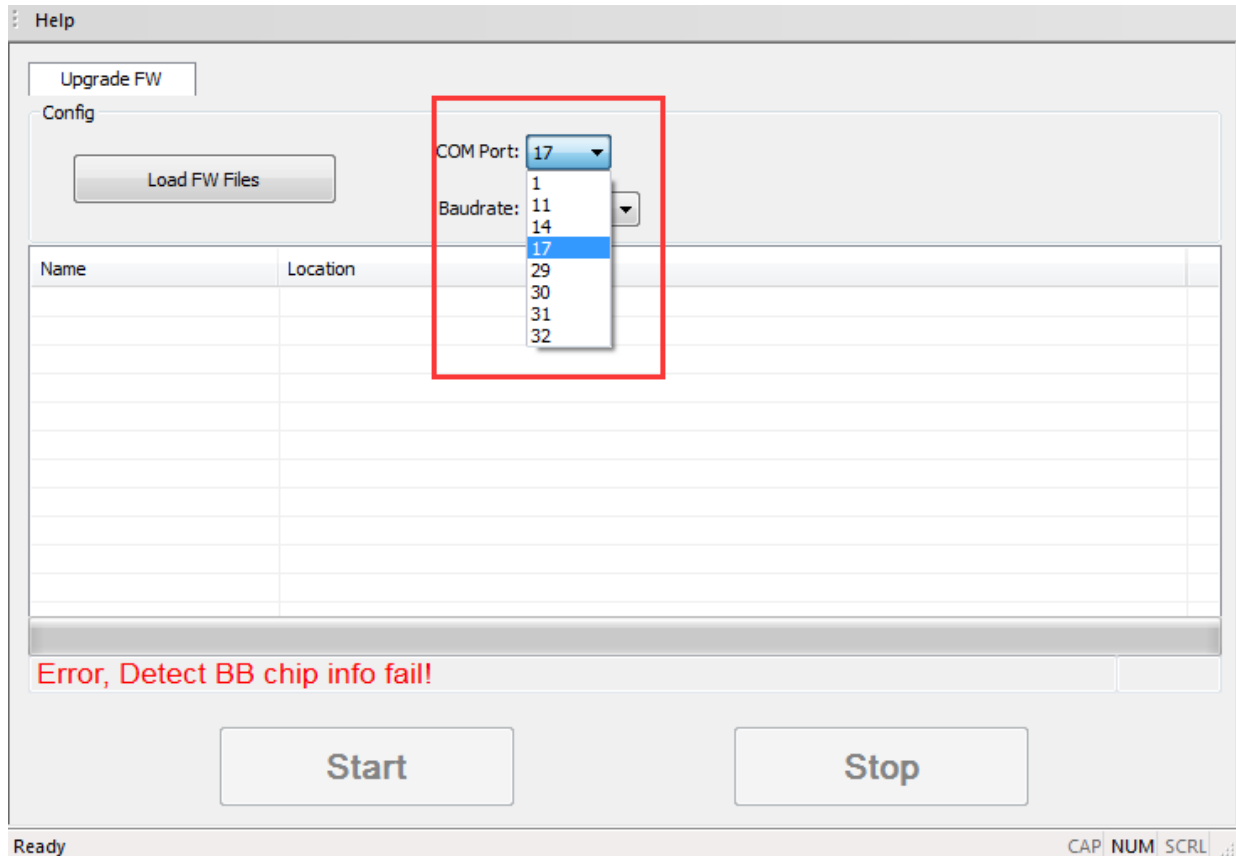


Figure 2: Main Interface

### 2.1.1. Set Serial Port

Click “**COM Port**” dropdown list to select the COM port on 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 BCxx 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.

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.

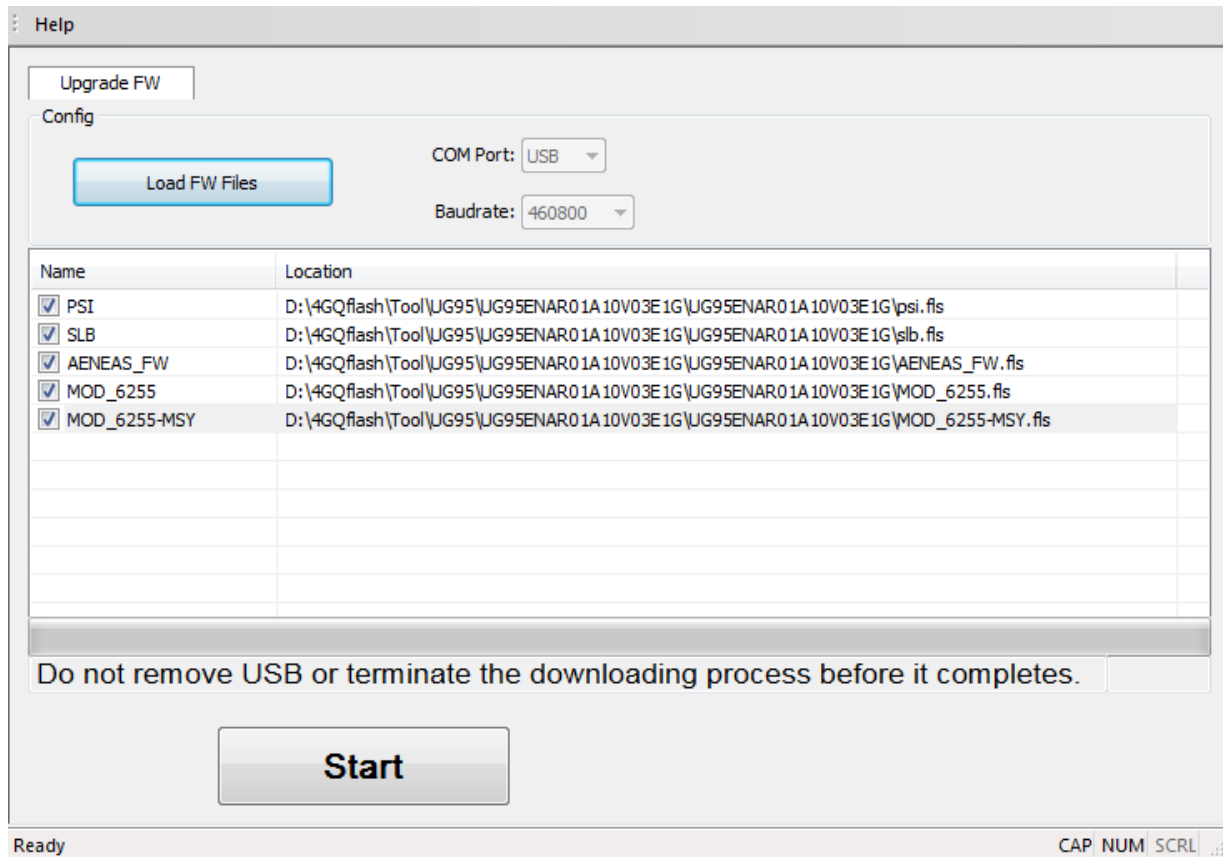
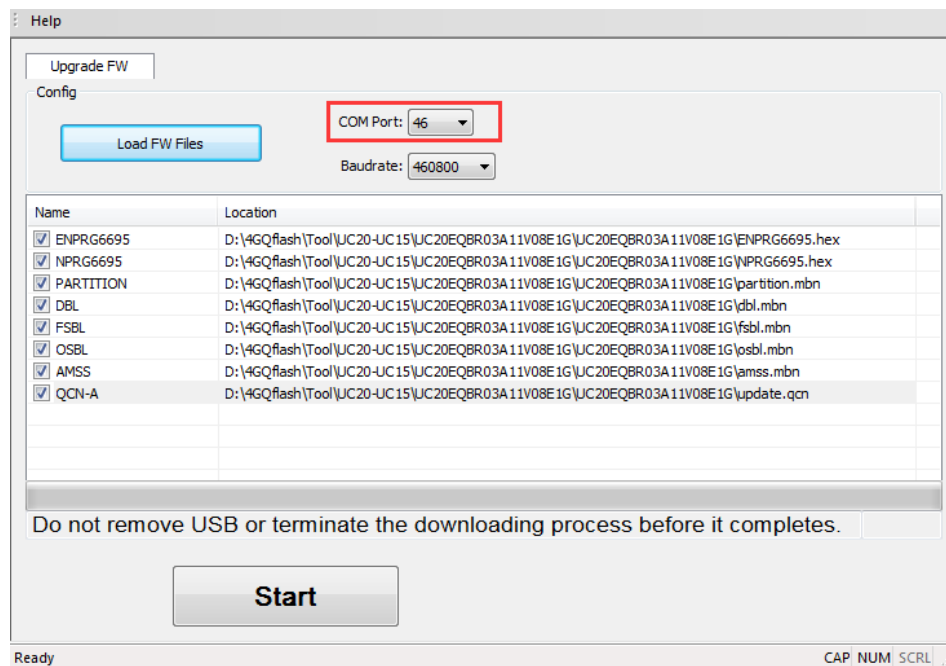


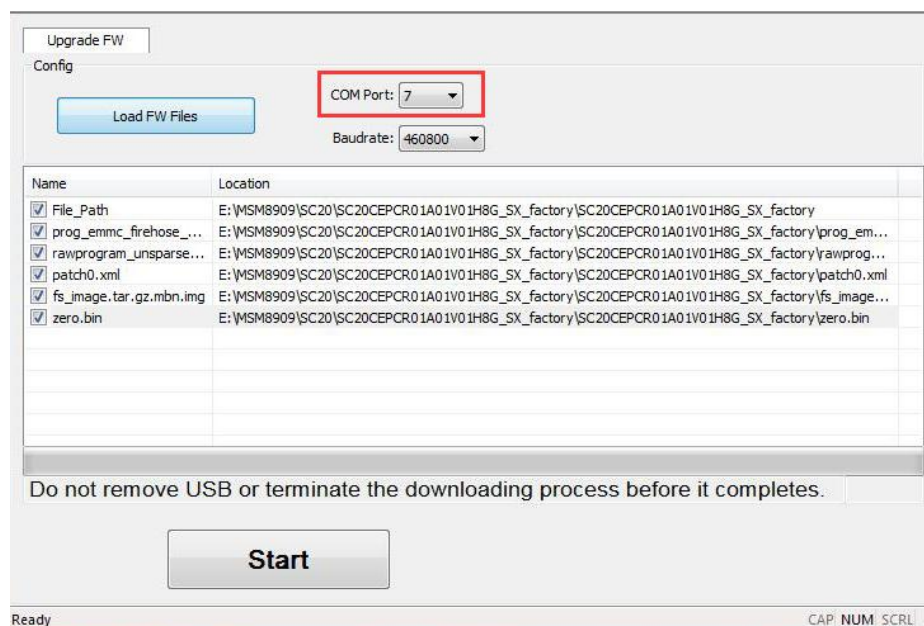
Figure 4: No Need to Select COM Port for UGxx Modules

For UCxx/ECxx/EGxx/Ex06/EM05/AG35/BG96 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 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**

### 2.1.2. Set Baud Rate

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

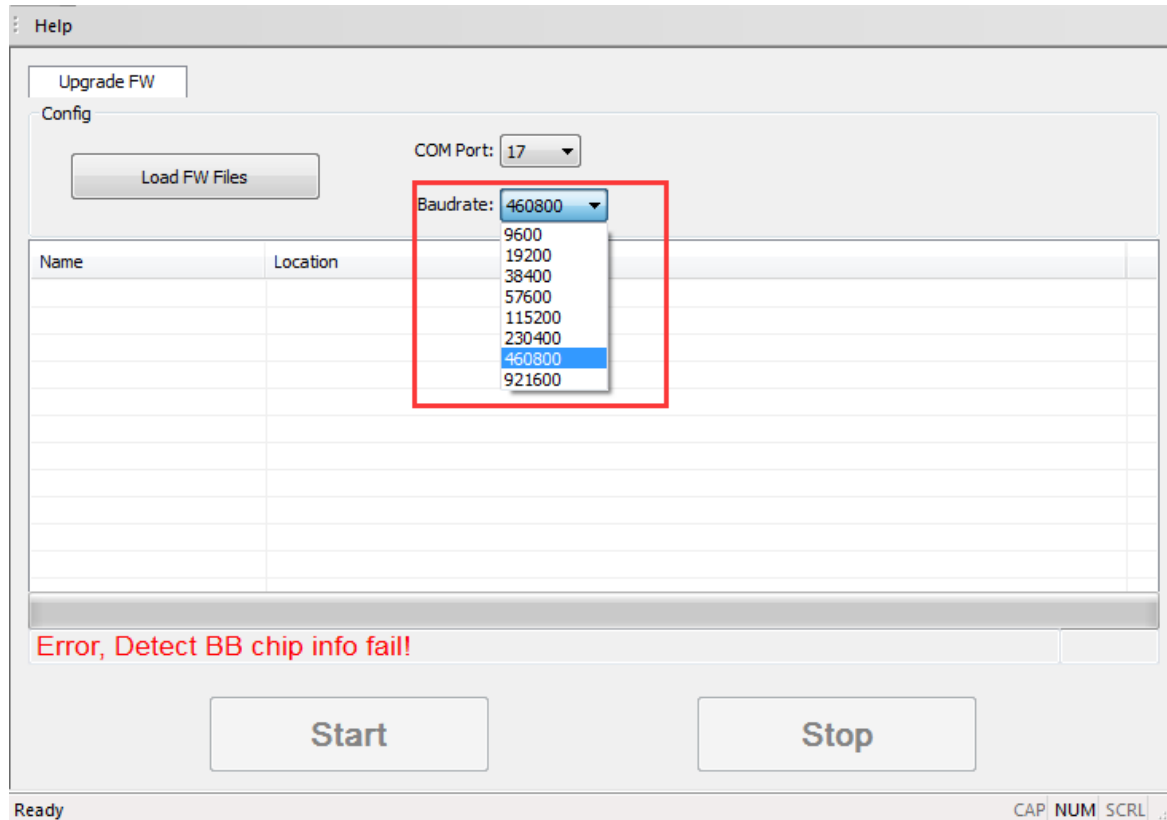


Figure 7: Select the Baud Rate

#### 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 do select 921600 baud rate when upgrading GCxx modules. Other baud rates may lead to upgrading operation failure.
3. Please do select 9600 baud rate when upgrading BCxx modules. Other baud rates may lead to upgrading operation failure.
4. Baud rate setting is unnecessary for USB virtual port.

## 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.

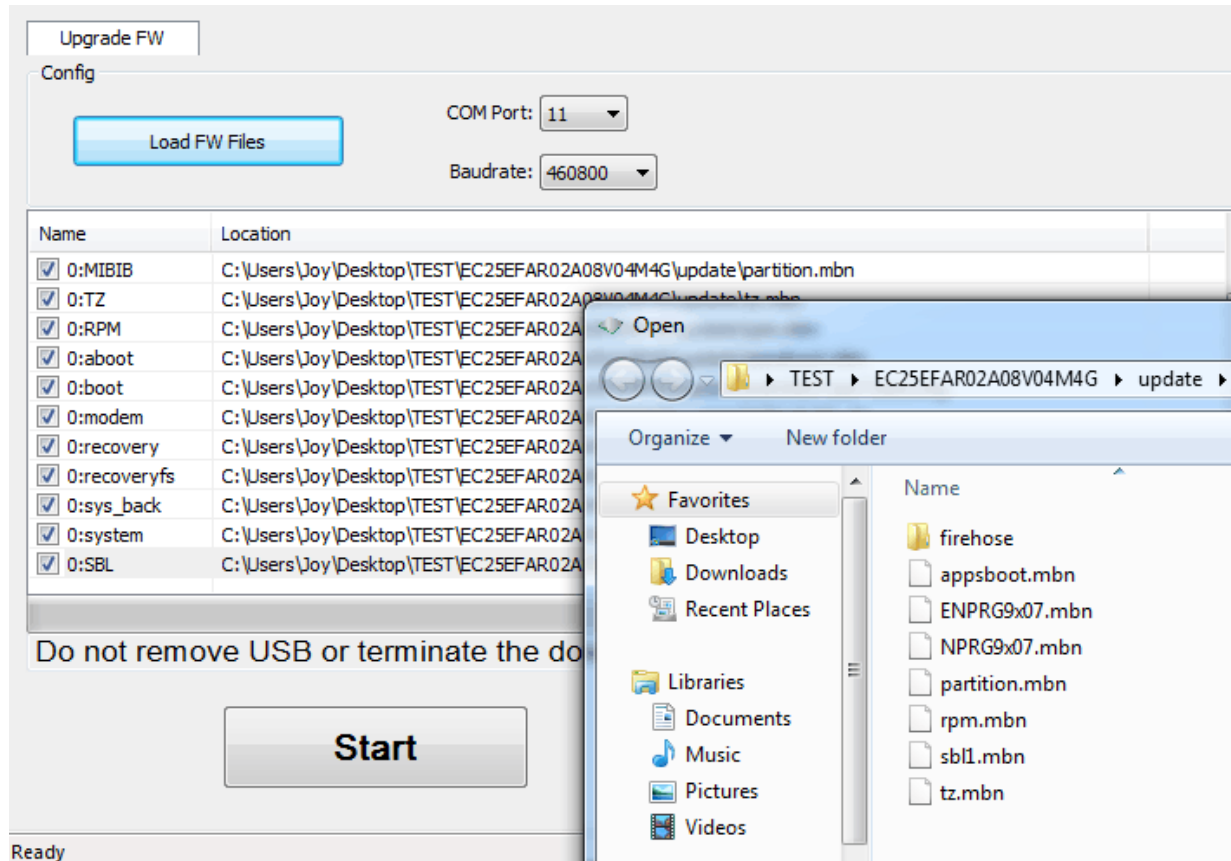


Figure 8: Select the File to be Downloaded

### 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.

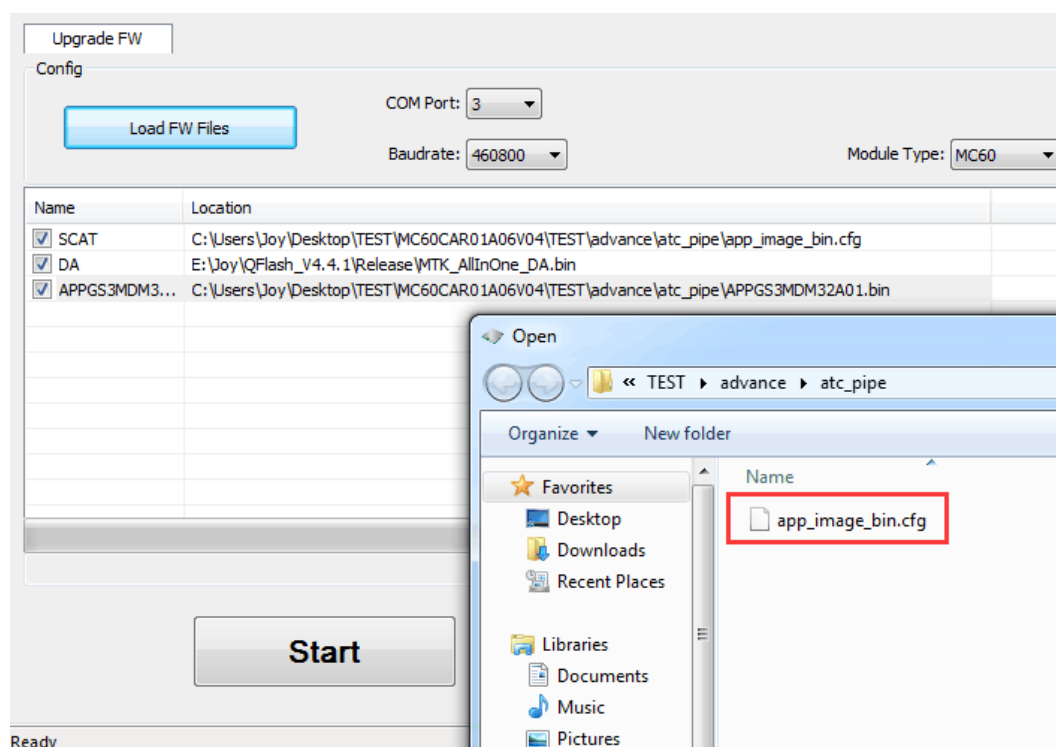


Figure 9: Select the .cfg File

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

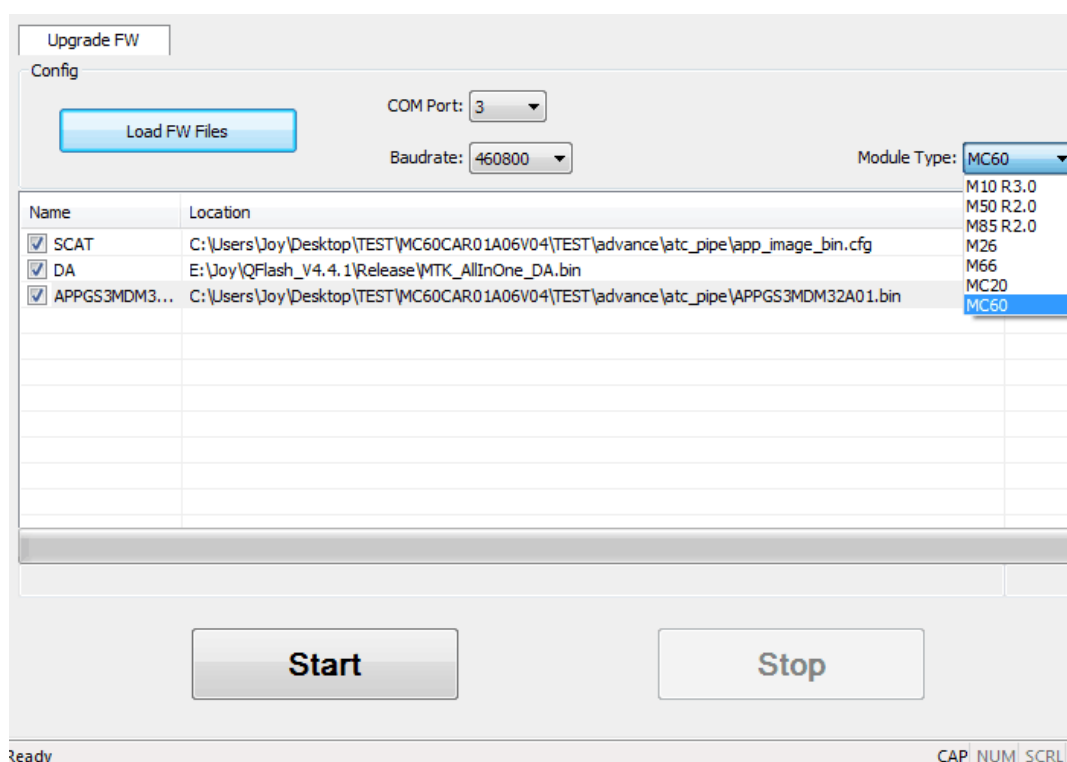


Figure 10: Select the Module Type

## 2.3. Upgrade the 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 modules, as shown in the following figure.

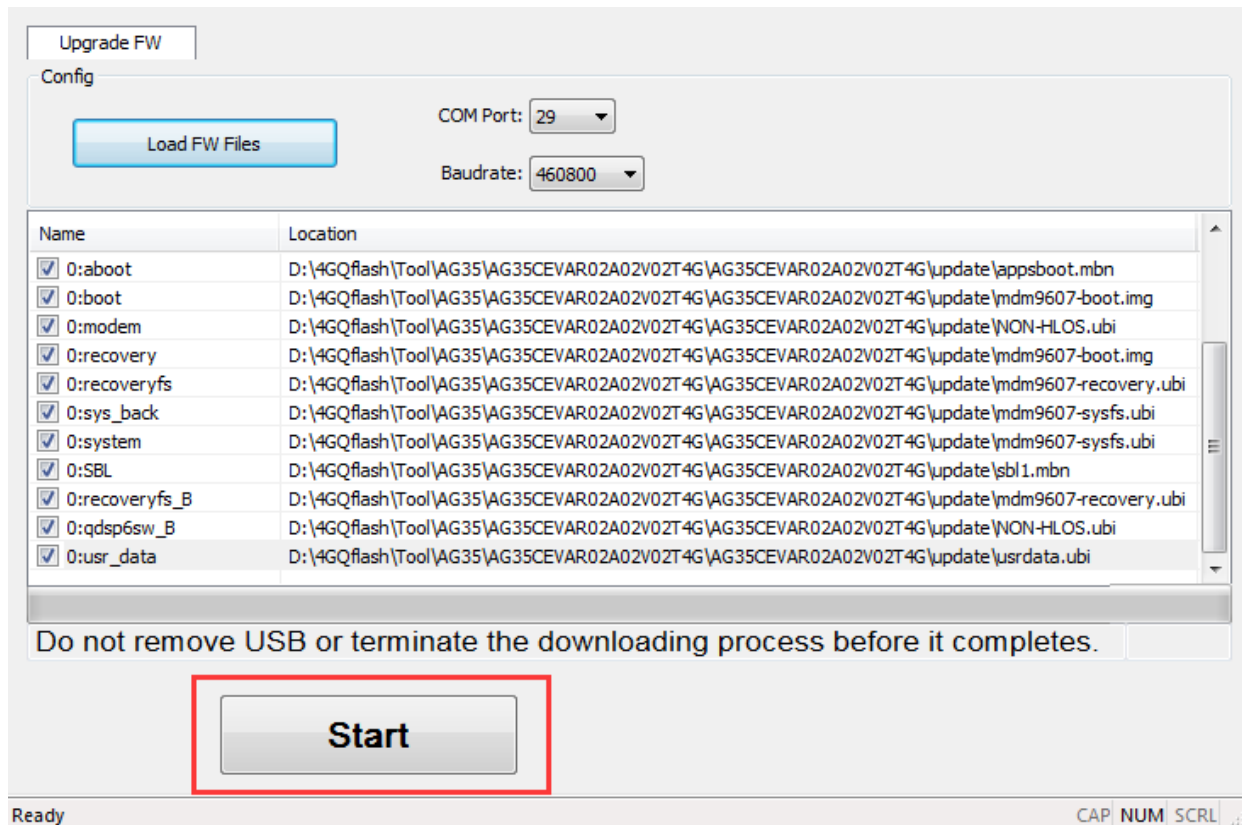


Figure 11: Click the Start Button

### 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/BCxx 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.

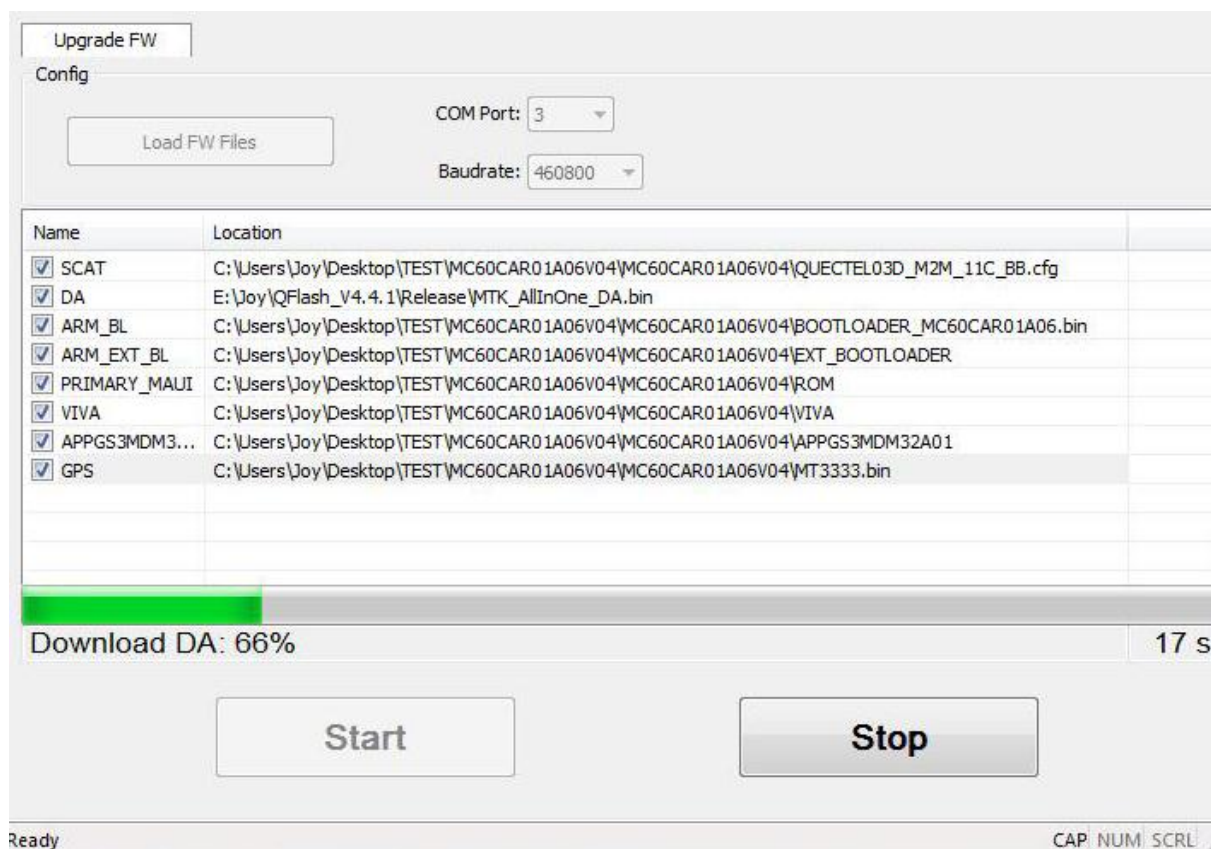


Figure 12: Start to Upgrade after Restarting the Mxx Modules

**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.

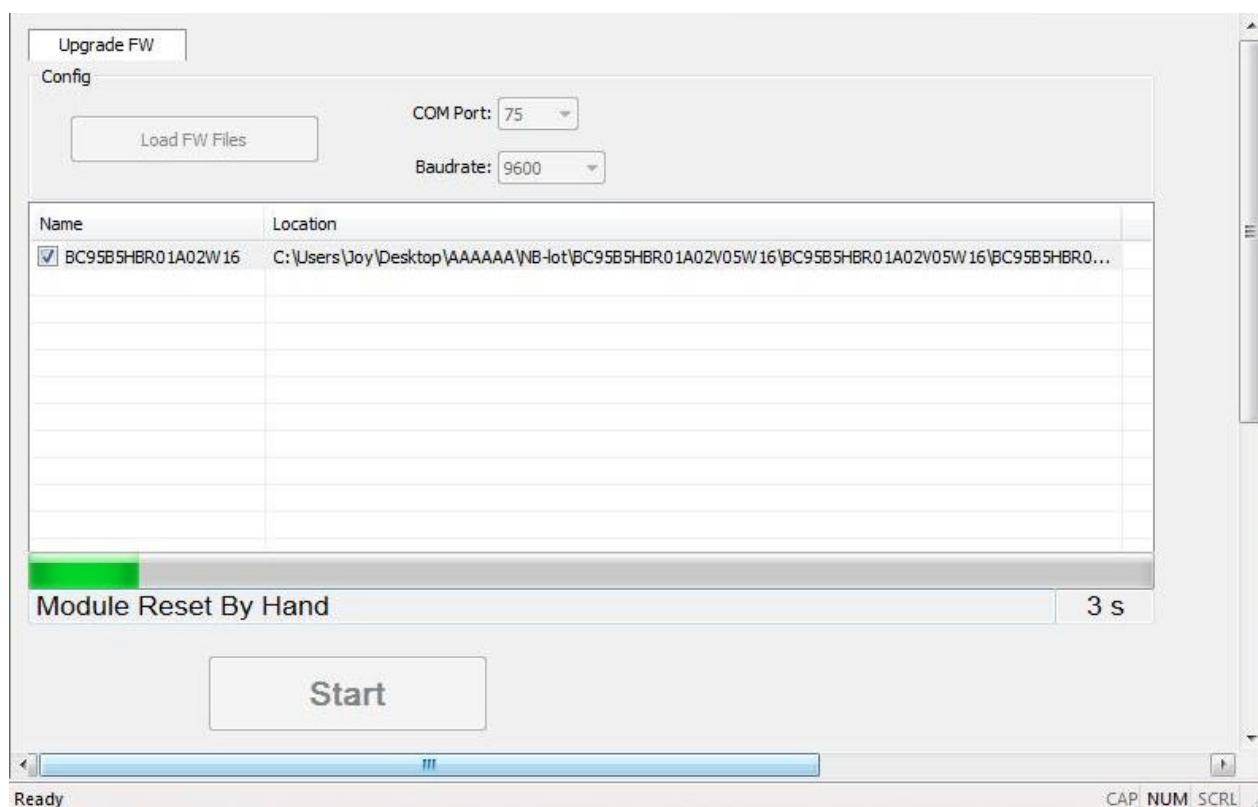


Figure 13: Start to Upgrade after Restarting the BCxx Modules

**NOTE**

On BCxx modules, 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.

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

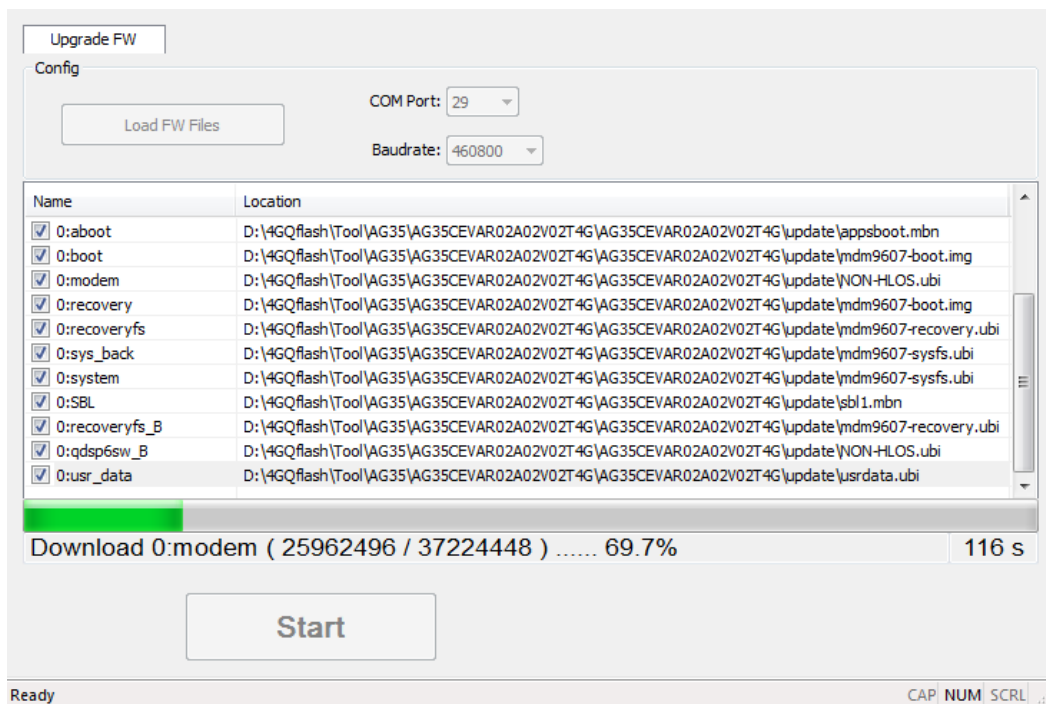
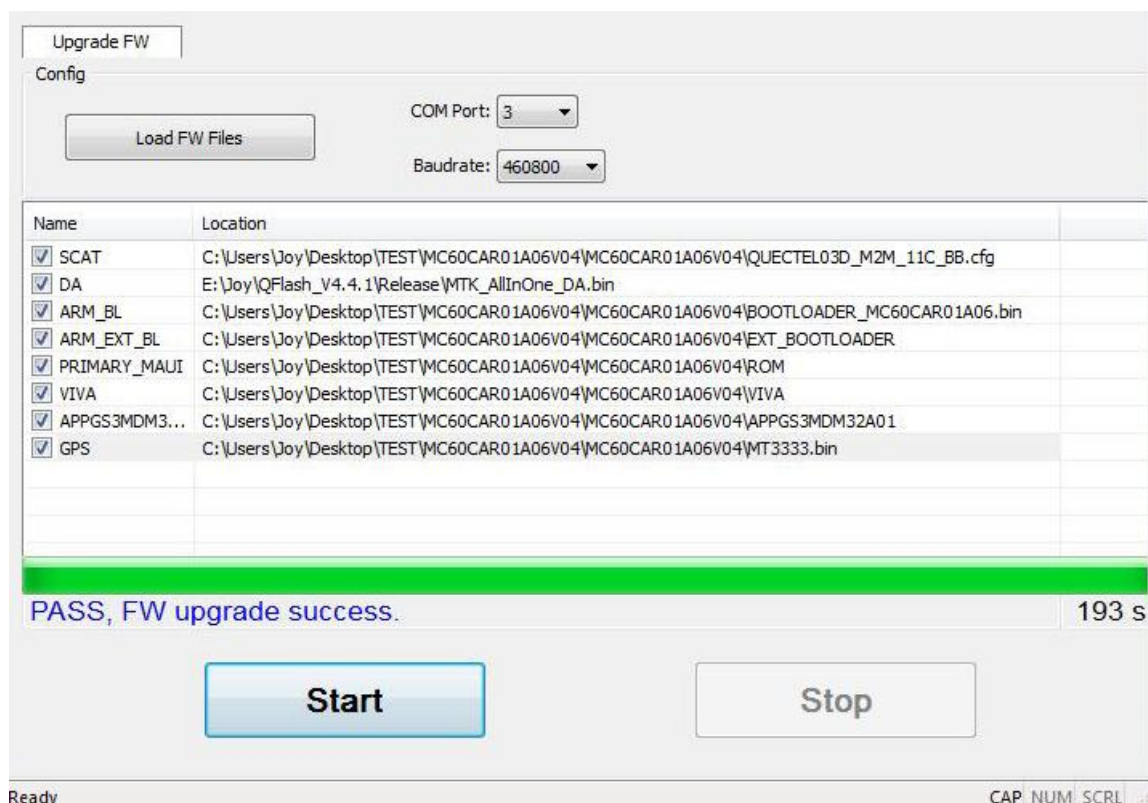


Figure 14: Start to Upgrade Firmware

**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 Upgrade**

## 2.4. Abnormalities

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

### 2.4.1. Selected a Wrong Serial Port

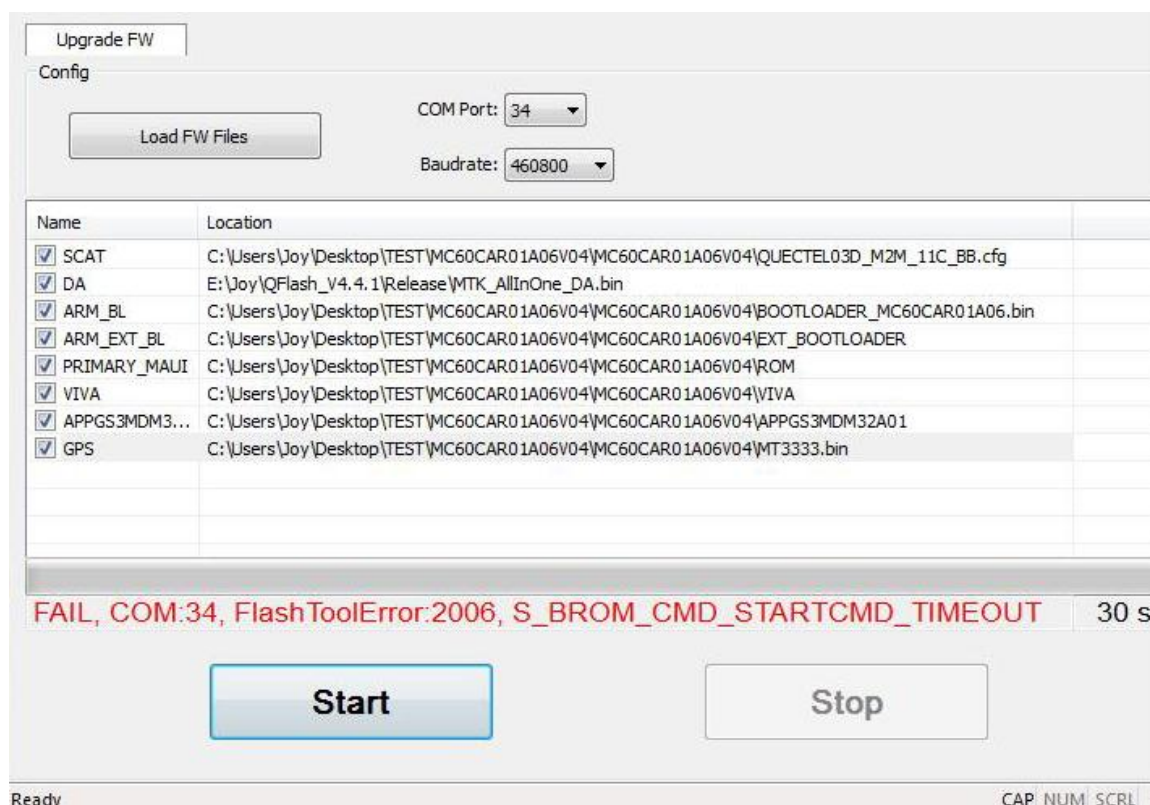


Figure 16: Connected to a Wrong Serial Port (Mxx Modules)

#### 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.

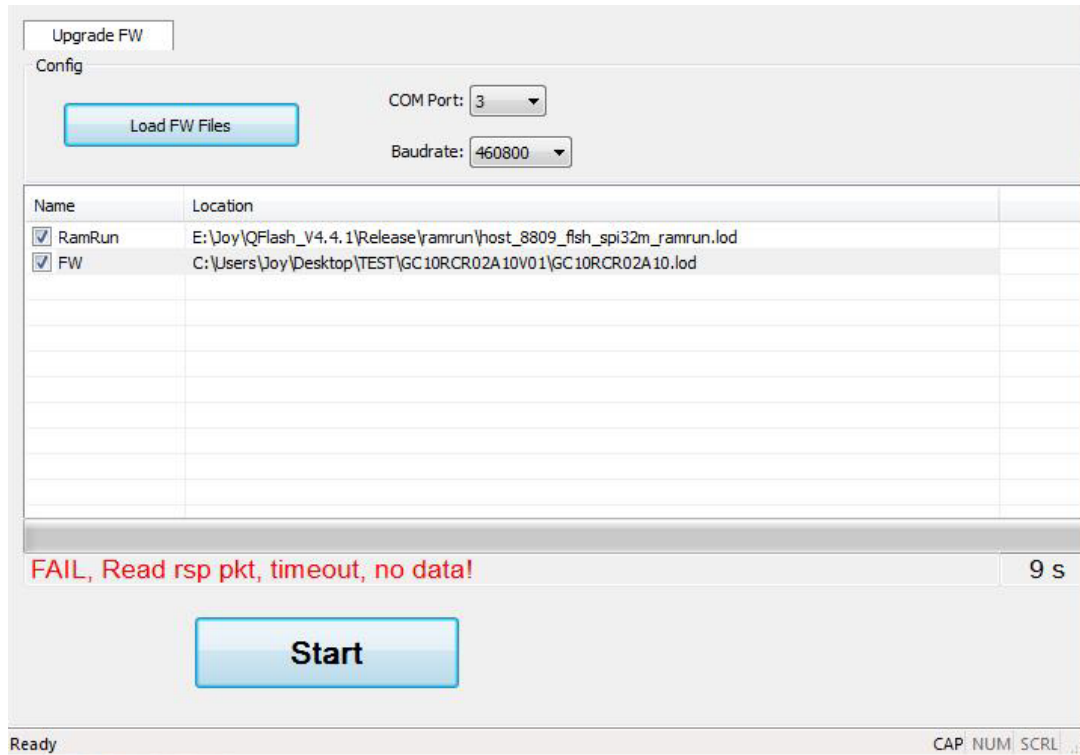


Figure 17: Connected to a Wrong Serial Port (GCxx Modules)

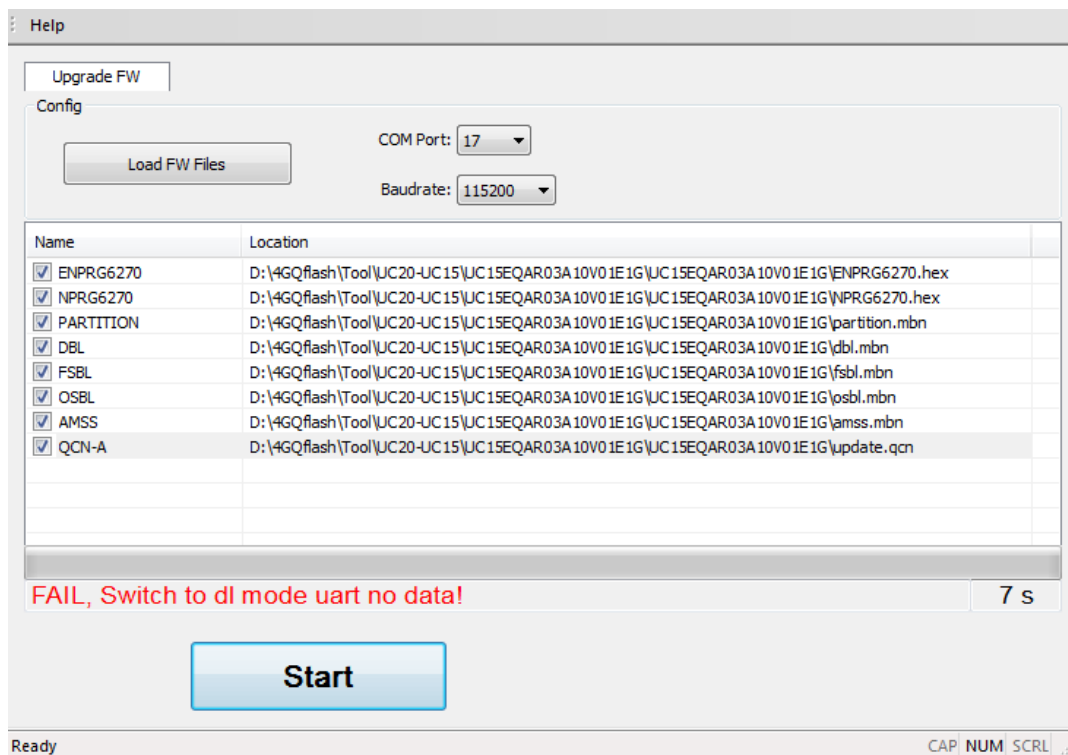


Figure 18: Connected to a Wrong Serial Port (UCxx Modules)

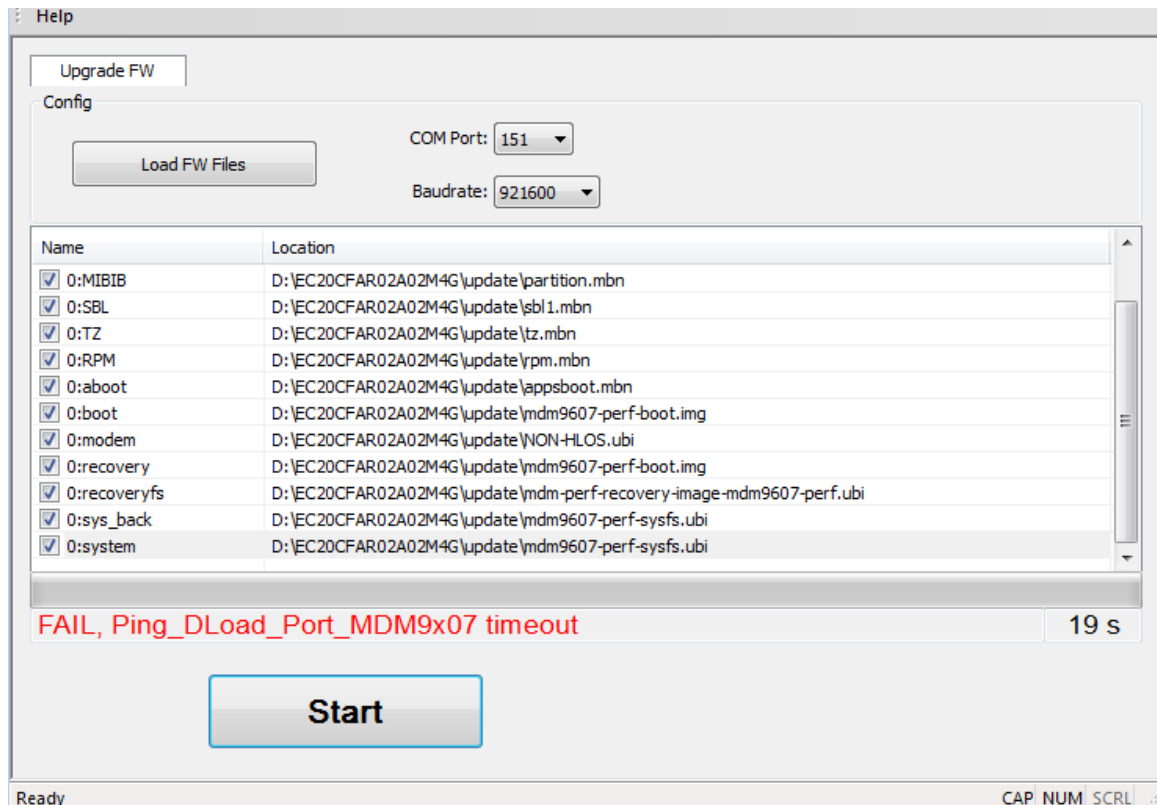


Figure 19: Connected to a Wrong Serial Port (ECxx/EG9x/Ex06/EM05/BG96 Modules)

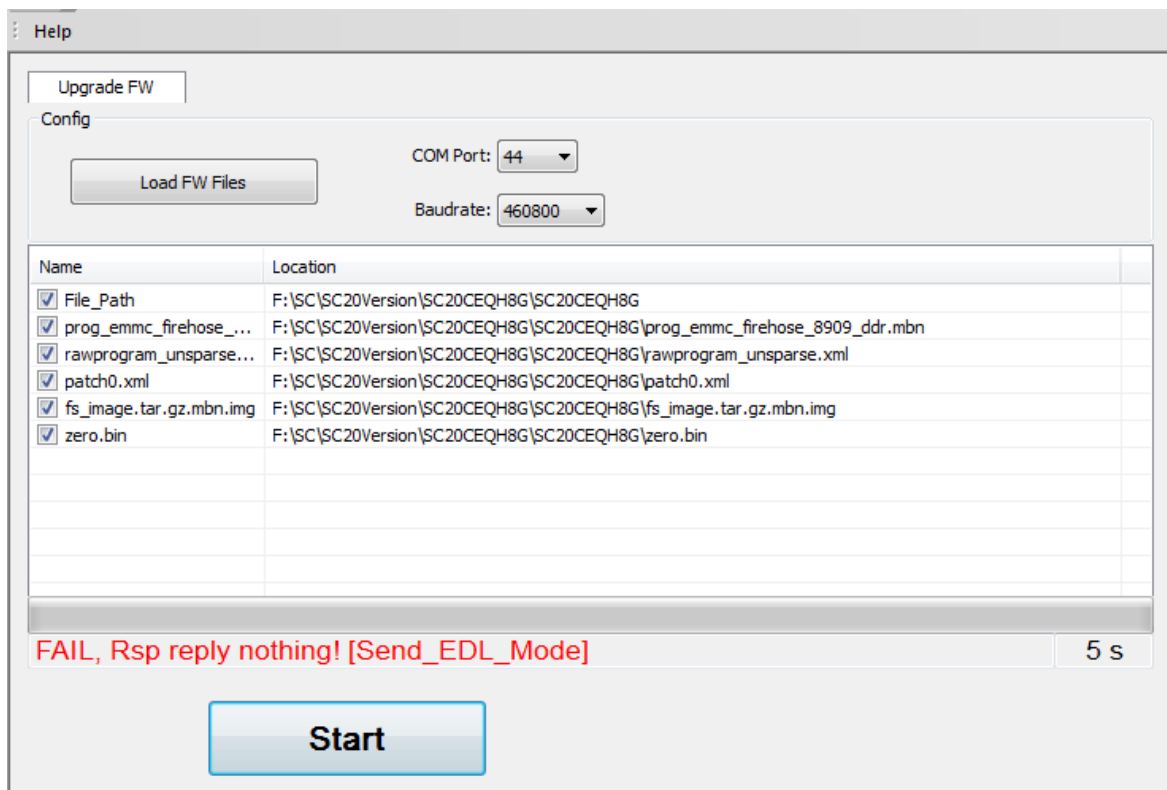


Figure 20: Connected to a Wrong Serial Port (SCxx/SGxx Modules)



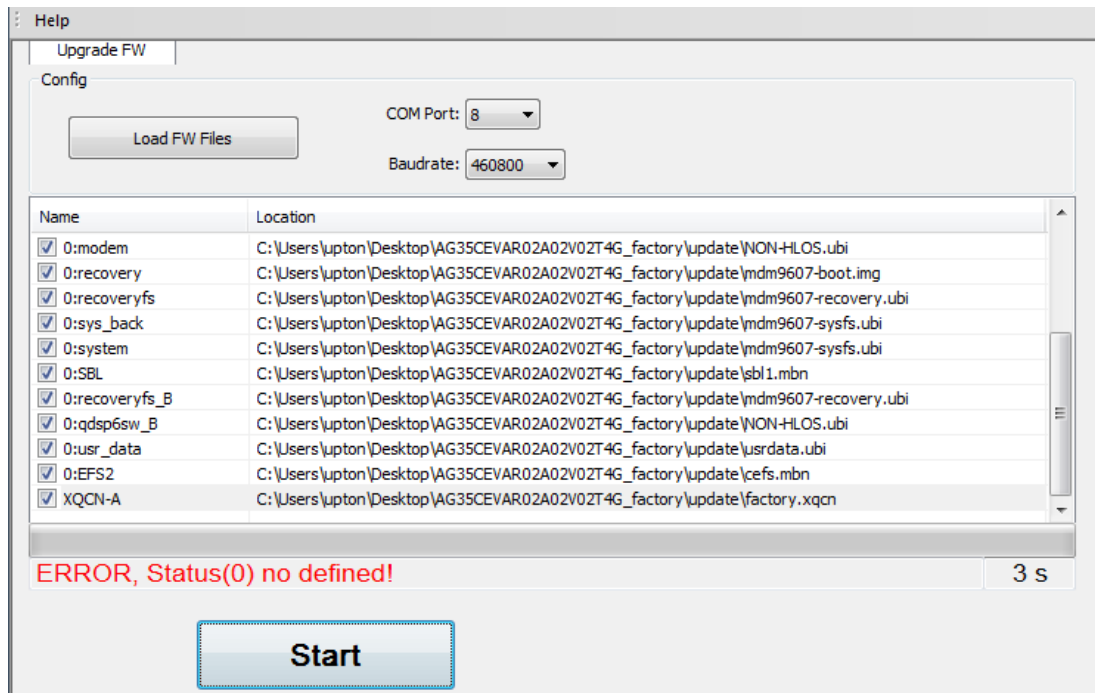


Figure 21: Connected to a Wrong Serial Port (AG35 Module)

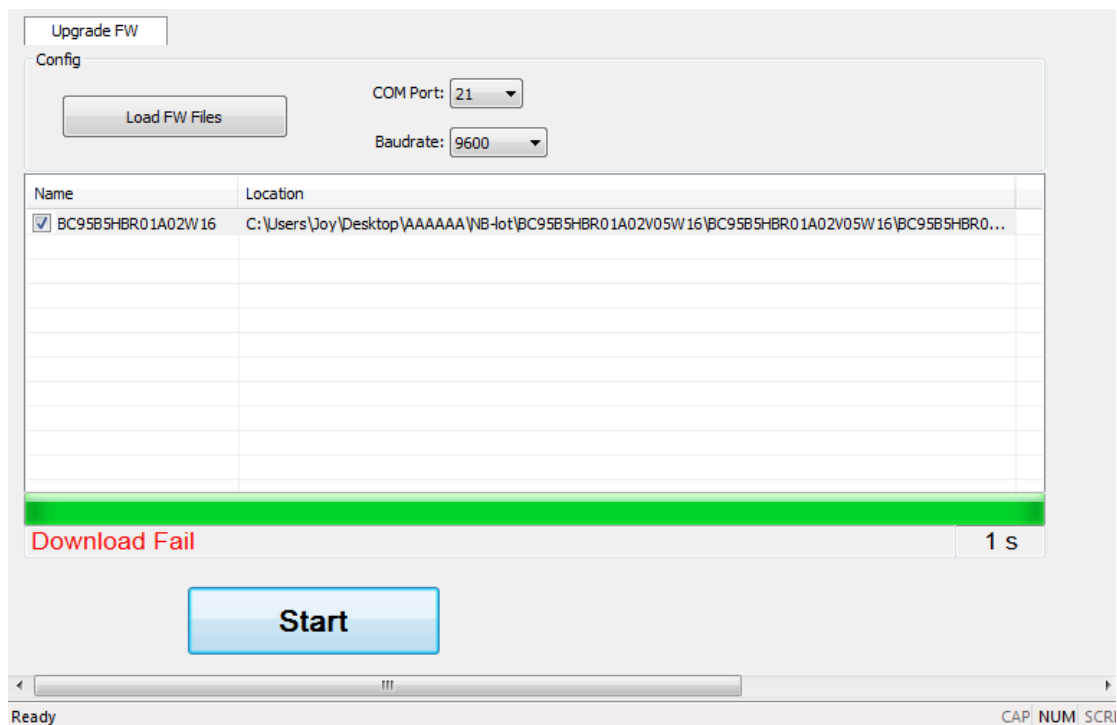


Figure 22: Connected to a Wrong Serial Port (BCxx Modules)



## 2.4.2. Connected to an Occupied Serial Port

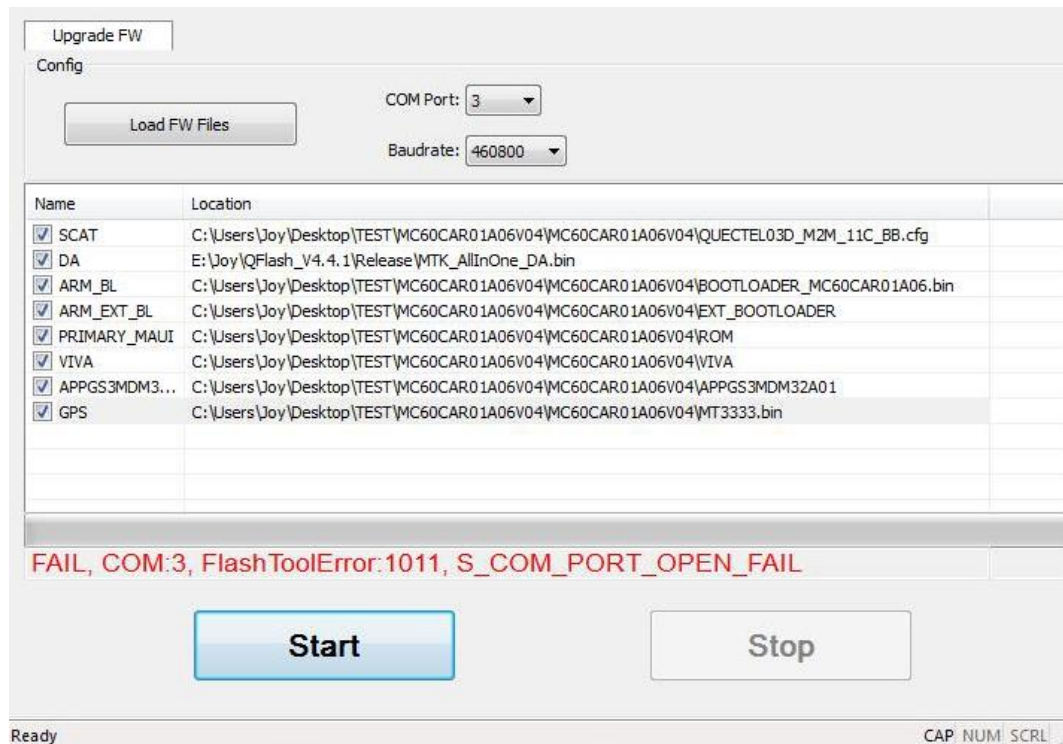


Figure 23: Connected to an Occupied Serial Port (Mxx Modules)

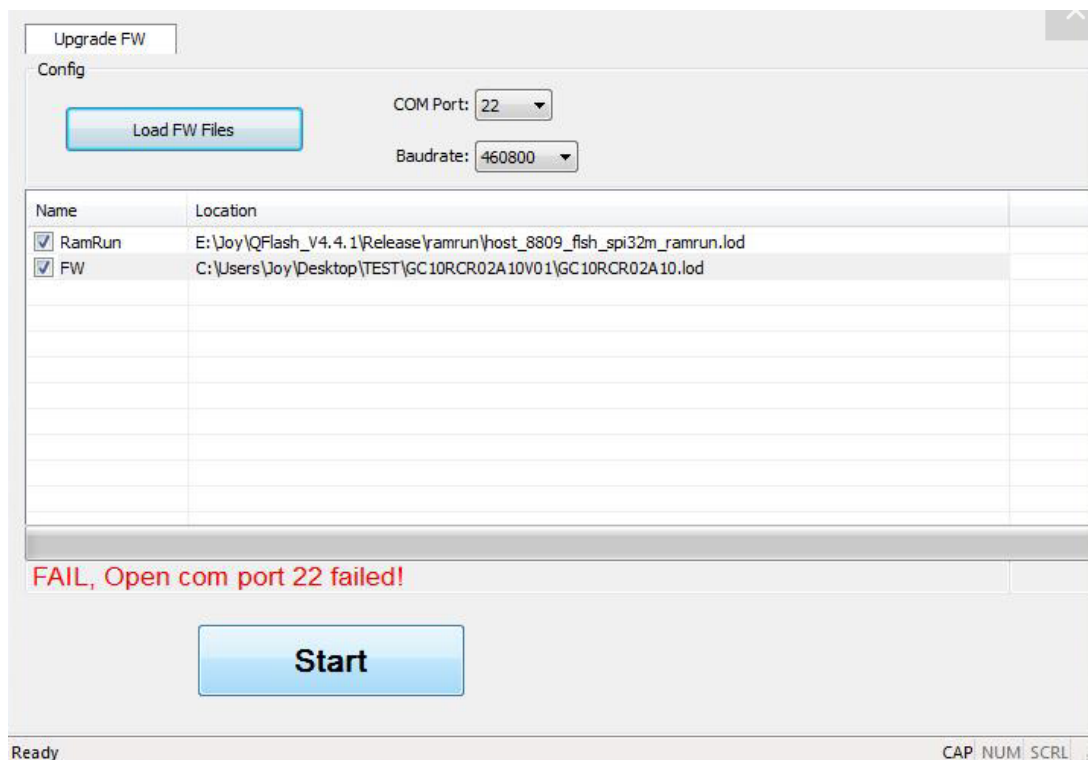


Figure 24: Connected to an Occupied Serial Port (GCxx Modules)

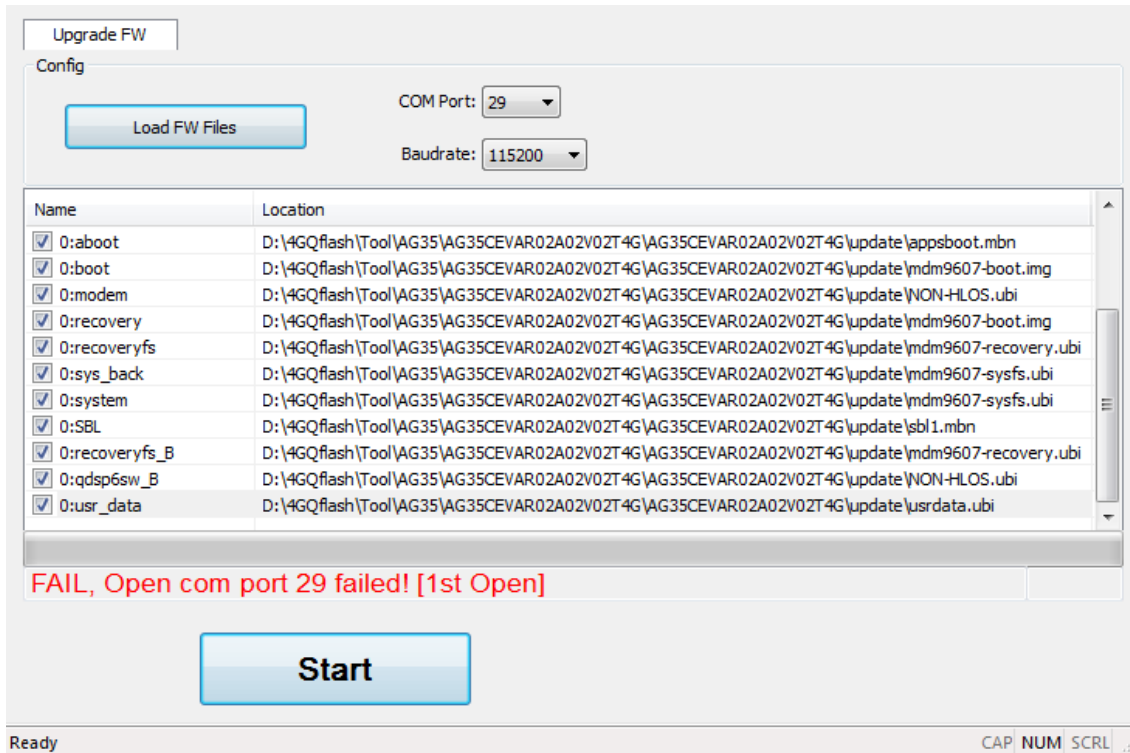


Figure 25: Connected to an Occupied Serial Port (UCxx/ECxx/EG9x/Ex06/SCxx/SGxx/EM05/AG35/BG96 Modules)

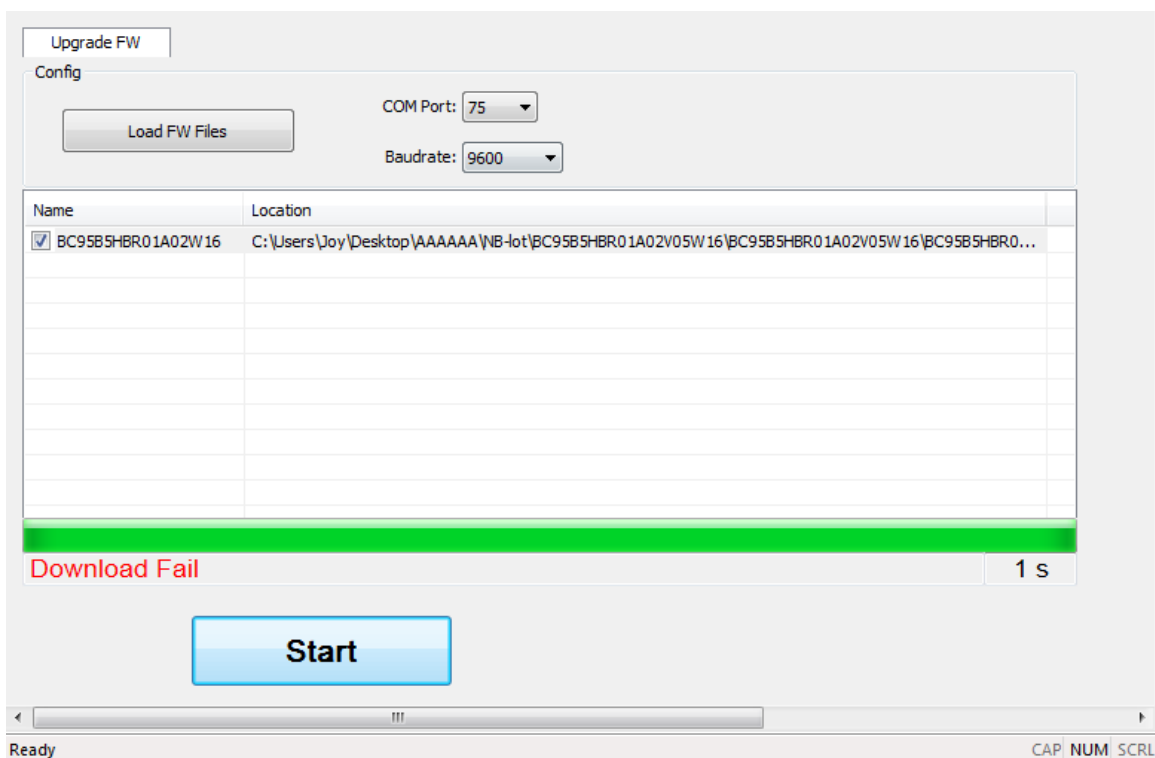


Figure 26: Connected to an Occupied Serial Port (BCxx Modules)



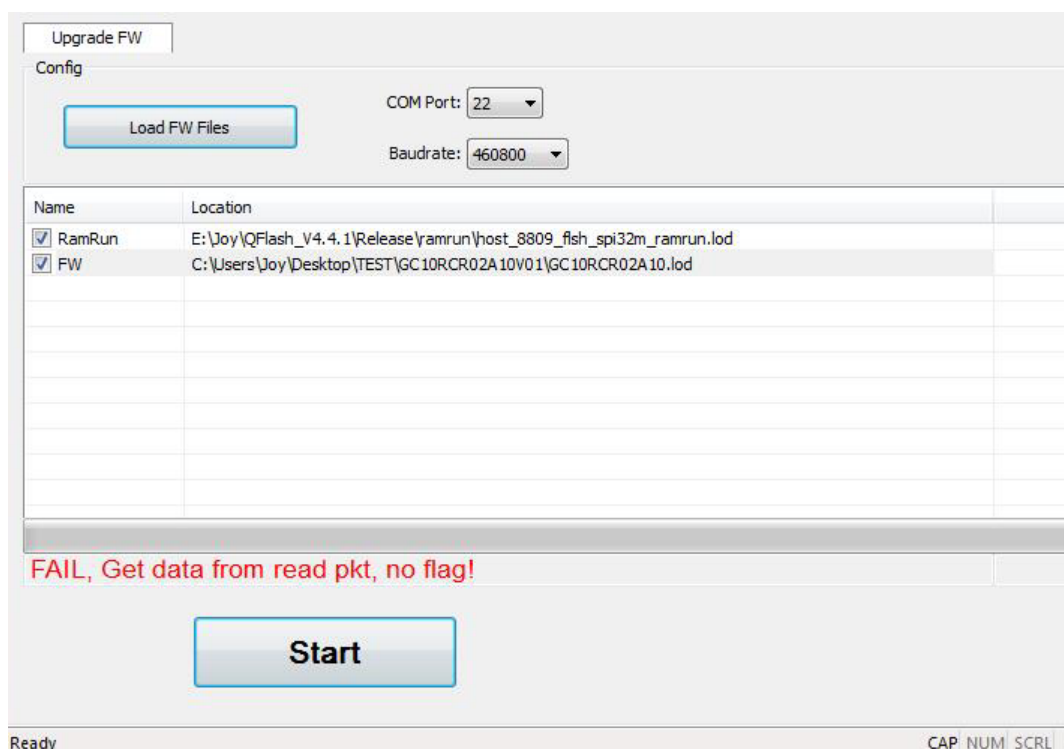


Figure 28: An Unsupported Baud Rate is Selected (GCxx Modules)

#### 2.4.4. Selected an Invalid Load File

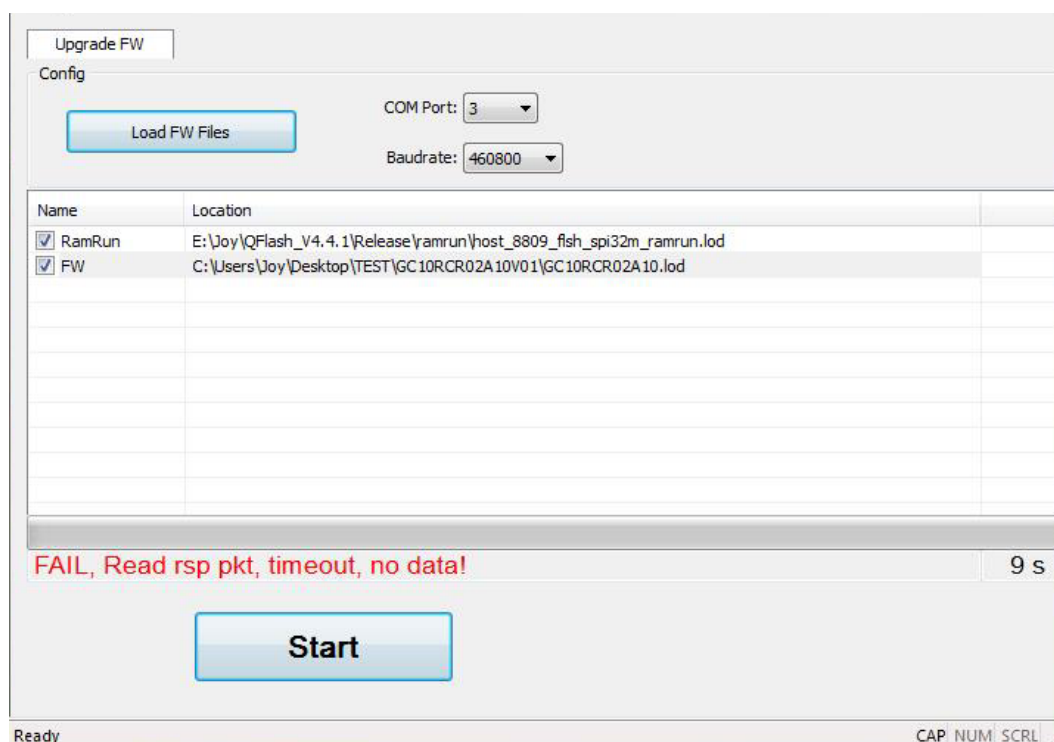


Figure 29: An Invalid Scatter File is Selected (Mxx Modules)

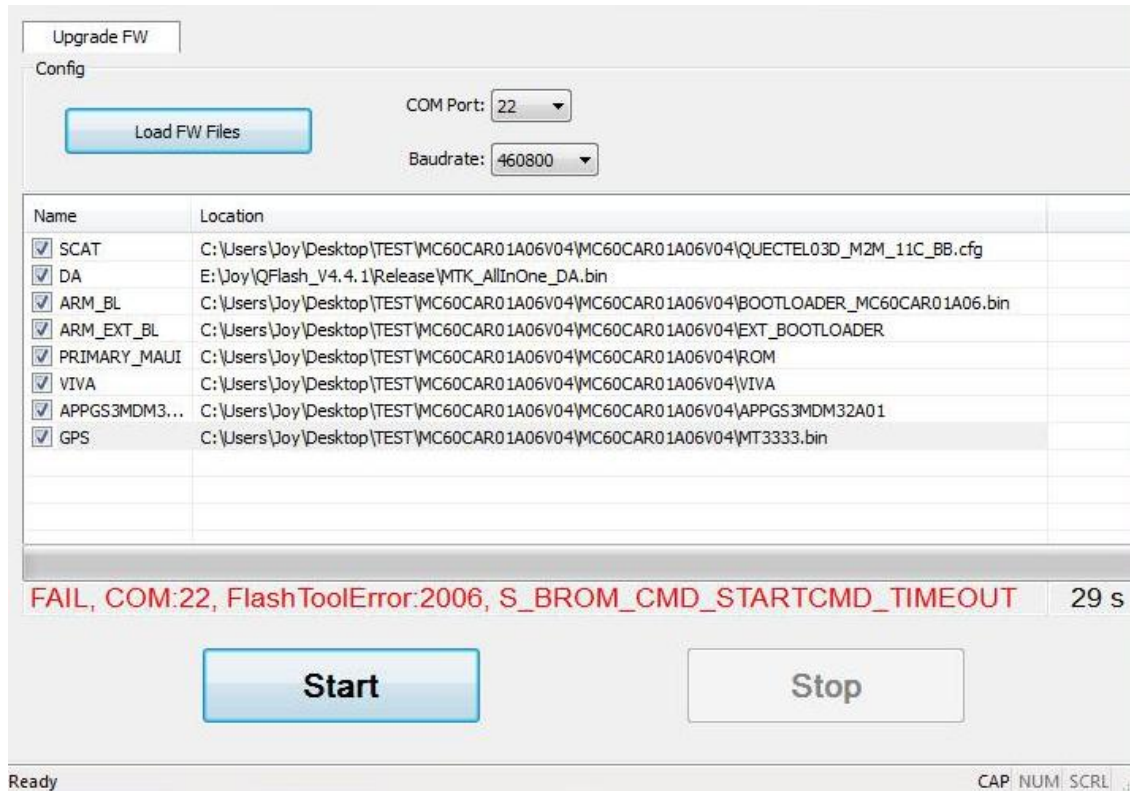


Figure 30: An Invalid Load File is Selected (GCxx Modules)

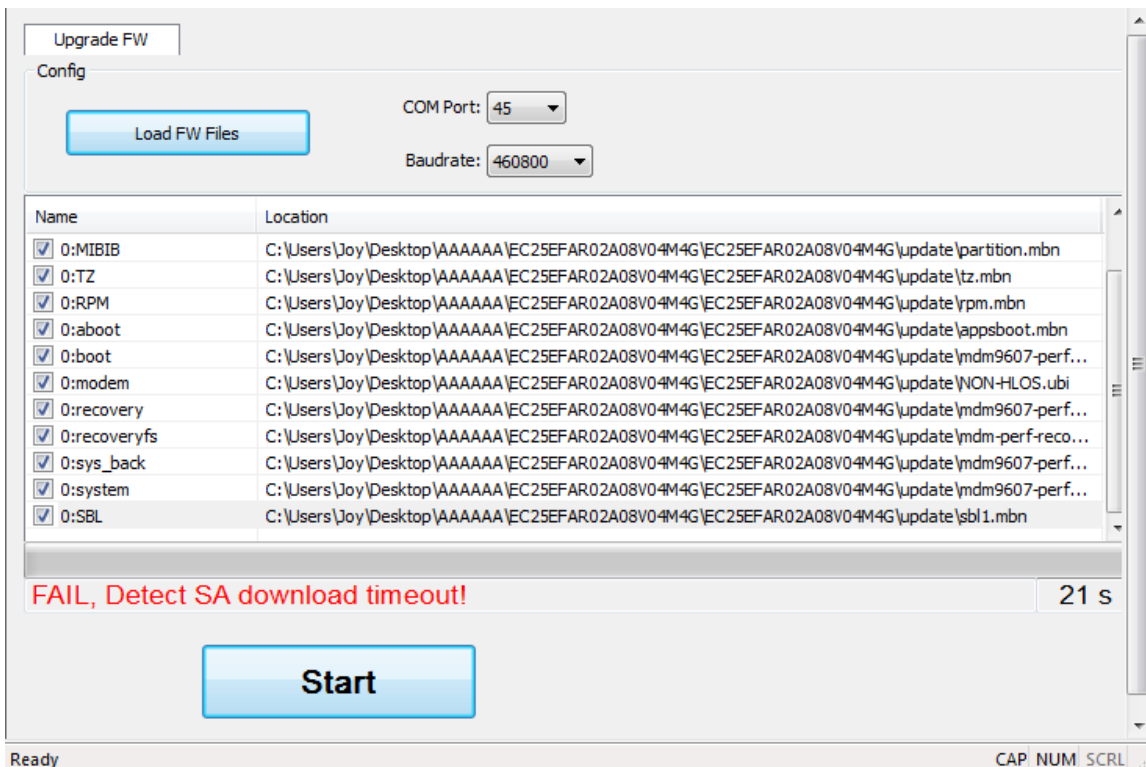


Figure 31: An Invalid Load File is Selected (UCxx Modules)

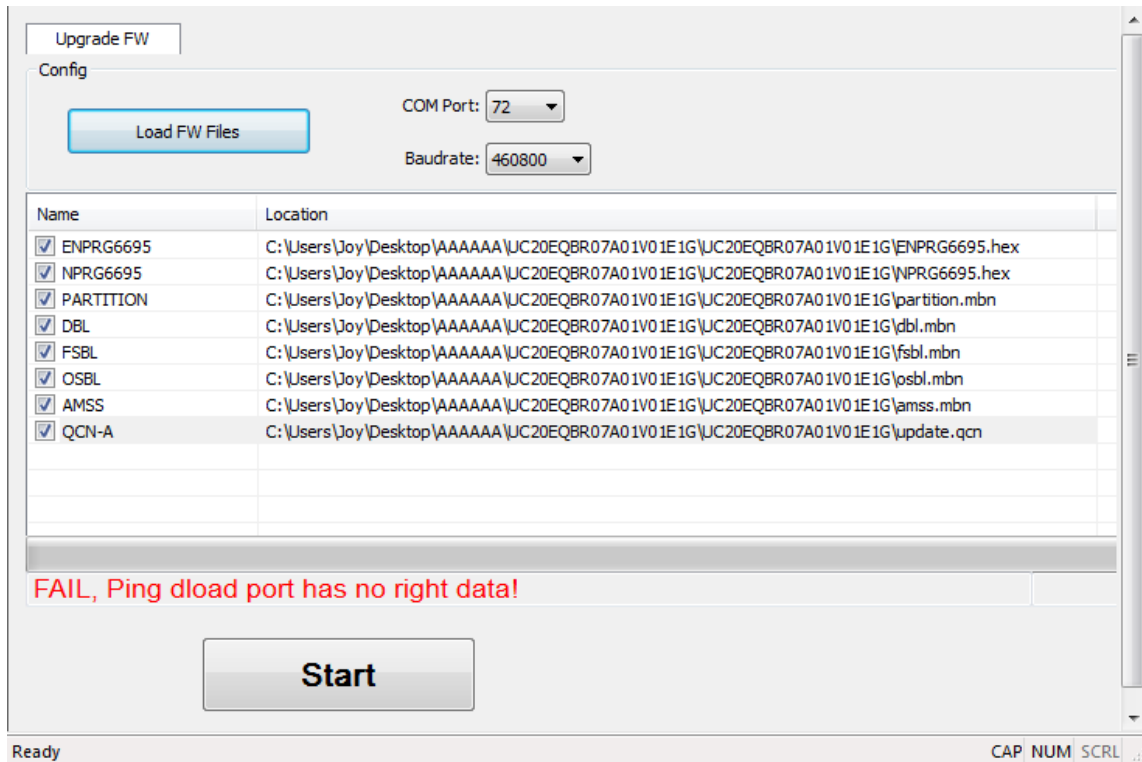


Figure 32: An Invalid Load File is Selected (ECxx/EG9x Modules)

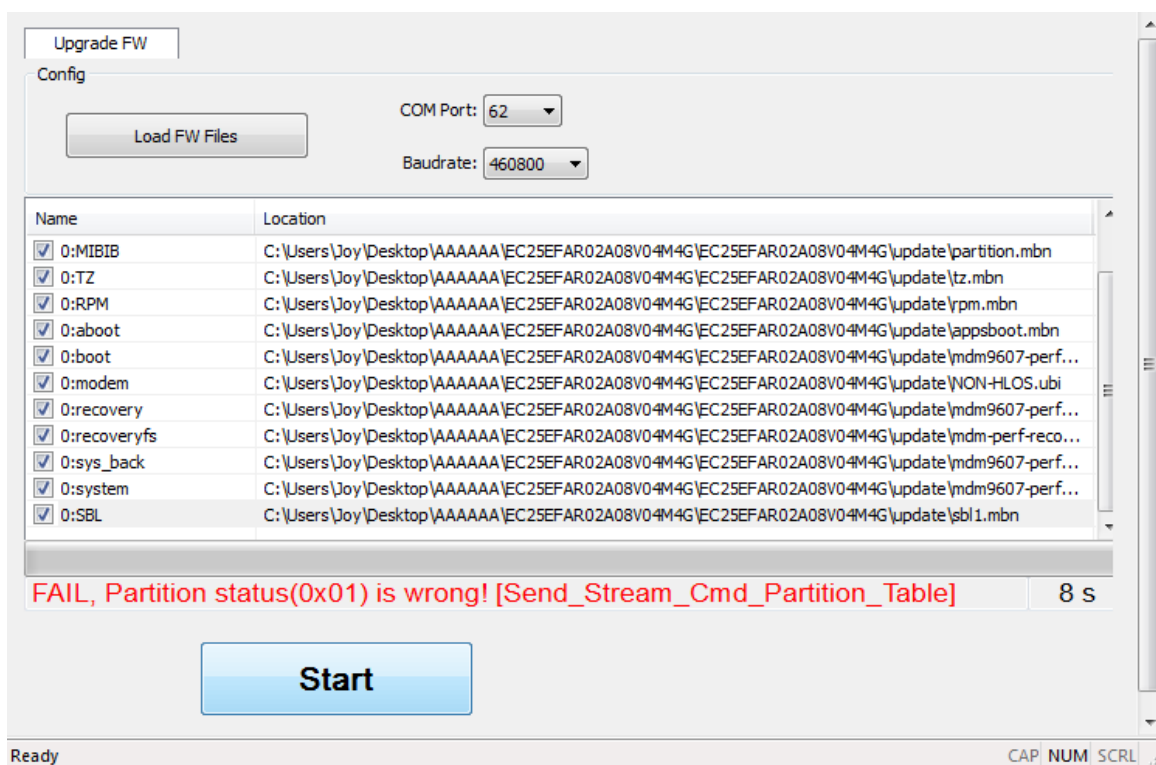


Figure 33: An Invalid Load File is Selected (Ex06/AG35/BG96 Modules)



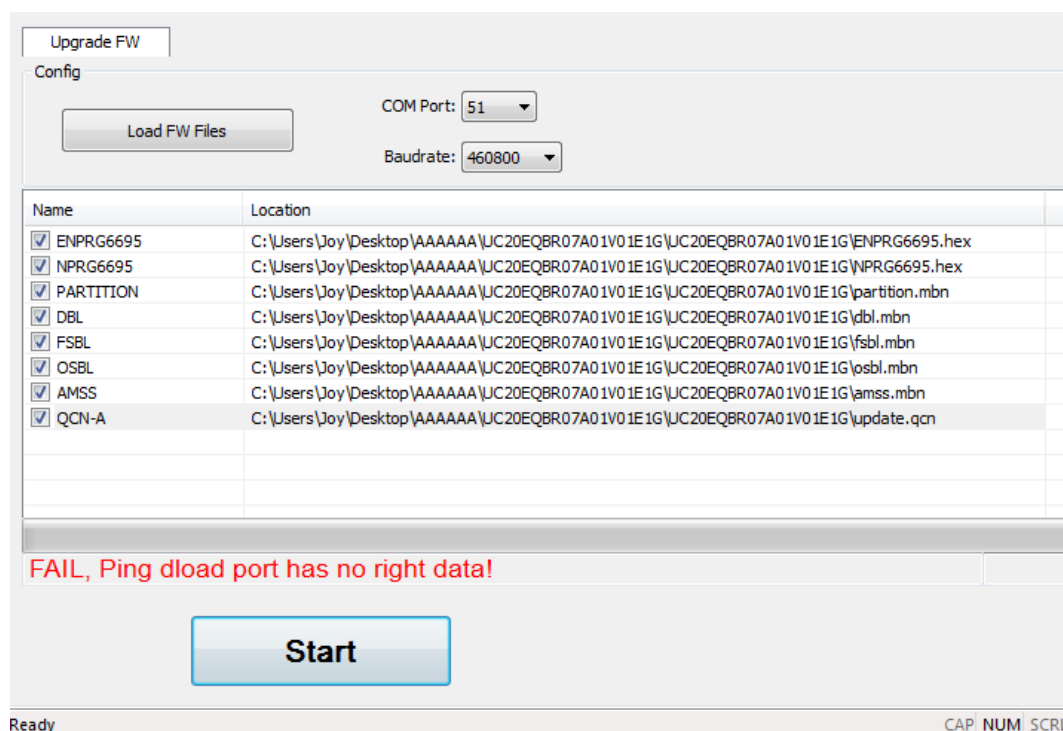


Figure 34: An Invalid Load File is Selected (EM05 Module)

## 2.4.5. Power Supply is Abnormal

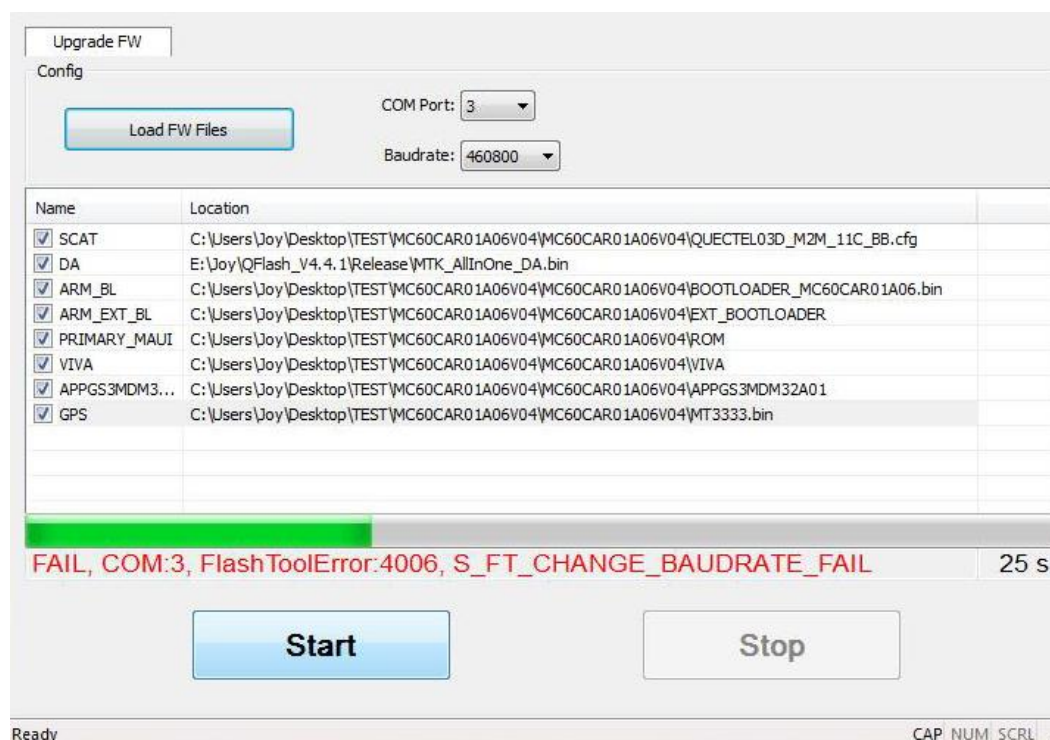


Figure 35: Power Supply is Abnormal (Mxx Modules)

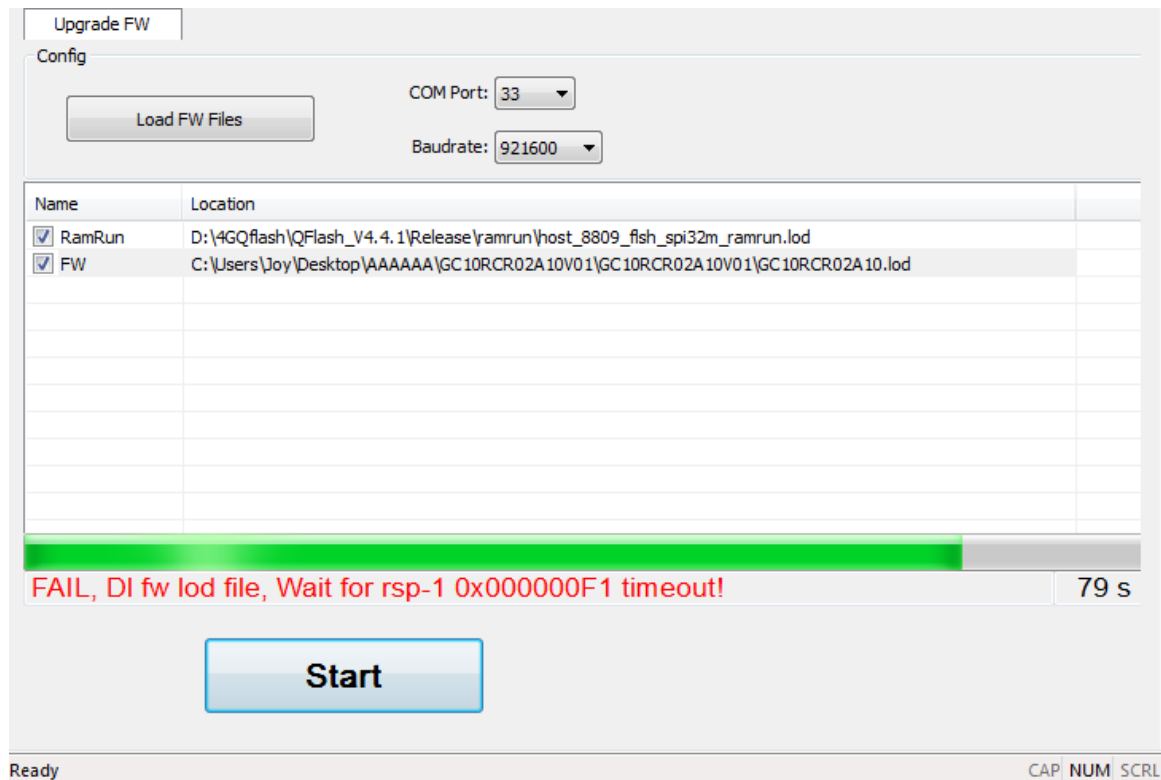


Figure 36: Power Supply is Abnormal (GCxx Modules)

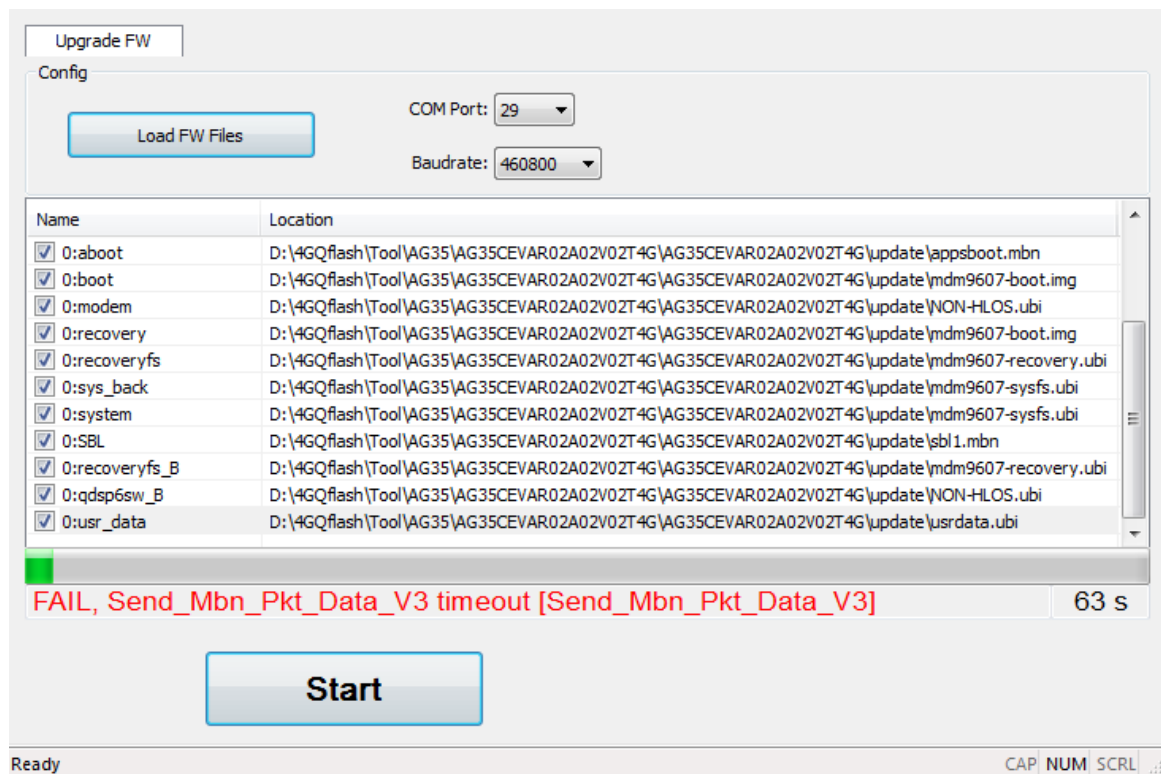


Figure 37: Power Supply is Abnormal (UCxx/ECxx/EG9x/Ex06/EM05/AG35/BG96 Modules)



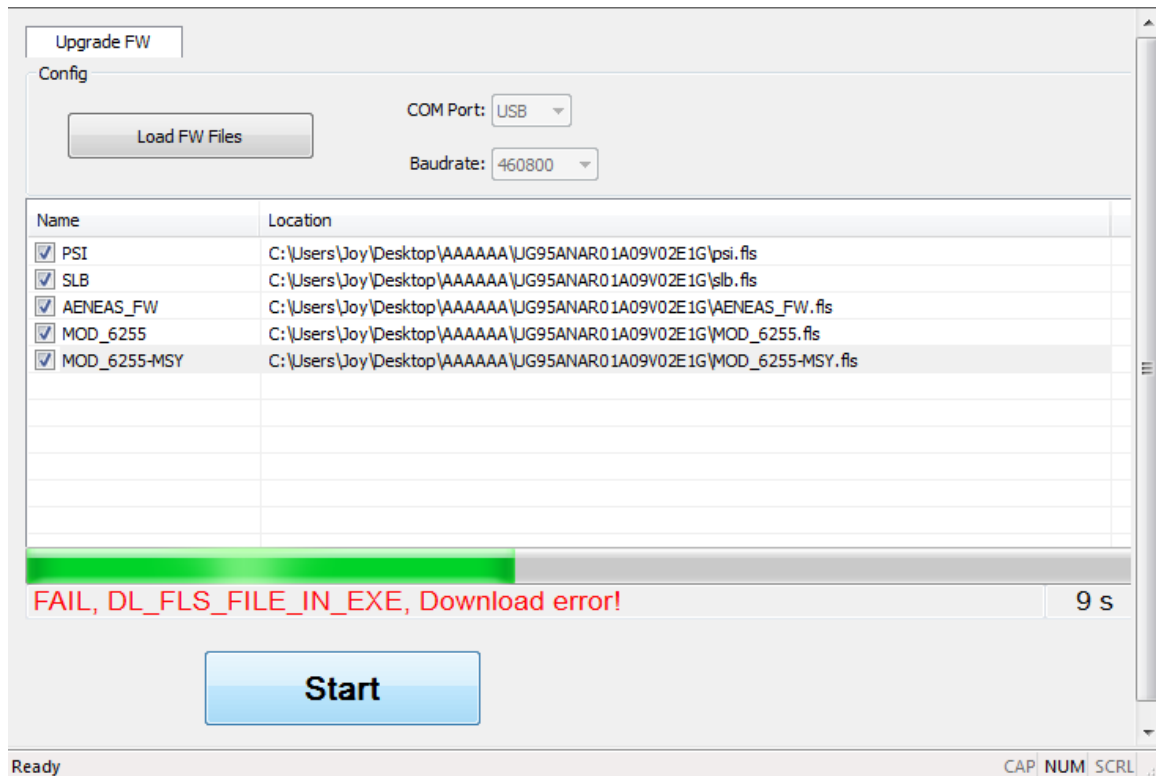


Figure 38: Power Supply is Abnormal (UGxx Modules)

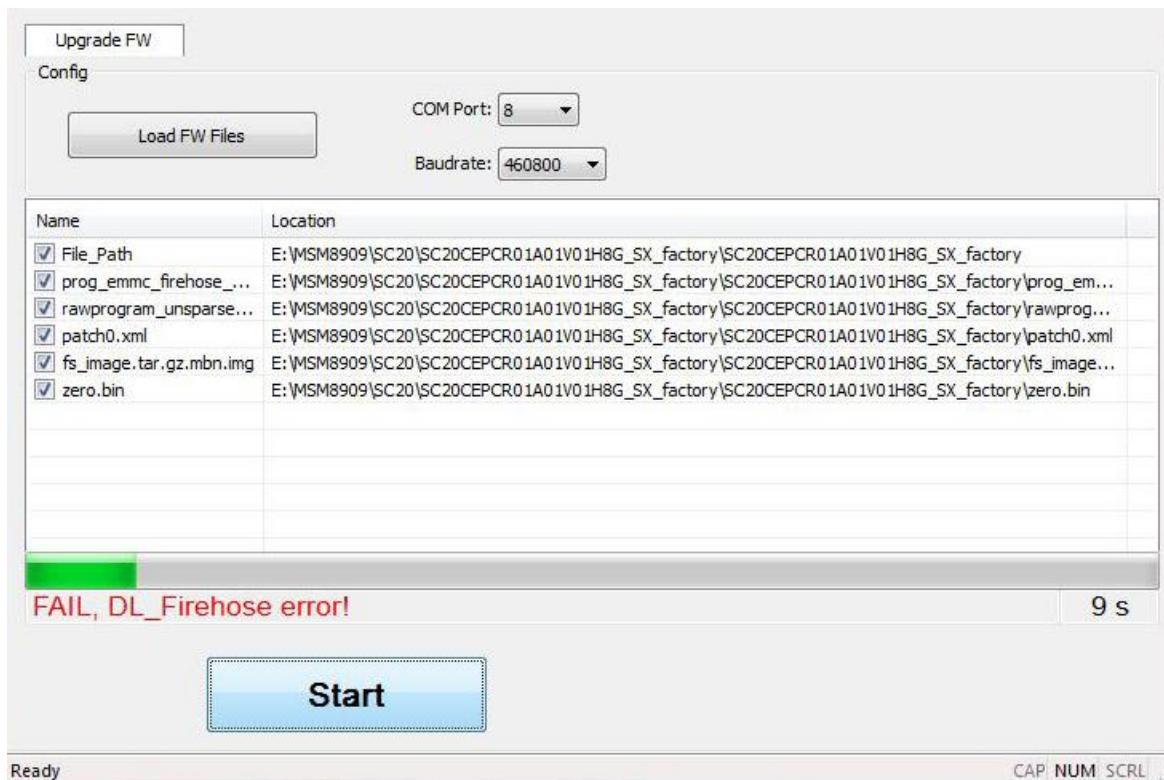


Figure 39: Power Supply is Abnormal (SCxx/SGxx Modules)

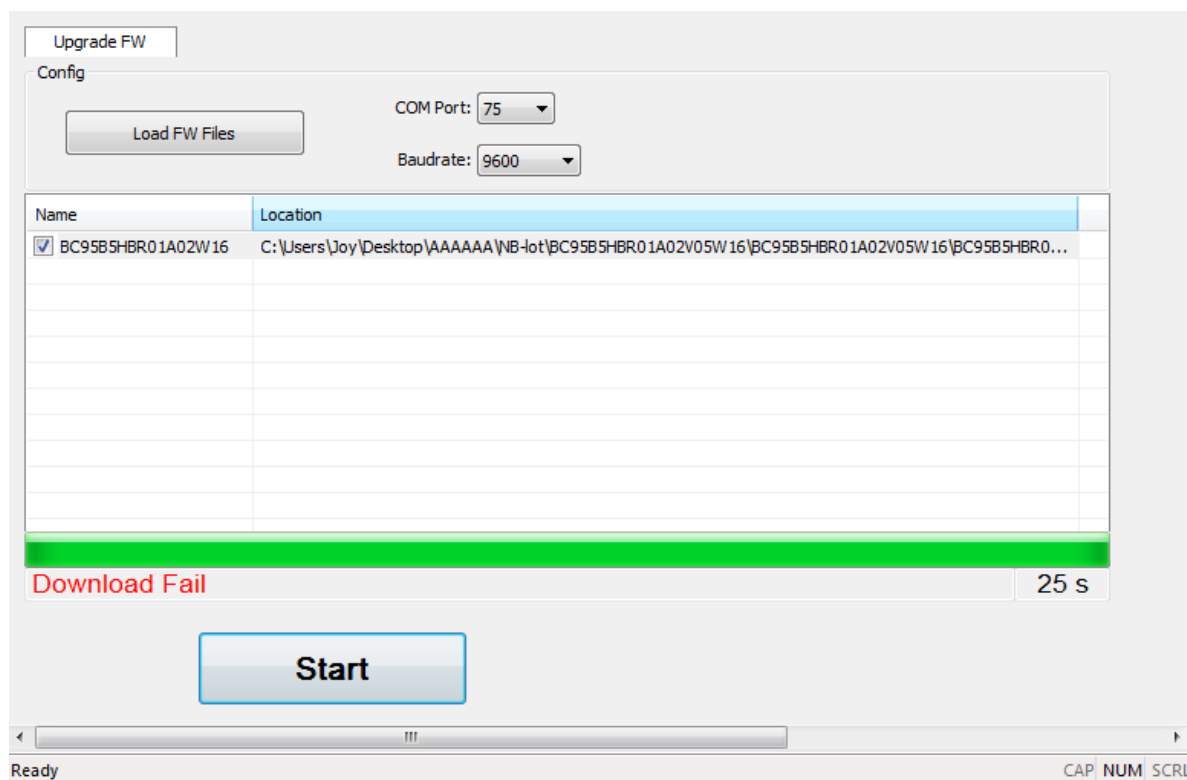


Figure 40: Power Supply is Abnormal (BCxx Modules)

## 2.4.6. USB to RS-232 Converter Cable is Abnormal

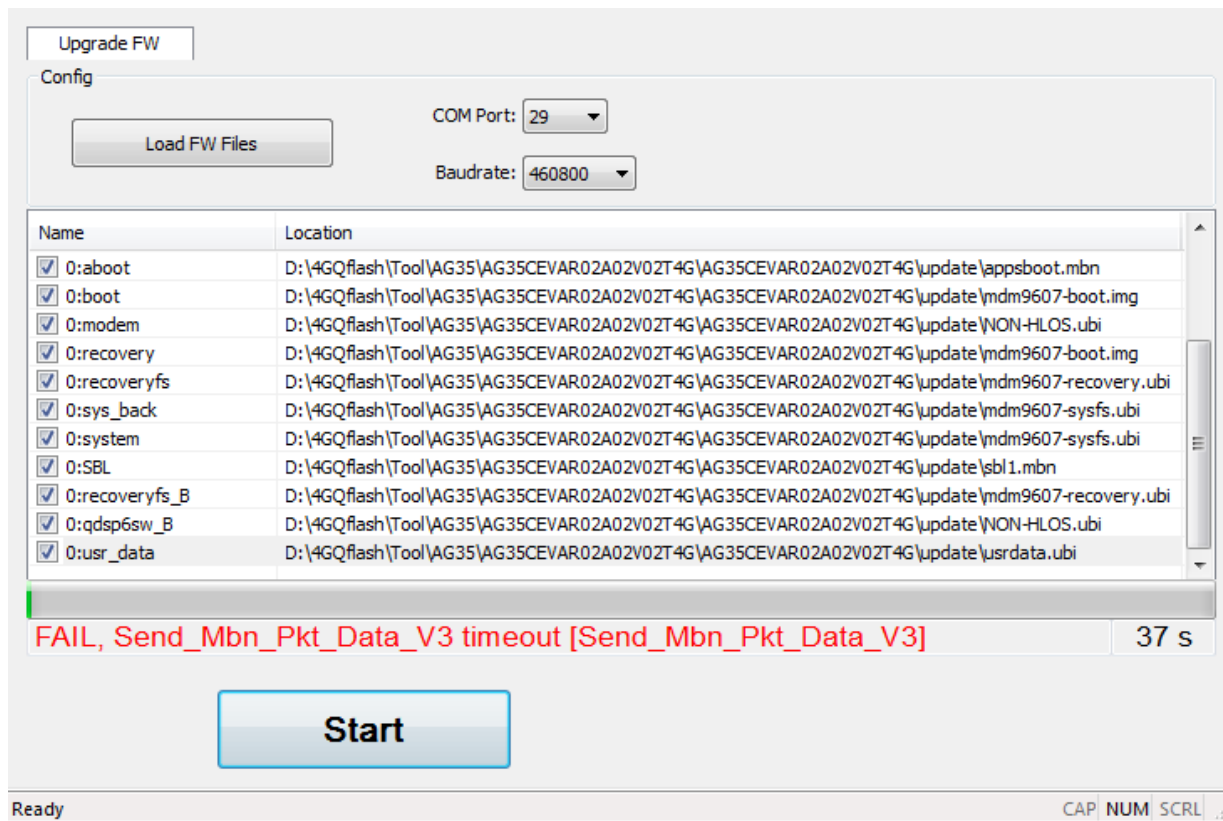


Figure 41: USB to RS-232 Converter Cable is Abnormal