

QFlash User Guide

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About the Document

Revision History

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1.1	2012-12-02	Yolanda YAO	Updated QFlash version to 1.1
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			OpenCPU module (Chapter 2.2.2.2)
			6. Added abnormalities of M65 (Figure 23, 31, 38 and 45)
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5.3	2024-02-06	Simona HUANG/ Joyce YU	1. Updated QFlash version to 6.9 2. Added the methods of upgrading EC200N, EC600M, BC680Z and HCM111Z 3. Removed FCM242D and FCM561D modules
			1. Completely reorganized the structure of the document; 2. Updated QFlash version to 7.0; 3. Removed AG590E module. 4. Added the methods of upgrading AG590H. 5. Added the notes of the firmware download ports of the following modules: ● EC200N, EC200S, EC600M, EG912Y (Table 10) 6. Updated the firmware upgrade baud rates of the following modules: ● LPWA: BG950A, BG951A, BG955A, BG950S (Table 23)
5.4	2024-05-28	Sia SHEN	7. Added the notes of the firmware files of the following modules: ● 5G: RG255C, RG500Q, RG520N, RG525F, RM500Q, RM520N (Table 4) ● LTE-A: EG12 (Table 8) ● LTE Standard: EC20-CE, EC21, EC25, EG21-G, EG25-G, EG95 (Table 8) ● Automotive: AG215S, AG35, AG520R, AG529R, AG551Q (Table 16) ● Smart: SC20, SC66, SC200E, SC665S, SC668S, SG520B, SG560D, SG865W, SG885G (Table 20) ● LPWA: BG95, BG96 (Table 24) 8. Added the firmware upgrade starting steps of the following modules: ● LTE Standard: EC200N, EC200S, EC600M (Table 13)

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1 Introduction

This document mainly introduces firmware upgrade procedure with the QFlash tool provided by Quectel. QFlash is a single-port firmware upgrade tool. It supports firmware upgrade of one module at a time.

1.1. Operating System

The tool can run on a PC without actual installation, if the PC runs one of the following operating systems.

- Windows 7
- Windows 8
- Windows 10
- Windows 11

NOTE

1. In Windows 10 and 11, right-click on the executable file of the toolkit and select “**Run as administrator**” to run the tool.
2. The storage path of the tool and the firmware package must be in English characters and should NOT contain any space, “()” or Chinese characters.
3. The storage/loading path of the firmware package has to be a local path instead of a USB device path or a network path.
4. The firmware package should be intact and not modified.

1.2. Applicable Modules

QFlash is applicable to the following Quectel modules.

Table 1: Applicable Modules

Product Line	Module
5G	RG200U
	RG255C
	RG500L
	RG500Q
	RG500U
	RG520N
	RG525F
	RM500Q
	RM500U
	RM520N
LTE-Advanced	EG06
	EG060W
	EG12
	EG18
	EM06
	EM12-G
	EP06
LTE Standard	EC20-CE
	EC200A
	EC200N

	EC200S
	EC200U
	EC21
	EC25
	EG21-G
	EG25-G
	EC600M
	EG91
	EG912Y
	EG915Q
	EG95
	EM05
Automotive	AG15
	AG215S
	AG35
	AG509M
	AG519M
	AG520R
	AG521R
	AG525R
	AG529R
	AG550Q
	AG551Q
	AG552Q
	AG553Q
	AG590H

Smart	SC20
	SC20-AX
	SC66
	SC200E
	SC200L
	SC668S
	SG368Z
	SG520B
	SG560D
	SG865W
	SG885G
LPWA	BC660K
	BC680Z
	BC92
	BC950K
	BG77
	BG770A
	BG95
	BG950A
	BG951A
	BG955A
	BG950S
GSM	BG96
	M65
	M66
	M95

Short-Range	MC60
	FC41D
	FCM100D
	FCM360W
	FLM140D
	HCM010S
	HCM111Z
Satellite	CC660D

NOTE

1. Quectel modules listed above may include a single model or multiple models. See the corresponding module specifications for more specific information.
2. Do not use **Quectel_QFlash_V6.6** to upgrade the firmware of modules (RG200U, RG500U, RM500U, EC200U, SC200L, BC92, M65) to avoid the following risk:
When the firmware upgrade is finished, if you switch to the new firmware without closing the tool, it will load the original firmware rather than the new one.

1.3. About QFlash Tool

Click “**About This Tool**” under “**Help**” in the toolbar, and you can obtain the version information of the tool as shown below:

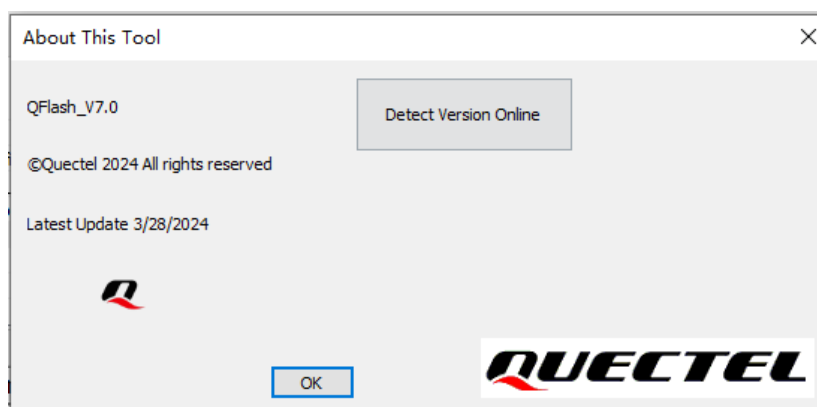


Figure 1: About the QFlash Tool

2 Firmware Upgrade Procedures

Firmware upgrade procedures with QFlash tool are illustrated below.

Step 1: Select COM port and baud rate.

Step 2: Load firmware file.

Step 3: Start firmware upgrade.

NOTE

1. In general, you can follow the above steps to upgrade the firmware. The upgrade steps for certain modules are slightly different, see this chapter for details.
2. QFlash supports firmware upgrade in Firehose and Sahara modes.
 - When the *Firehose* folder exists in the firmware package, the firmware will be upgraded in Firehose mode by default. To upgrade in Sahara mode, please select “**Sahara only**” under “**Configuration**” in the menu bar. If the upgrade in Firehose mode fails after many attempts, please try again after turning off or uninstalling your anti-virus software and firewall.
 - If there is no *Firehose* folder in the firmware package, the firmware will be upgraded in Sahara mode by default.

2.1. 5G Modules

2.1.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

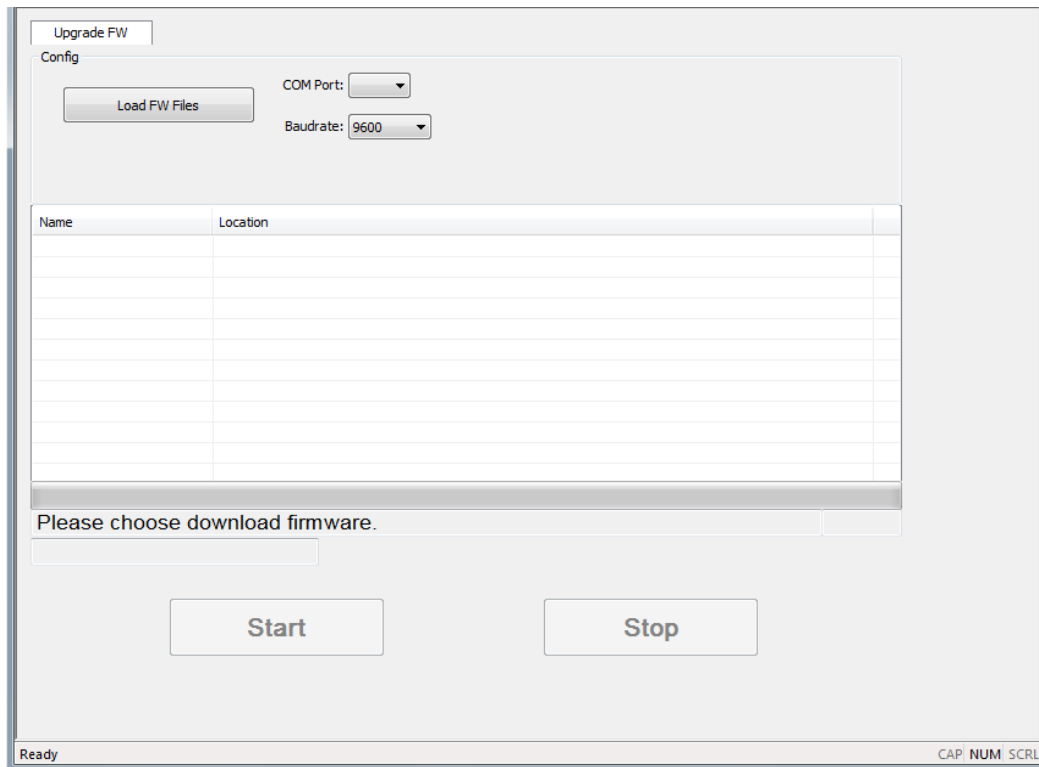


Figure 2: Main Interface of QFlash

2.1.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 2: Summary of 5G Module Firmware Download Ports

Module	COM Port	Comment
RG200U	Quectel USB AT Port	1. After “Start” button is clicked, the tool will automatically switch to the SPRD U2S Diag port to start the upgrade. After successful upgrade, the port loading is resumed automatically, without the need of module resetting. 2. You can also press “BOOT” button when powering on, and then switch to SPRD U2S Diag port for upgrade.
RG255C	Quectel USB DM Port	
RG500L	Quectel USB ETS Port	
RG500Q	Quectel USB DM Port	
RG500U	Quectel USB AT Port	1. After “Start” button is clicked, the tool will automatically switch to the SPRD U2S Diag port to start the upgrade. After successful upgrade, the port loading is resumed automatically, without the need of module resetting. 2. You can be upgraded by short-circuiting BOOT to J201 to get the SPRD U2S Diag port loaded for upgrade.
RG520N	Quectel USB DM Port	
RG525F	Quectel USB DM Port	
RM500Q	Quectel USB DM Port	
RM500U	Quectel USB AT Port	After “ Start ” button is clicked, the tool will automatically switch to the SPRD U2S Diag port to start the upgrade. After successful upgrade, the port loading is resumed automatically, without the need of module resetting.
RM520N	Quectel USB DM Port	

Step 2: Click “COM Port” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

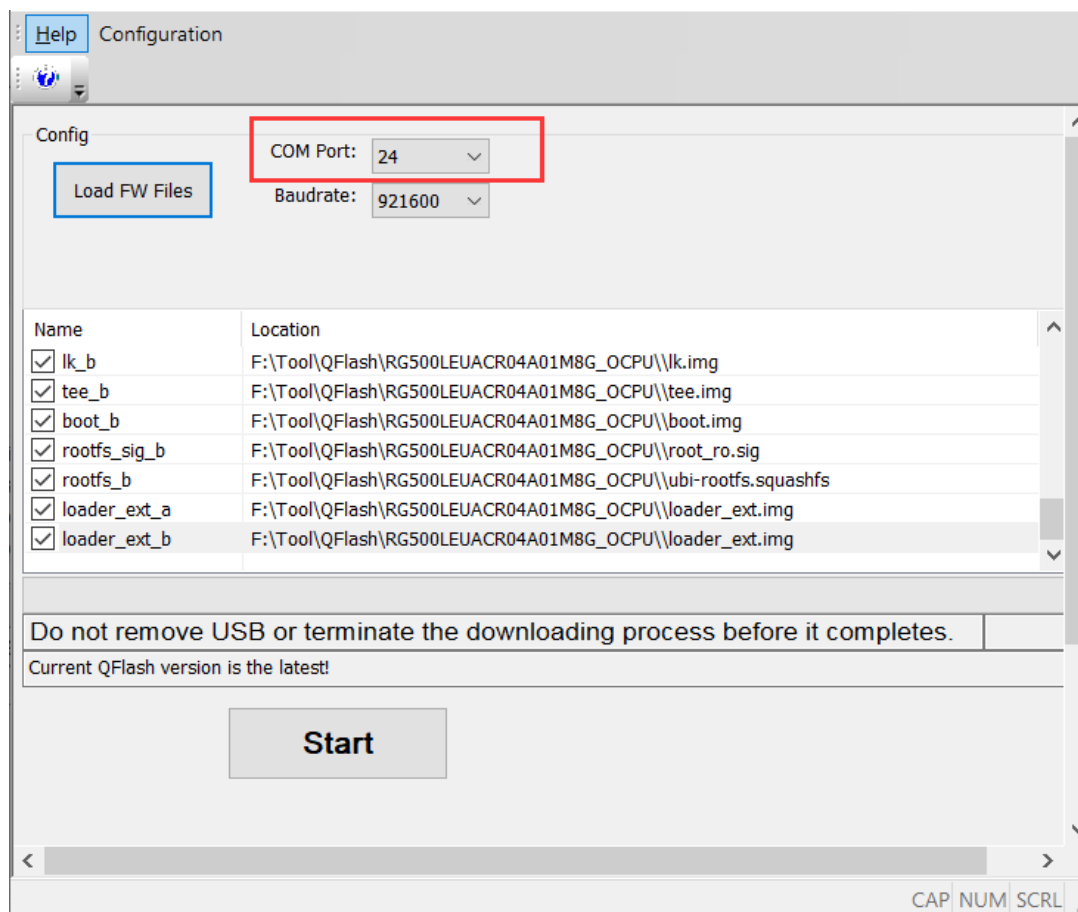


Figure 3: Select COM Port Number

2.1.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 3: Summary of 5G Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
RG200U	460800	
RG255C	460800	
RG500L	460800	

RG500Q	460800
RG500U	460800
RG520N	460800
RG525F	460800
RM500Q	460800
RM500U	460800
RM520N	460800

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

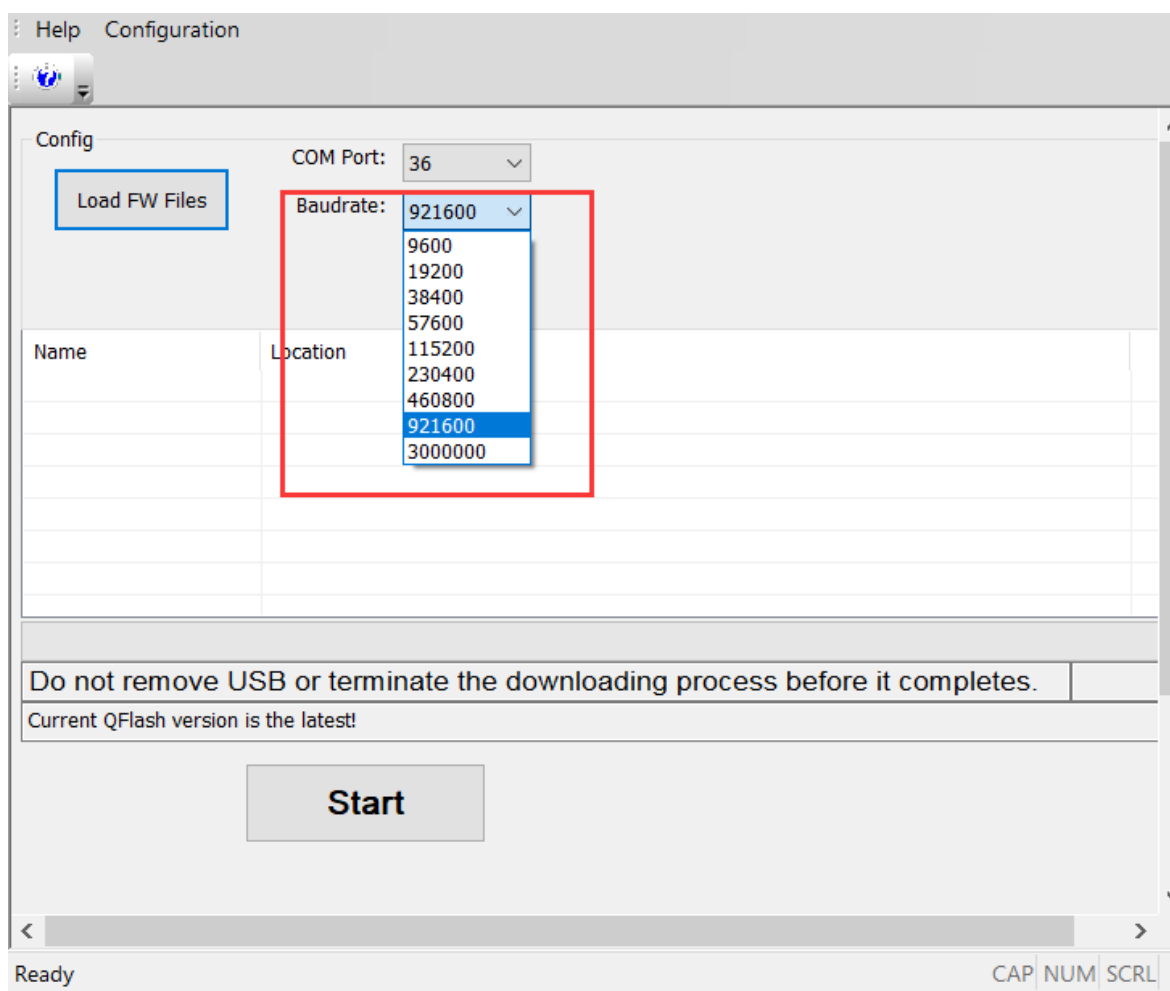


Figure 4: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.1.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 4: Summary of 5G Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
RG200U	.pac	
RG255C	.elf	Select <i>prog_firehose_sdx35.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_sdx35.elf</i> .
RG500L	.xml	
RG500Q	.mbn	Select <i>prog_firehose_sdx55.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_sdx55.mbn</i> .
RG500U	.pac	
RG520N	.elf	Select <i>prog_firehose_lite.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_lite.elf</i> .
RG525F	.elf	Select <i>prog_firehose_lite.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_lite.elf</i> .
RM500Q	.mbn	Select <i>prog_firehose_sdx55.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_sdx55.mbn</i> .
RM500U	.pac	
RM520N	.elf	Select <i>prog_firehose_lite.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_lite.elf</i> .

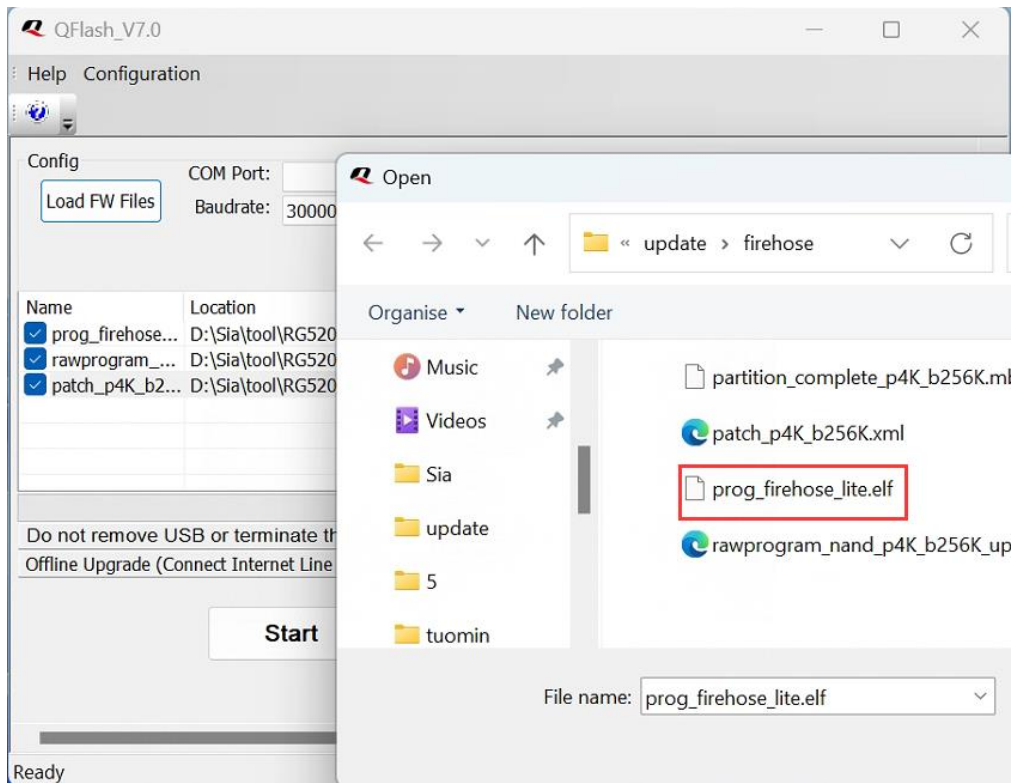


Figure 5: Select the File to Be Downloaded

2.1.3. Start Firmware Upgrade

Table 5: 5G Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
RG200U	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
RG255C	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
RG500L	1. Power on the module. 2. Click the “Start” button and the firmware will be upgraded.	
RG500Q	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
RG500U	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
RG520N	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	

RG525F	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
RM500Q	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
RM500U	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
RM520N	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	Support firmware upgrading by PCIe interface.

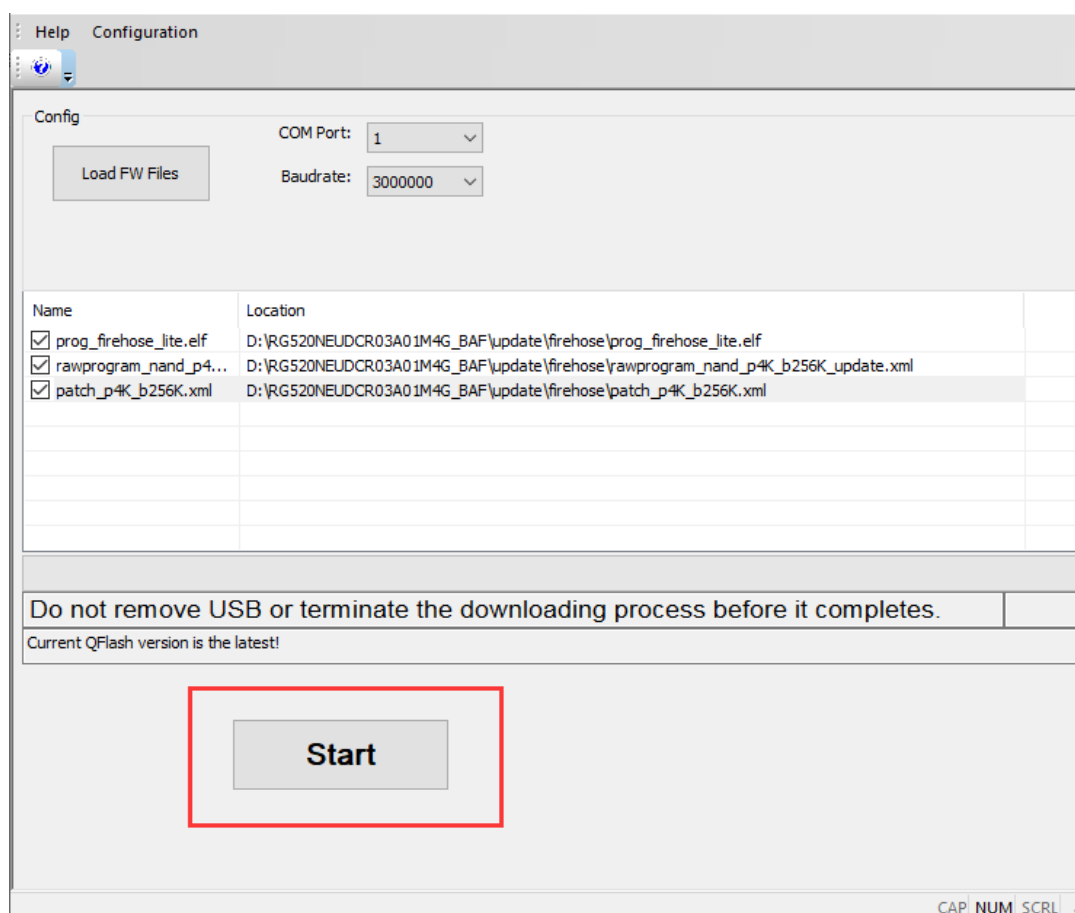


Figure 6: “Start” Button

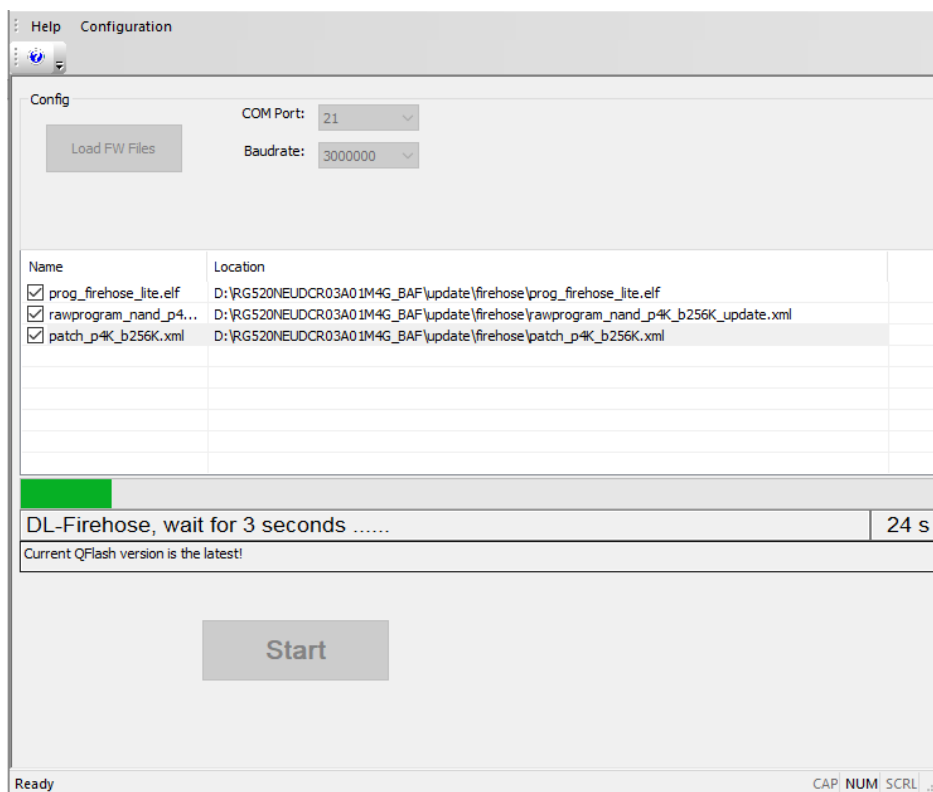


Figure 7: Start Firmware Upgrade Automatically After Clicking “Start” Button

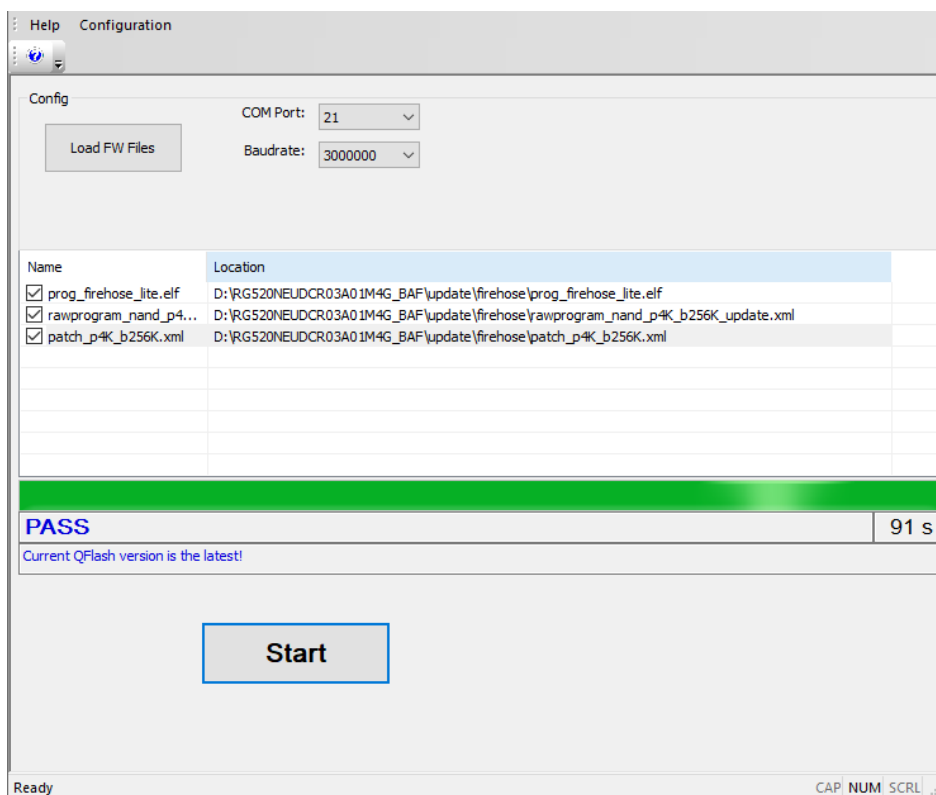


Figure 8: Firmware Upgraded Successfully

2.2. LTE-A Modules

2.2.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

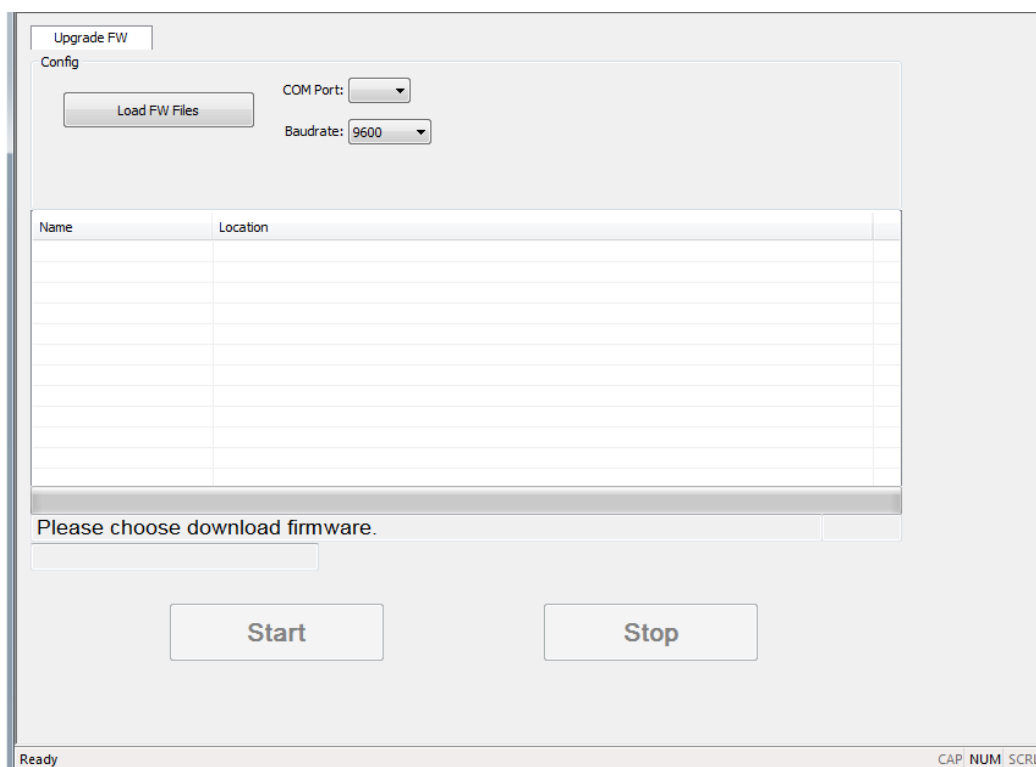


Figure 9: Main Interface of QFlash

2.2.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 6: Summary of LTE-A Module Firmware Download Ports

Module	COM Port	Comment
EG06	Quectel USB DM Port	
EG060W	Power on the module to automatically select Quectel USB Download Port for upgrade	

EG12	Quectel USB DM Port
EG18	Quectel USB DM Port
EM06	Quectel USB DM Port
EM12-G	Quectel USB DM Port
EP06	Quectel USB DM Port

Step 2: Click “**COM Port**” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

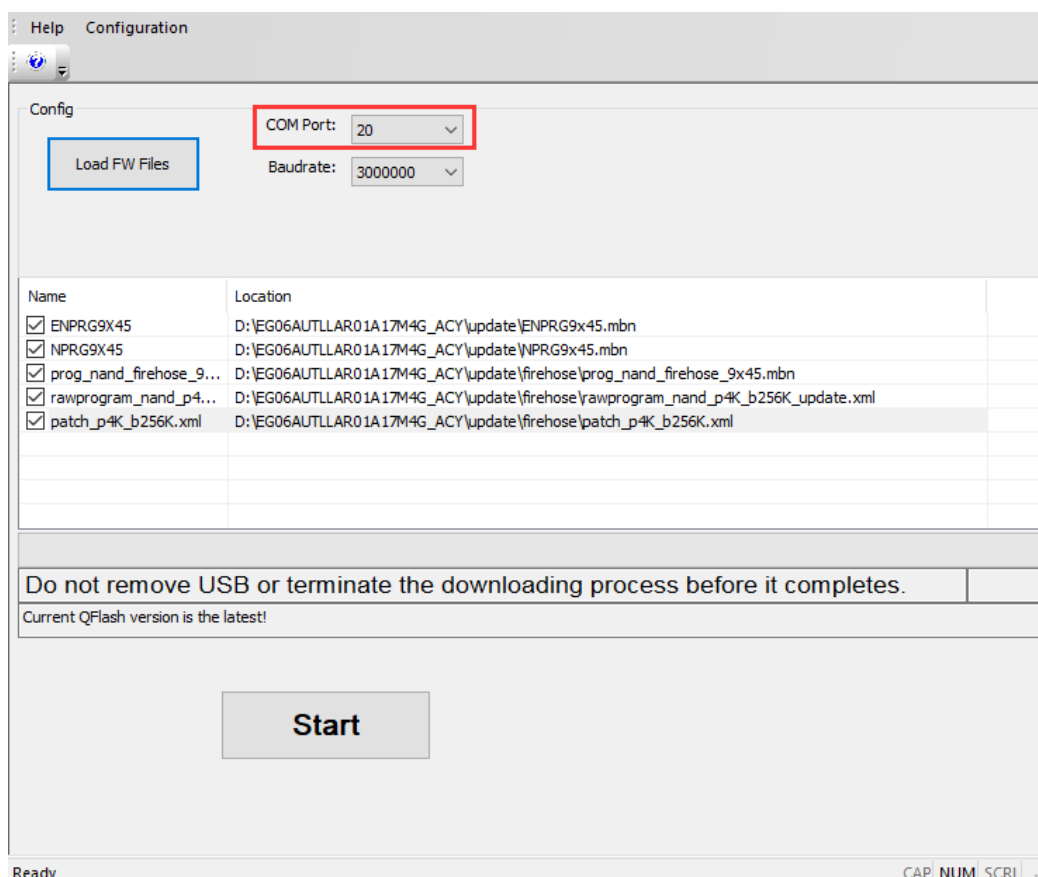


Figure 10: Select COM Port Number

2.2.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 7: Summary of LTE-A Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
EG06	460800	
EG060W	460800	
EG12	460800	
EG18	460800	
EM06	460800	
EM12-G	460800	
EP06	460800	

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

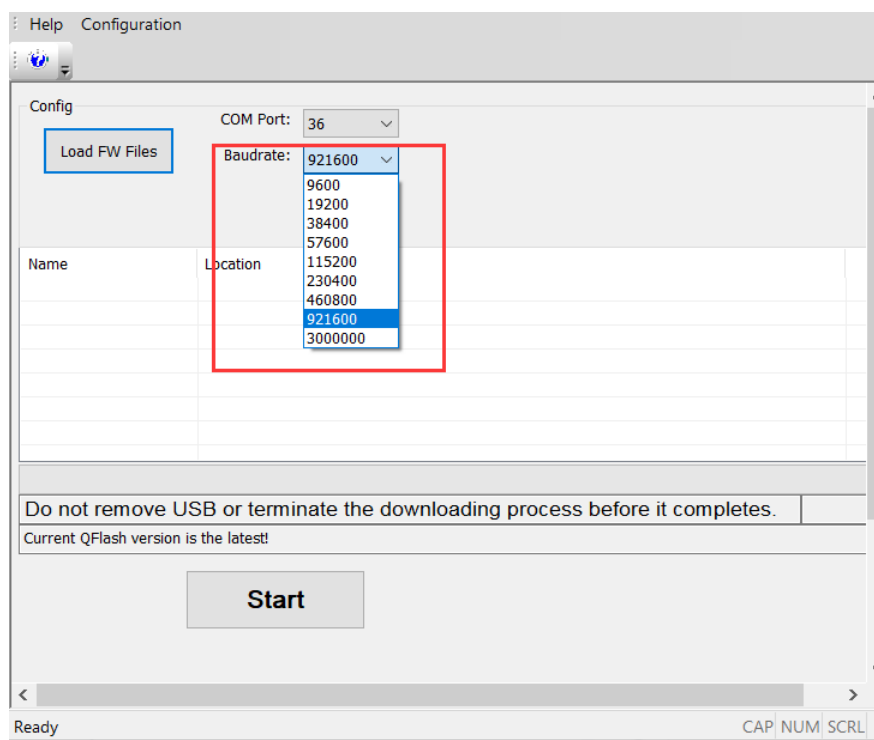


Figure 11: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.2.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 8: Summary of LTE-A Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
EG06	.mbn	
EG060W	.zip	
EG12	.mbn	Select <i>prog_nand_firehose_9x55.mbn</i> .
EG18	.mbn	
EM06	.mbn	
EM12-G	.mbn	
EP06	.mbn	

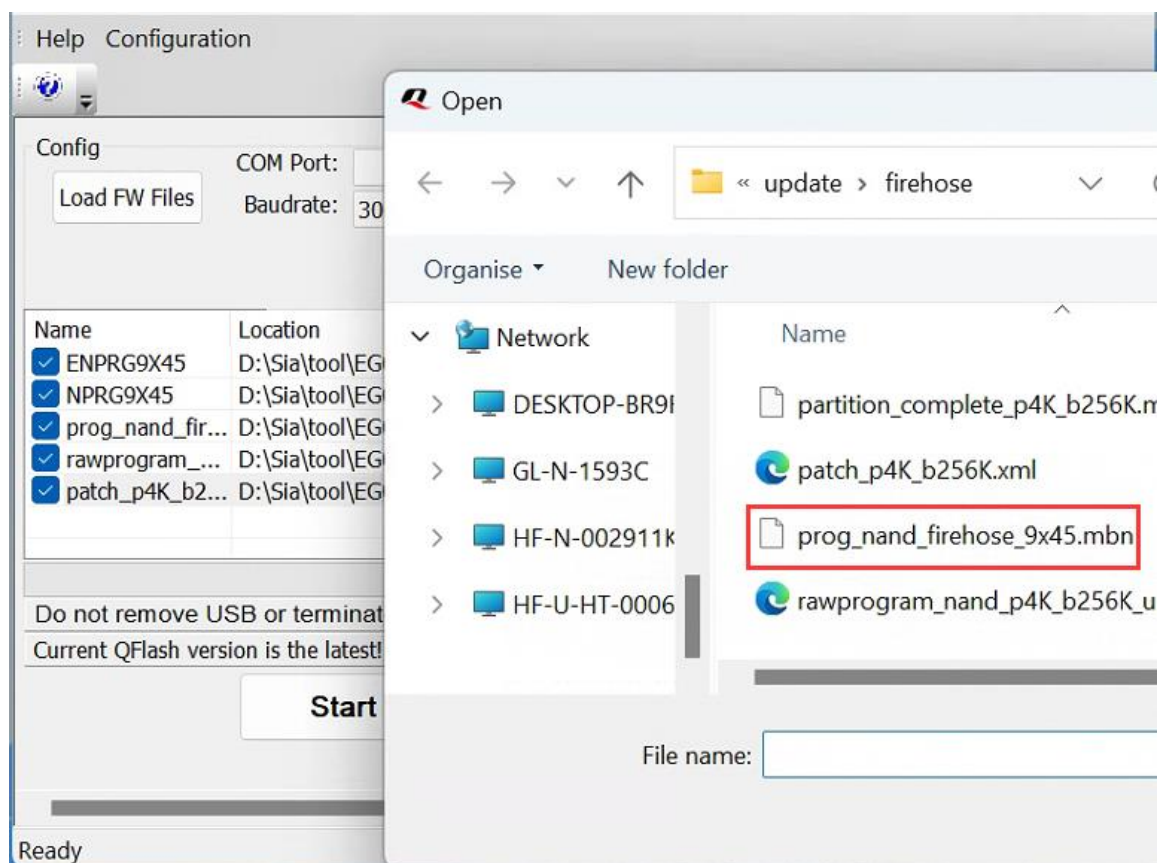


Figure 12: Select the File to Be Downloaded

2.2.3. Start Firmware Upgrade

Table 9: LTE-A Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
EG06	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EG060W	1. Select the .zip firmware package. 2. Click the “Start” button. 3. Power on the module manually. 4. The tool automatically selects Quectel USB Download Port and starts firmware upgrade.	After the firmware is upgraded successfully, close the tool before you power on the module. Otherwise, the tool will automatically start firmware upgrade again.
EG12	Click the “ Start ” button. And the tool	There is no “ Stop ” button while upgrading

	will start firmware upgrade after the module resets automatically.	firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EG18	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	There is no "Stop" button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EM06	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	There is no "Stop" button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EM12-G	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	There is no "Stop" button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EP06	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	There is no "Stop" button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.

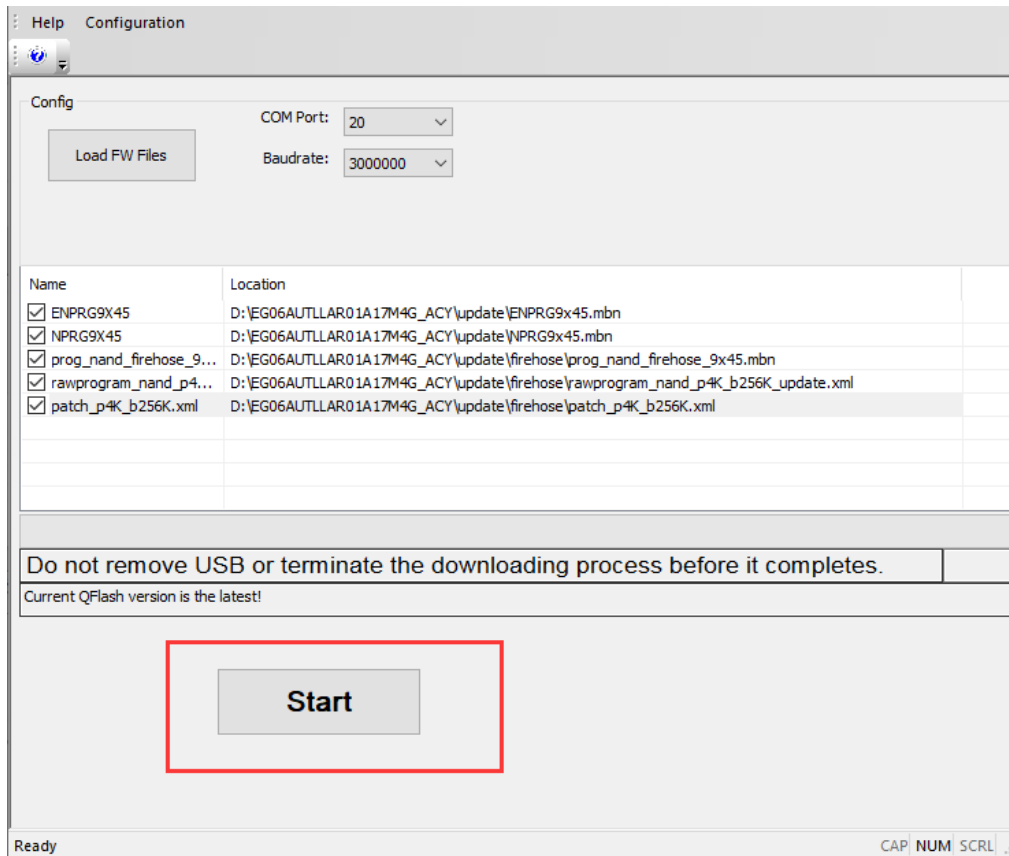


Figure 13: “Start” Button

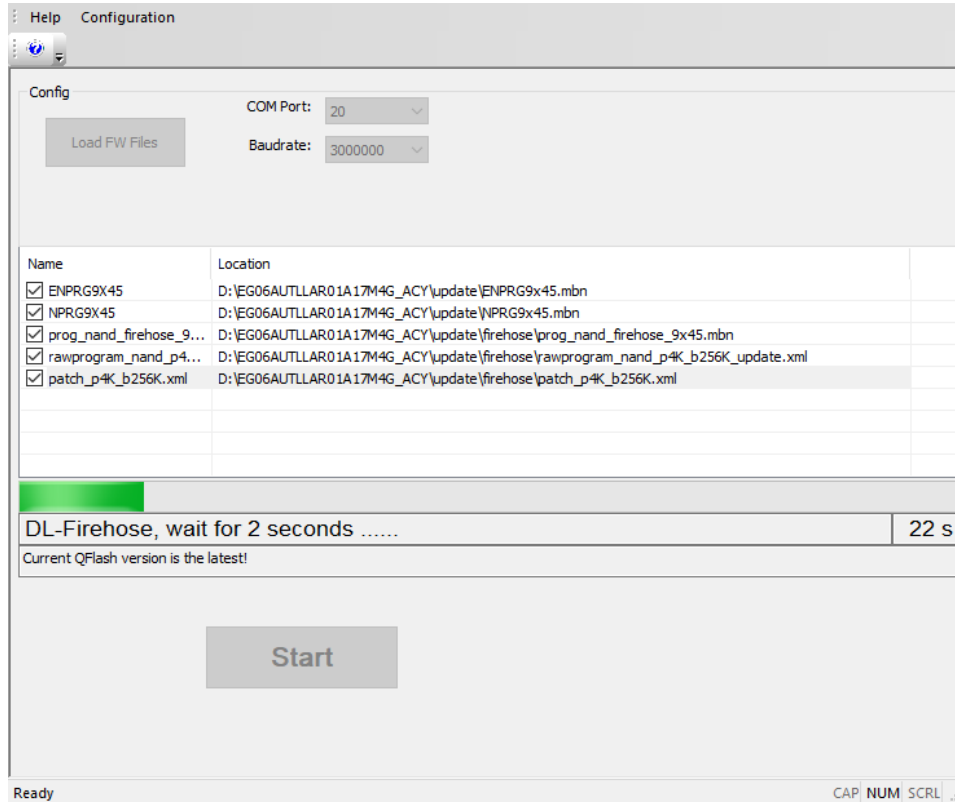


Figure 14: Start Firmware Upgrade Automatically After Clicking “Start” Button

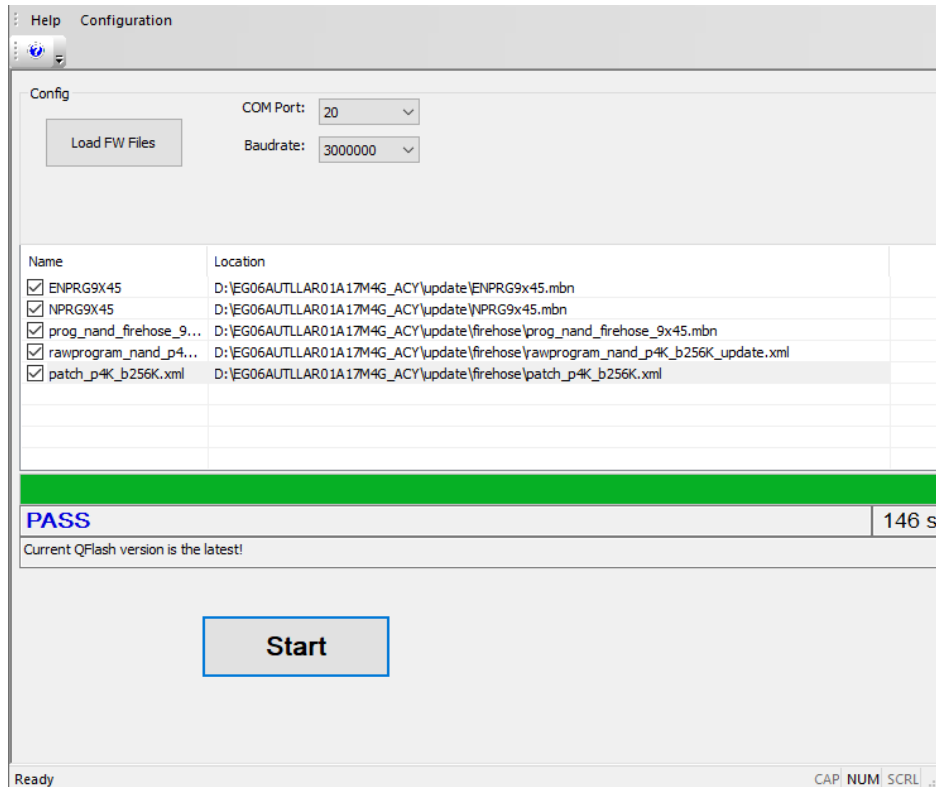


Figure 15: Firmware Upgraded Successfully

2.3. LTE Standard Modules

2.3.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

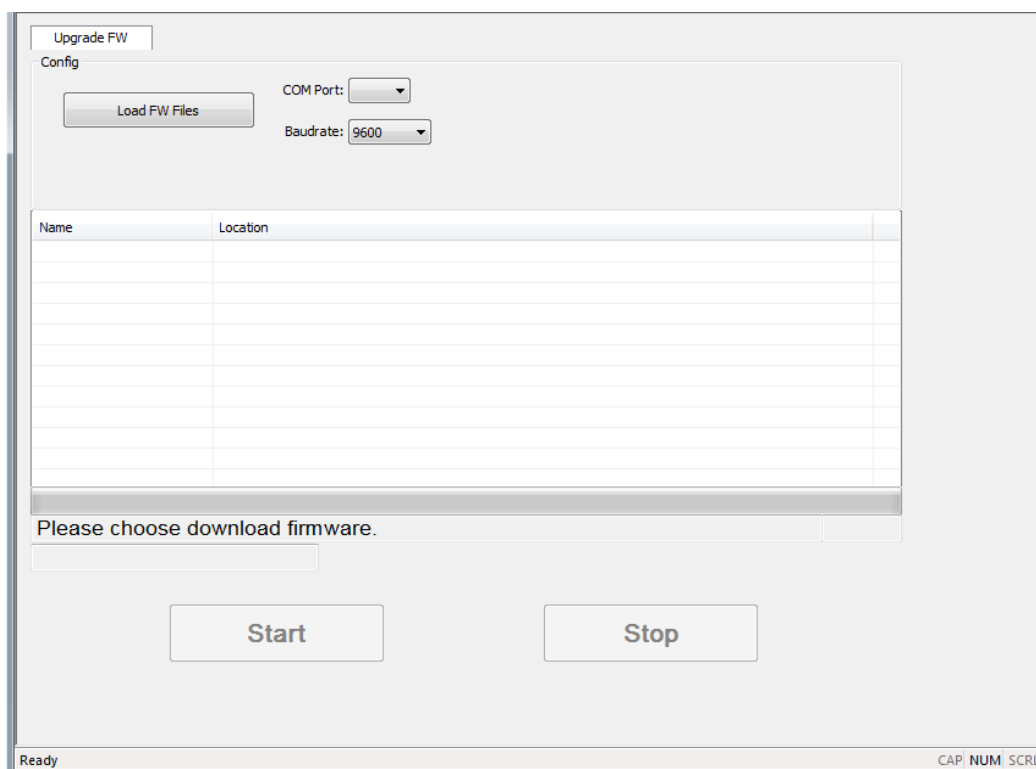


Figure 16: Main Interface of QFlash

2.3.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 10: Summary of LTE Standard Module Firmware Download Ports

Module	COM Port	Comment
EC20-CE	Quectel USB DM Port	
EC200A	Power on the module to automatically select Quectel USB Download Port for	

upgrade		
EC200N	Quectel USB AT Port /Quectel Download Port	1. - After the module is powered off, click “Load FW Files” to select the firmware package, and the tool information bar prompts “getting serial devices list...\n”. - If you use Quectel USB AT Port to download the firmware, after the module is powered on, click “Start” to start downloading;
EC200S	Quectel USB AT Port /Quectel Download Port	If you use Quectel Download Port to download the firmware, click “Start”, and the module will start downloading after it is powered on again. 2. You can use Quectel Download Port to upgrade the firmware by short-circuiting BOOT and PL_1V8 on the EVB.
EC200U	Quectel USB AT Port	1. After the “ Start ” button is clicked, the tool will automatically switch to the SPRD U2S Diag port to start the upgrade. After successful upgrade, the loaded port is still the SPRD U2S Diag port and you need to reset the module to reload the port. 2. You can also short-circuit BOOT and PL_1V8 to get the SPRD U2S Diag port loaded for upgrade.
EC21	Quectel USB DM Port	
EC25	Quectel USB DM Port	
EG21-G	Quectel USB DM Port	
EG25-G	Quectel USB DM Port	
EC600M	Quectel USB AT Port /Quectel Download Port	1. - After the module is powered off, click “Load FW Files” to select the firmware package, and the tool information bar prompts “getting serial devices list...\n”. - If you use Quectel USB AT Port to download the firmware, after the module is powered on, click “Start” to start downloading; - If you use Quectel Download Port to download the firmware, click “Start”, and

		the module will start downloading after it is powered on again.
		2. You can use Quectel Download Port to upgrade the firmware by short-circuiting BOOT and PL_1V8 on the EVB.
EG91	Quectel USB DM Port	
EG912Y	Quectel USB AT Port / Quectel Download Port	- After the module is powered off, click “Load FW Files” to select the firmware package, and the tool information bar prompts “getting serial devices list...\n”. - If you use Quectel USB AT Port to download the firmware, after the module is powered on, click “Start” to start downloading; If you use Quectel Download Port to download the firmware, click “Start”, and the module will start downloading after it is powered on again. - You can use Quectel Download Port to upgrade the firmware by short-circuiting BOOT and PL_1V8 on the EVB.
EG915Q	Quectel Download Port	Short-circuit VDD_EXT and USB_BOOT to get Quectel Download Port, and connect the USB cable to GNSS_UART to access the GPS port. Then choose COM port and GPS port respectively, as shown in Figure 17 .
EG95	Quectel USB DM Port	
EM05	Quectel USB DM Port	

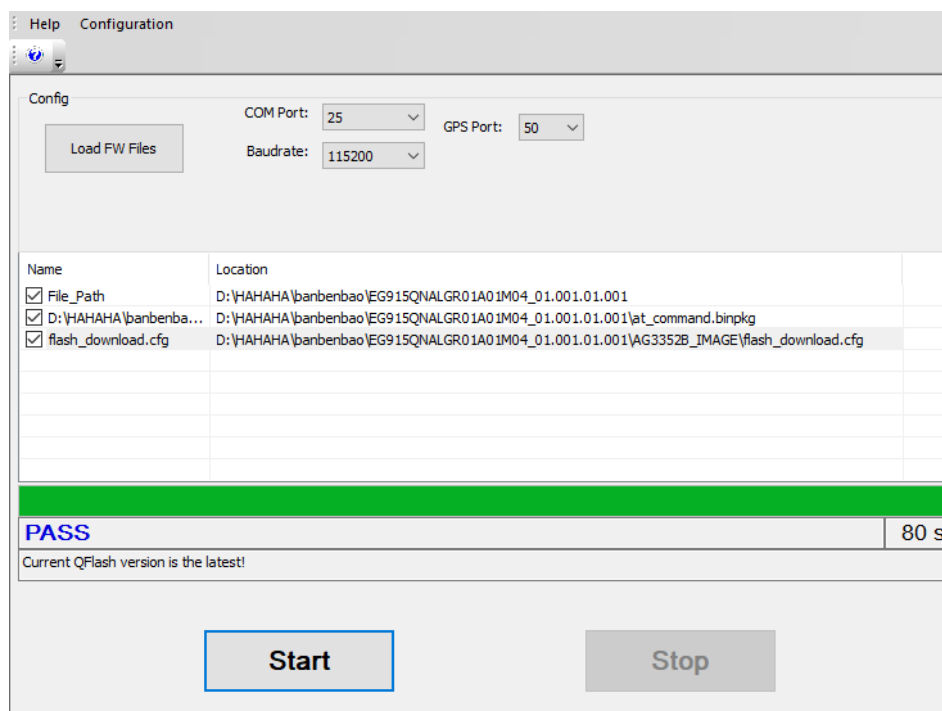


Figure 17: Select Port for EG915Q

Step 2: Click “COM Port” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

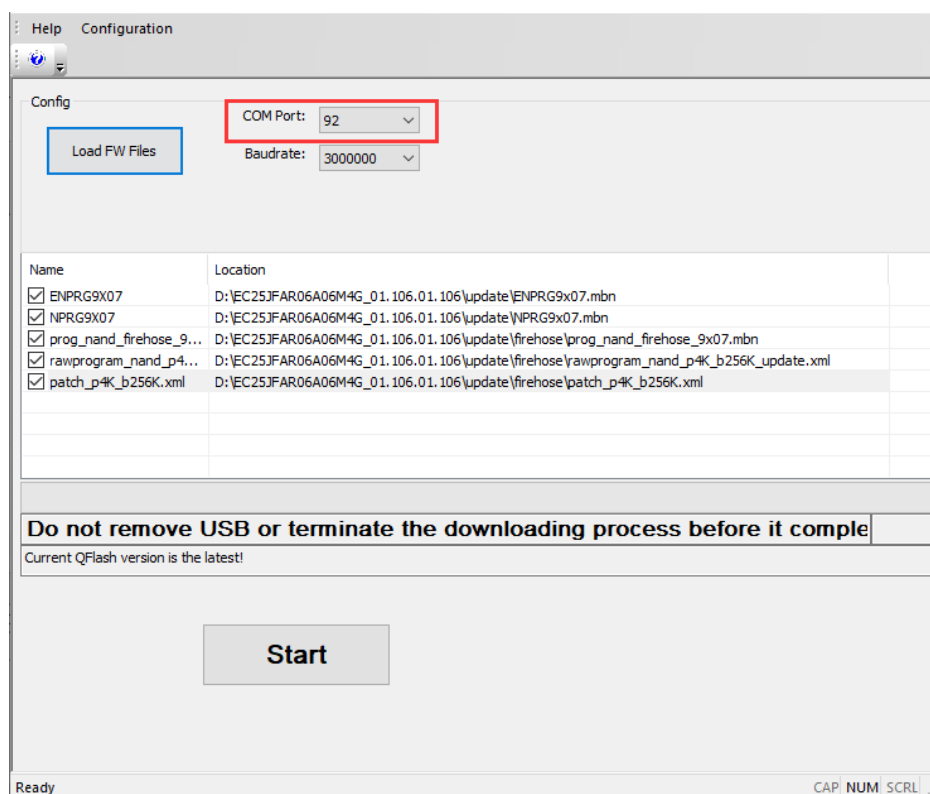


Figure 18: Select COM Port Number

2.3.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 11: Summary of LTE Standard Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
EC20-CE	460800	
EC200A	460800	
EC200N	460800	
EC200S	460800	
EC200U	460800	
EC21	460800	
EC25	460800	
EG21-G	460800	
EG25-G	460800	
EC600M	460800	
EG91	460800	
EG912Y	460800	
EG915Q	460800	
EG95	460800	
EM05	460800	

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

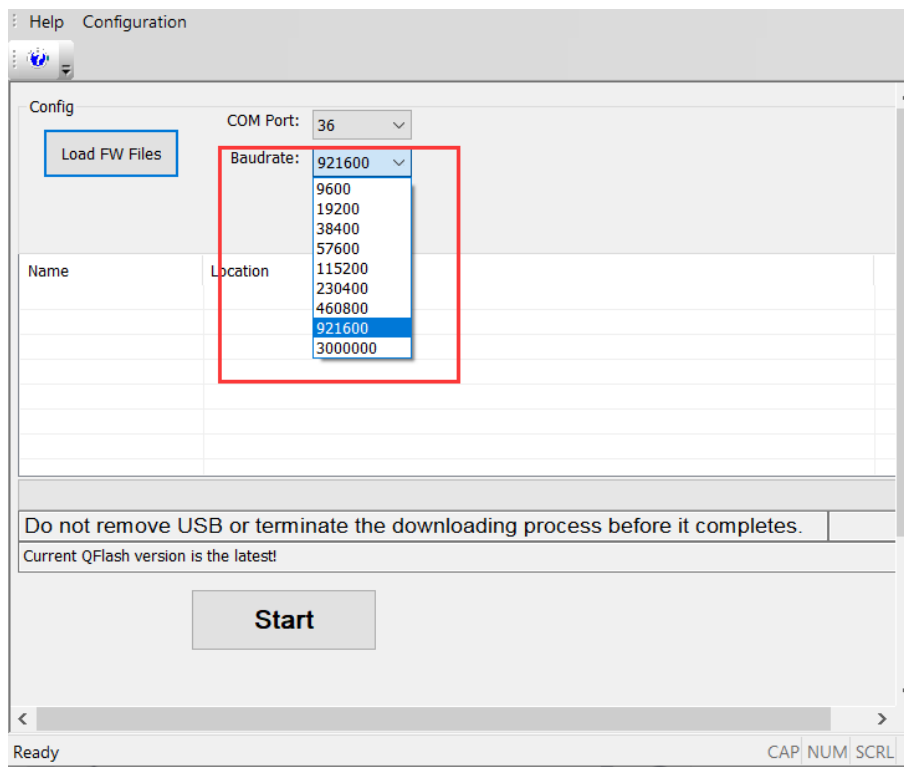


Figure 19: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.3.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 12: Summary of LTE Standard Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
EC20-CE	.mbn	Select <i>prog_nand_firehose_9x07.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x07.mbn</i> .
EC200A	.zip	
EC200N	.zip	
EC200S	.zip	
EC200U	.pac	
EC21	.mbn	Select <i>prog_nand_firehose_9x07.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x07.mbn</i> .
EC25	.mbn	Select <i>prog_nand_firehose_9x07.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x07.mbn</i> .
EG21-G	.mbn	Select <i>prog_nand_firehose_9x07.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x07.mbn</i> .
EG25-G	.mbn	Select <i>prog_nand_firehose_9x07.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x07.mbn</i> .
EC600M	.zip	
EG91	.mbn	
EG912Y	.zip	
EG915Q	.binpkg	
EG95	.mbn	Select <i>prog_nand_firehose_9x07.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x07.mbn</i> .
EM05	.mbn	

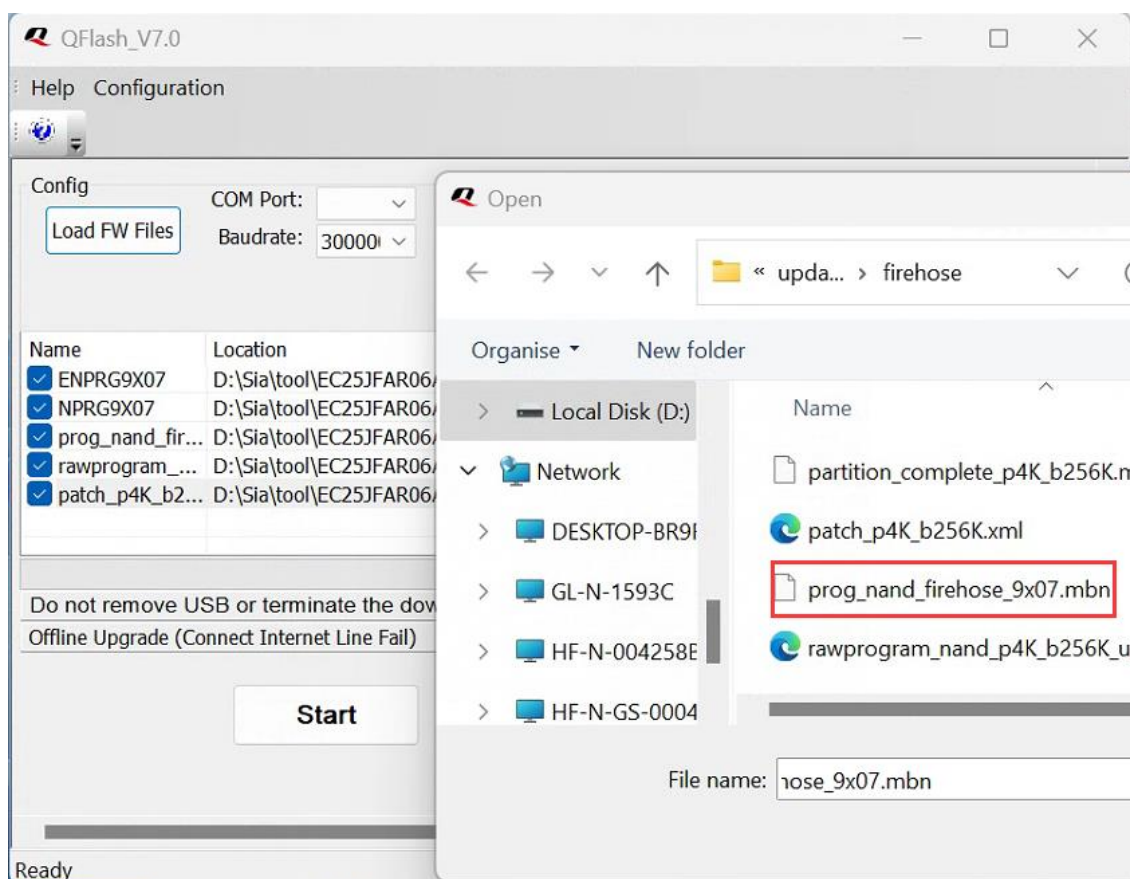


Figure 20: Select the File to Be Downloaded

2.3.3. Start Firmware Upgrade

Table 13: LTE Standard Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
EC20-CE	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EC200A	1. Select the .zip firmware package. 2. Click the “Start” button. 3. Power on the module manually. 4. The tool automatically selects Quectel USB Download Port and starts firmware upgrade.	After the firmware is upgraded successfully, close the tool before you power on the module. Otherwise, the tool will automatically start firmware upgrade again.

EC200N	● If you use Quectel USB AT Port to download the firmware, after the module is powered on, click “Start” to start downloading; ● If you use Quectel Download Port to download the firmware, click “Start”, and the module will start downloading after it is powered on again.	After the module is burned and restarted, if the firmware package needs to be switched, the module needs to be powered off before switching.
EC200S	1. If you use Quectel USB AT Port to download the firmware, after the module is powered on, click “Start” to start downloading; 2. If you use Quectel Download Port to download the firmware, click “Start”, and the module will start downloading after it is powered on again.	After the module is burned and restarted, if the firmware package needs to be switched, the module needs to be powered off before switching.
EC200U	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	After the module is rebooted after downloading the firmware, if you need to switch the firmware package, the module needs to be powered off before switching.
EC21	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EC25	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EG21-G	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EG25-G	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the

		downloading process before the upgrading is completed.
EC600M	● If you use Quectel USB AT Port to download the firmware, after the module is powered on, click “Start” to start downloading; ● If you use Quectel Download Port to download the firmware, click “Start”, and the module will start downloading after it is powered on again.	After the module is burned and restarted, if the firmware package needs to be switched, the module needs to be powered off before switching.
EG91	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EG912Y	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	After the module is burned and restarted, if the firmware package needs to be switched, the module needs to be powered off before switching.
EG915Q	1. Click the “Start” button. 2. When the tool prompts “REBOOT CHIP”, press the “GNSS_RST” button on module TE-A to start GNSS firmware upgrade. 3. After GNSS firmware completes upgrade, reset the module, and then the tool will start firmware upgrade automatically.	
EG95	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
EM05	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.

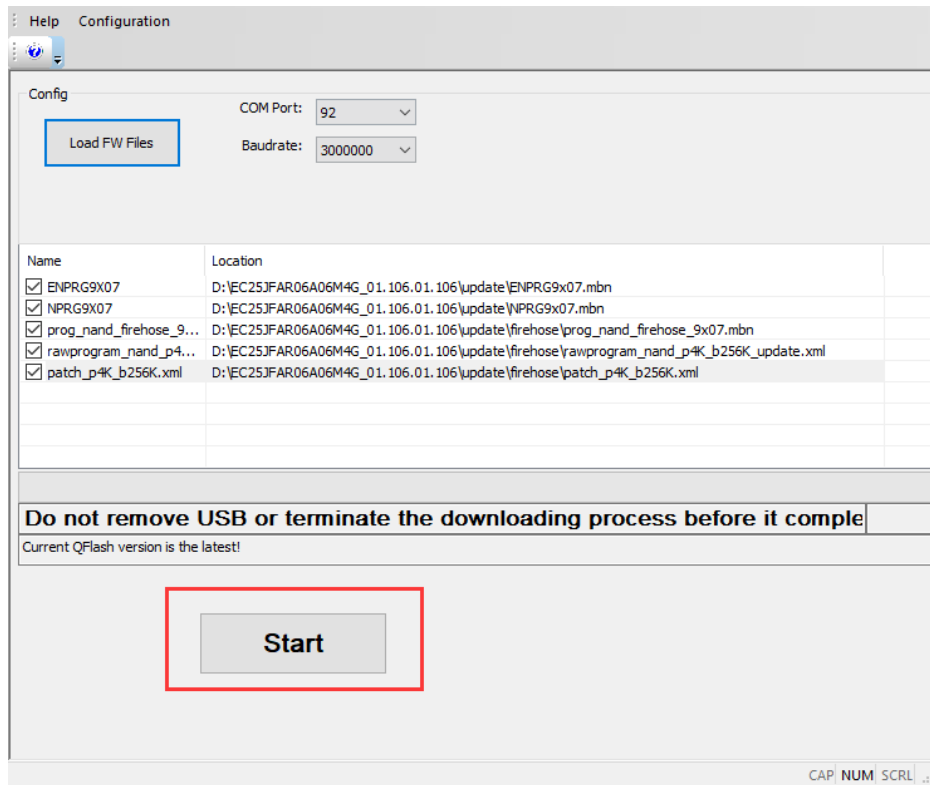


Figure 21: “Start” Button

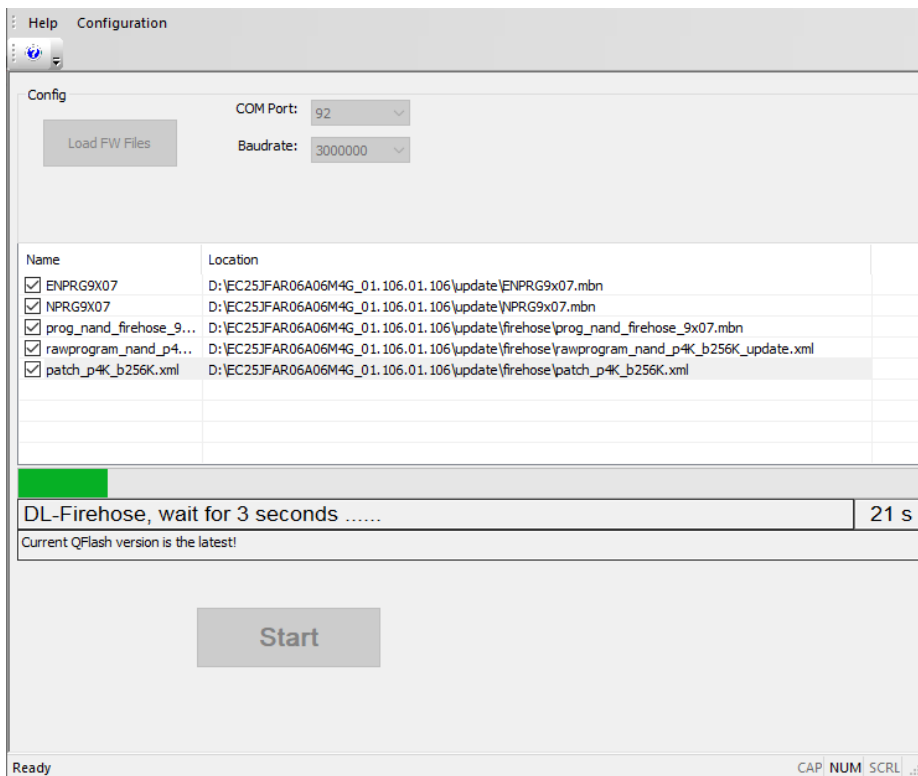


Figure 22: Start Firmware Upgrade Automatically After Clicking “Start” Button

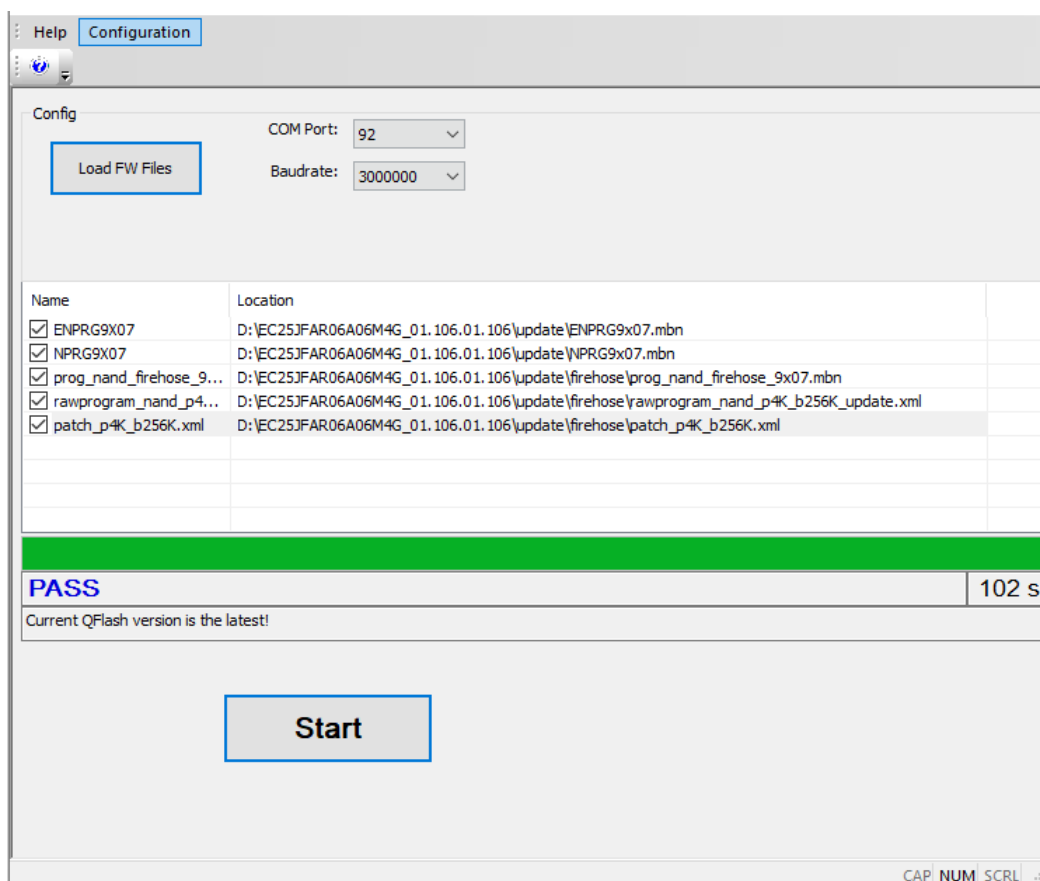


Figure 23: Firmware Upgraded Successfully

2.4. Automotive Modules

2.4.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

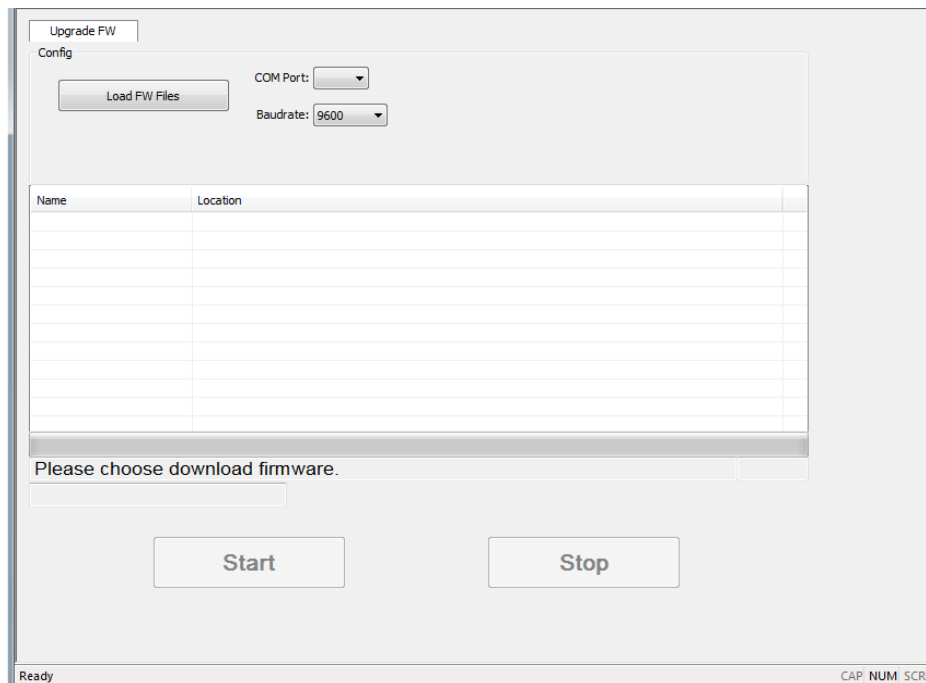


Figure 24: Main Interface of QFlash

2.4.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 14: Summary of Automotive Module Firmware Download Ports

Module	COM Port	Comment
AG15	Quectel USB DM Port	
AG215S	Quectel USB DM Port	
AG35	Quectel USB DM Port	

AG509M	Port selection is unnecessary	Turn on the USB_BOOT switch, and then only the Android ADB interface will be loaded. Therefore, port selection is unnecessary for firmware upgrade with QFlash.
AG519M	Port selection is unnecessary	
AG520R	Quectel USB DM Port	
AG521R	Quectel USB DM Port	
AG525R	Quectel USB DM Port	
AG529R	Quectel USB DM Port	
AG550Q	Quectel USB DM Port	
AG551Q	Quectel USB DM Port	
AG552Q	Quectel USB DM Port	
AG553Q	Quectel USB DM Port	
AG590H	Quectel USB DM Port	

Step 2: Click “**COM Port**” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

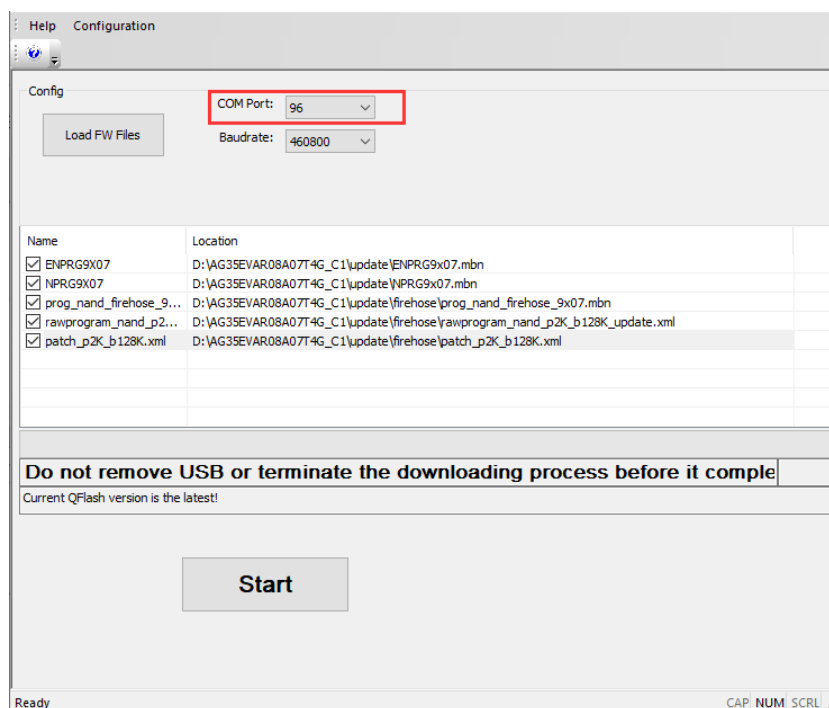


Figure 25: Select COM Port Number

2.4.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 15: Summary of Automotive Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
AG15	460800	
AG215S	460800	
AG35	460800	
AG509M	460800	
AG519M	460800	
AG520R	460800	
AG521R	460800	
AG525R	460800	
AG529R	460800	
AG550Q	460800	
AG551Q	460800	
AG552Q	460800	
AG553Q	460800	
AG590H	460800	

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

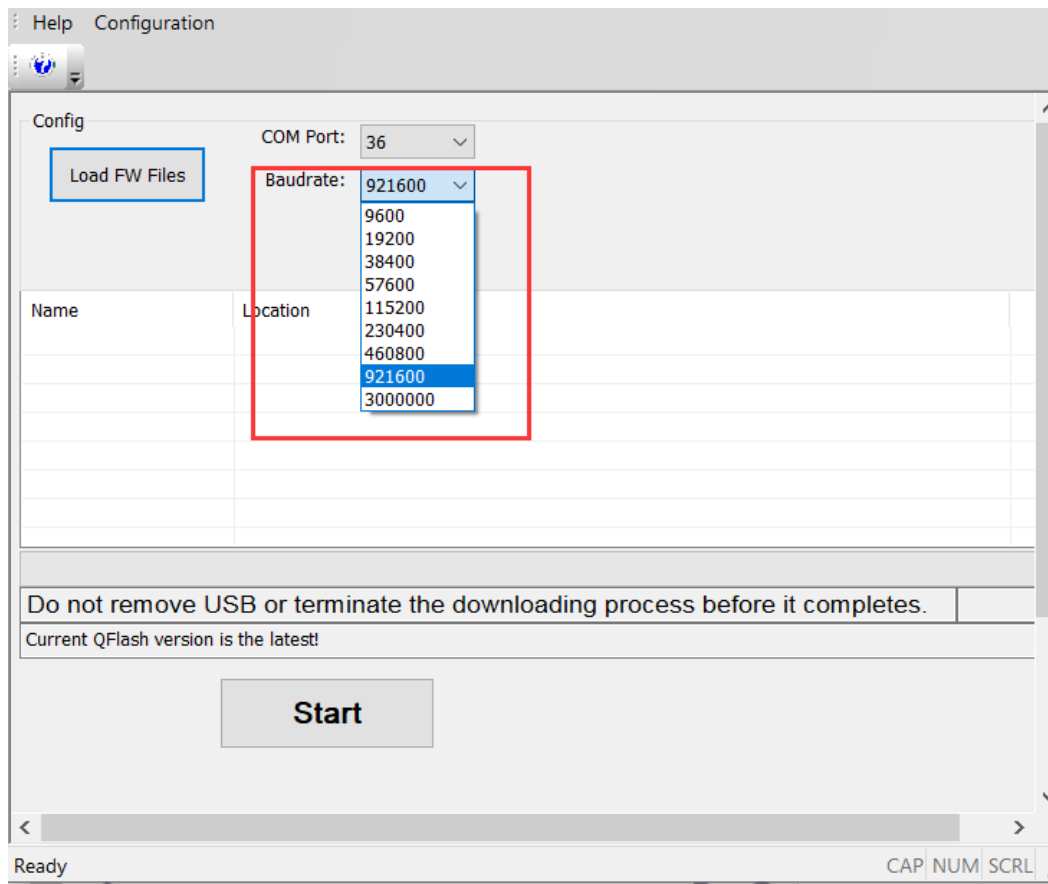


Figure 26: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.4.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 16: Summary of Automotive Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
AG15	.elf	
AG215S	.elf	Select <i>prog_firehose_ddr_ag215s</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_ddr_ag215s</i> .
AG35	.elf	Select <i>prog_nand_firehose_9x07.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x07.mbn</i> .
AG509M	.py	
AG519M	.py	
AG520R	.elf	Select <i>prog_firehose_sdx24.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_sdx24.mbn</i> .
AG521R	.elf	
AG525R	.elf	
AG529R	.elf	Select <i>prog_firehose_sdx24.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_sdx24.mbn</i> .
AG550Q	.elf	
AG551Q	.elf	Select <i>prog_firehose_sdx55.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_sdx55.mbn</i> .
AG552Q	.elf	
AG553Q	.elf	
AG590H	.mbn	

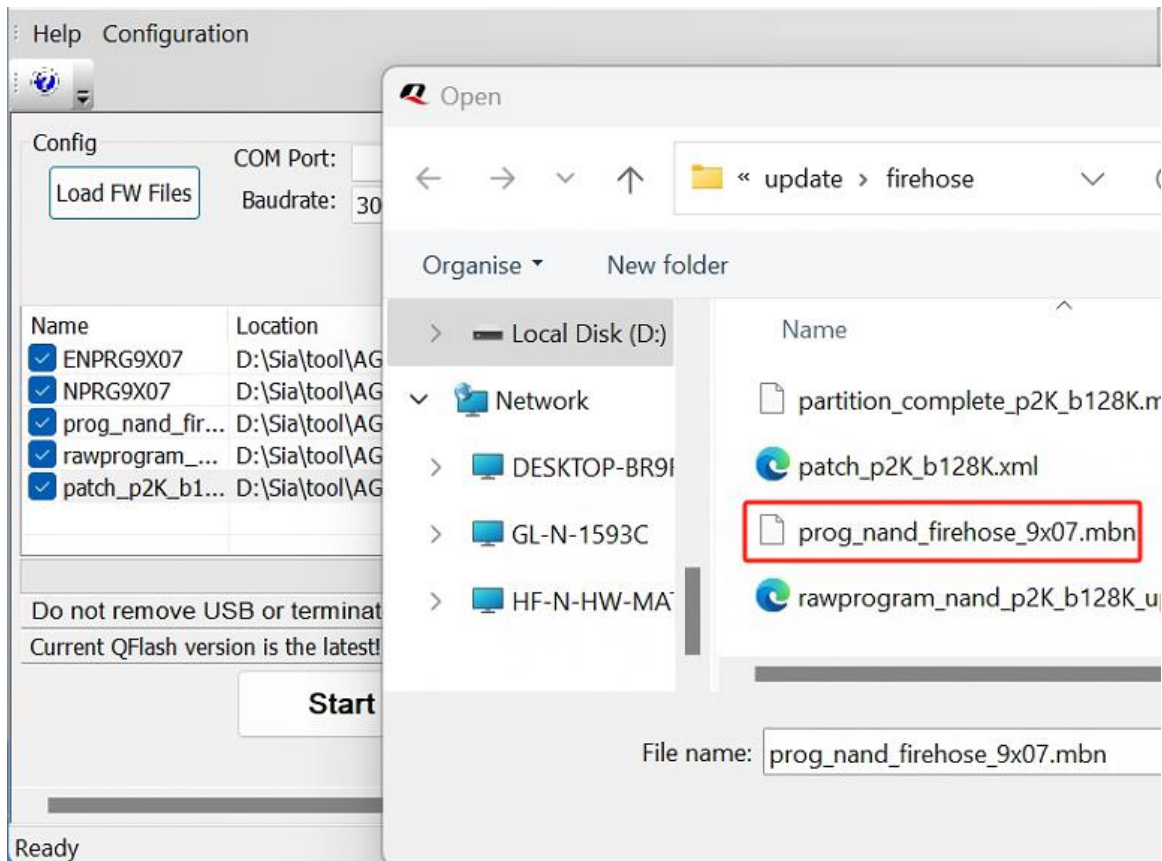


Figure 27: Select the File to Be Downloaded

2.4.3. Start Firmware Upgrade

Table 17: Automotive Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
AG15	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG215S	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG35	Click the “Start” button. And the tool will	There is no “Stop” button while upgrading

	start firmware upgrade after the module resets automatically.	firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG509M	1. Turn off the module. 2. Click the “Start” button, and then turn on the module within 10 seconds. 3. The tool starts firmware upgrade automatically.	Only supports firmware upgrading on 64-bit operating system.
AG519M	1. Turn off the module. 2. Click the “Start” button, and then turn on the module within 10 seconds. 3. The tool starts firmware upgrade automatically.	Only supports firmware upgrading on 64-bit operating system.
AG520R	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG521R	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG525R	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG529R	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG550Q	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT

		remove the USB or terminate the downloading process before the upgrading is completed.
AG551Q	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG552Q	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG553Q	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “ Stop ” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
AG590H	Click the “ Start ” button. And the tool will start firmware upgrade after the module resets automatically.	

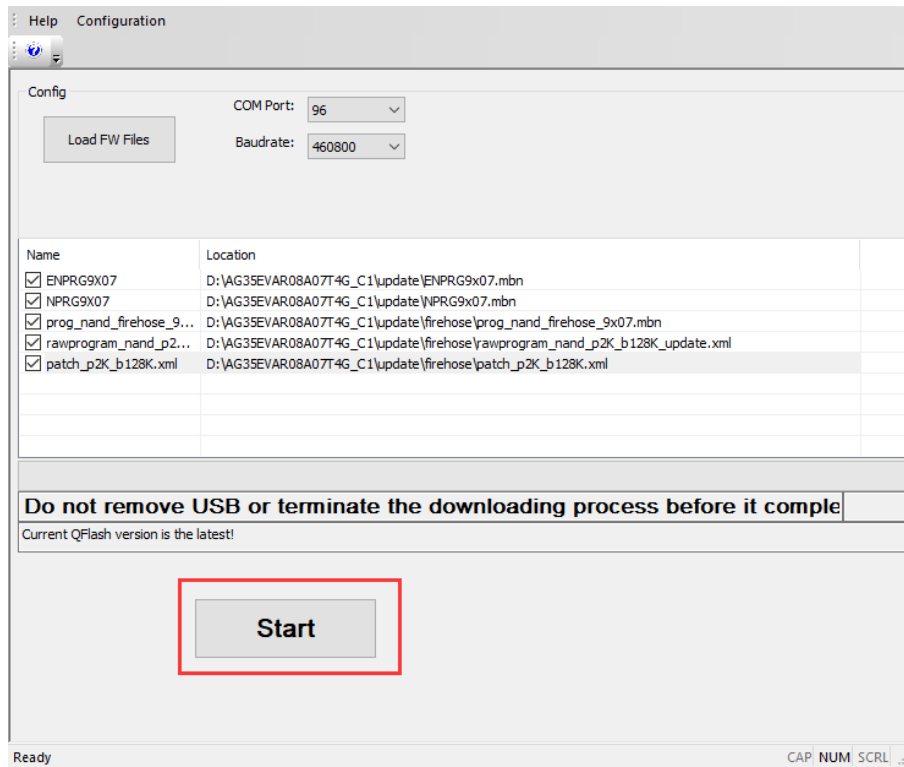


Figure 28: “Start” Button

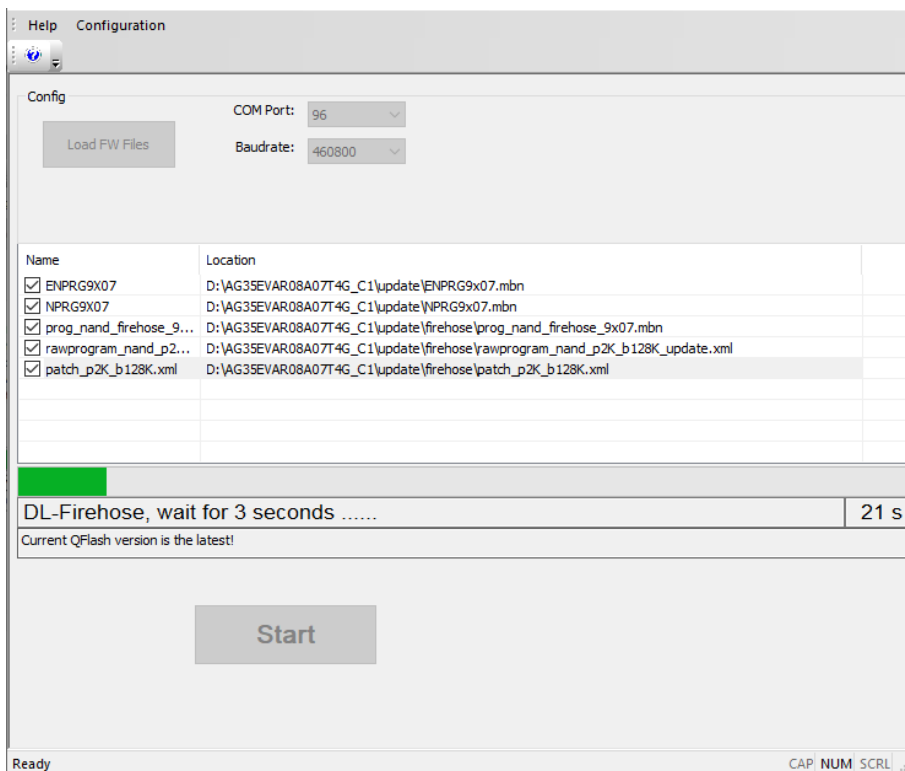


Figure 29: Start Firmware Upgrade Automatically After Clicking “Start” Button

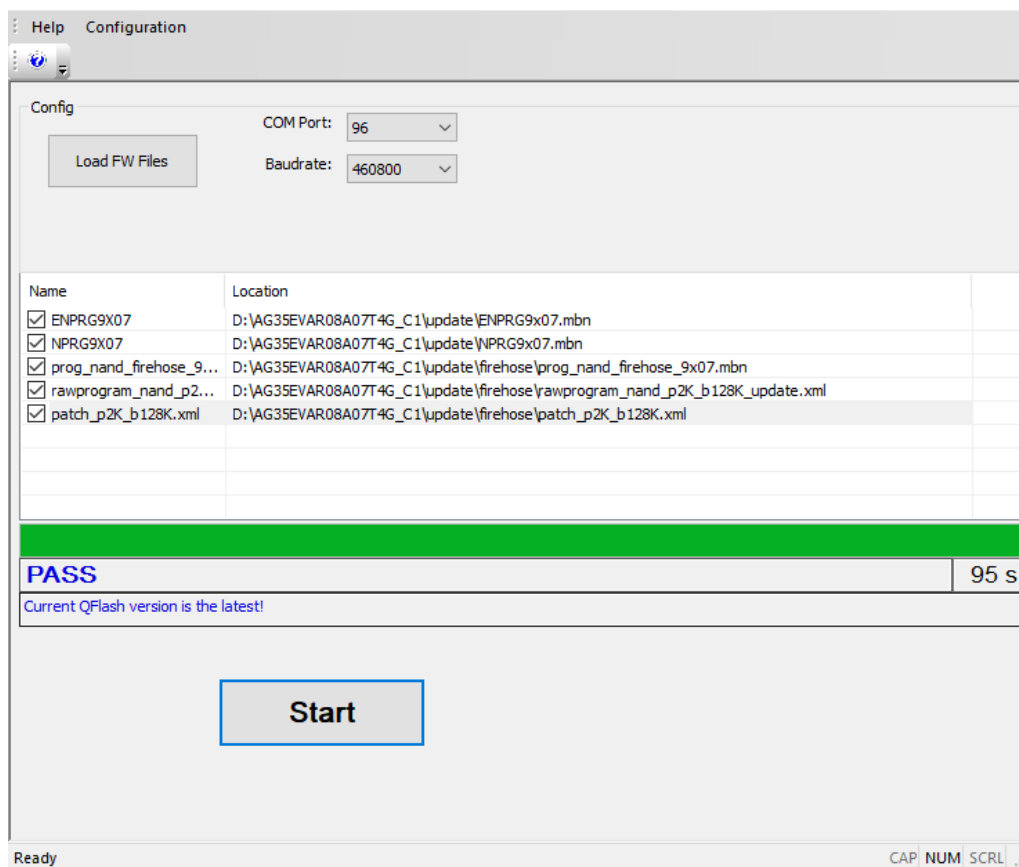


Figure 30: Firmware Upgraded Successfully

2.5. Smart Modules

2.5.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

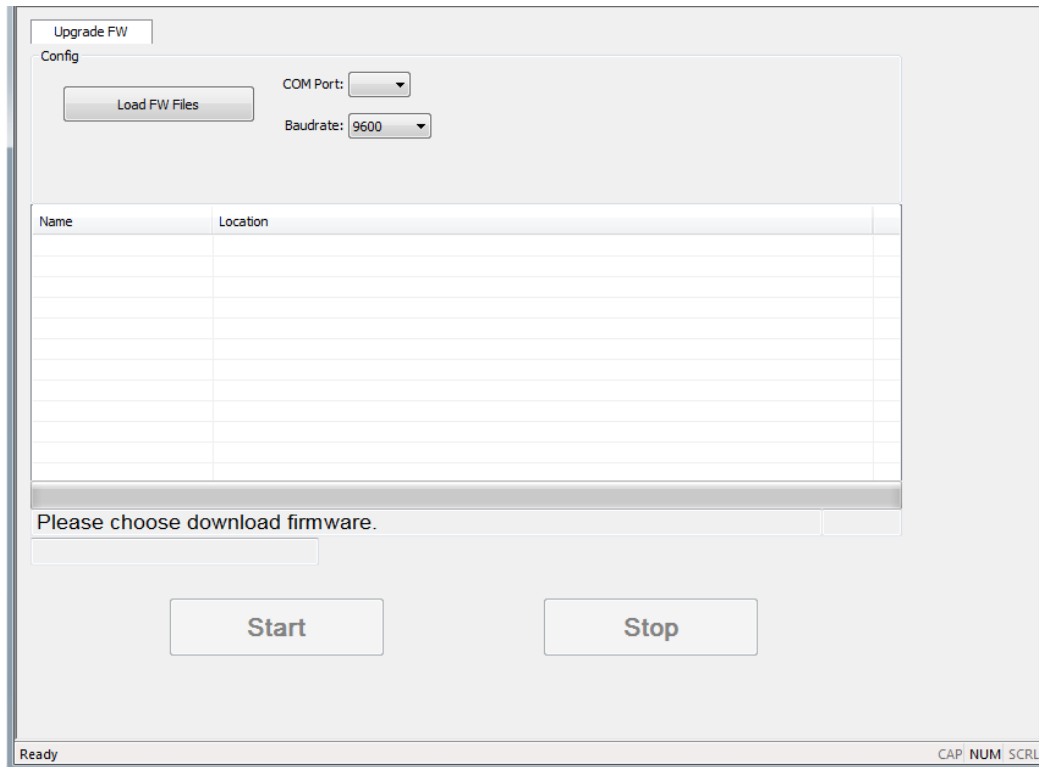


Figure 31: Main Interface of QFlash

2.5.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 18: Summary of Smart Module Firmware Download Ports

Module	COM Port	Comment
SC20	HS-USB Diagnostics 9091	
SC20-AX	HS-USB QDLoader 9008	Press the “ BOOT ” button on the EVB board. After powering on the module, the download port can be obtained.

SC66	HS-USB Diagnostics 9091			
SC200E	HS-USB Diagnostics 9091			
SC200L	SPRD U2S Diag	Send AT+QDOWNLOAD=1 to obtain the SPRD U2S Diag port for firmware upgrade		
SC668S	HS-USB Diagnostics 9091			
SG368Z	DL Port(s) Automatically	Detected	After connecting the module to the PC, " Rockusb Device " appears in the device manager, and the tool will automatically scan the port.	
SG520B	HS-USB Diagnostics 90DB			
SG560D	HS-USB Diagnostics 9091			
SG865W	Quectel USB DM Port			
SG885G	HS-USB Android DIAG 901F			

Step 2: Click “**COM Port**” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

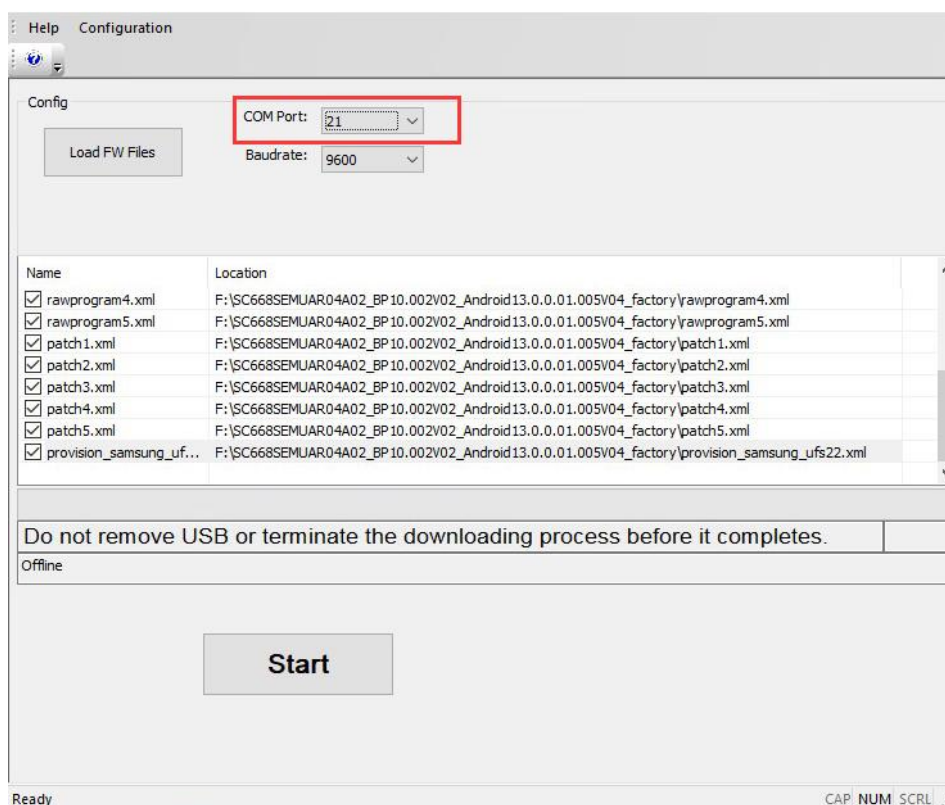


Figure 32: Select COM Port Number

2.5.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 19: Summary of Smart Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
SC20	460800	
SC20-AX	460800	
SC66	460800	
SC200E	460800	
SC200L	460800	
SC668S	460800	
SG368Z	460800	
SG520B	460800	
SG560D	460800	
SG865W	460800	
SG885G	460800	

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

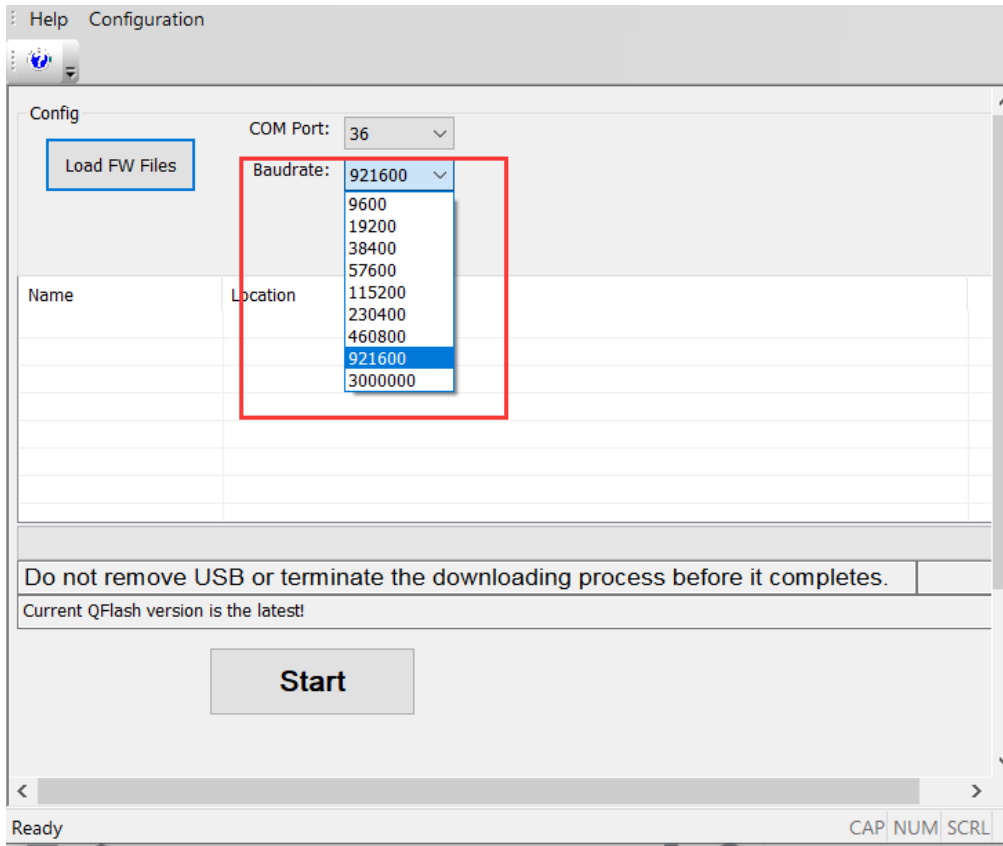


Figure 33: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.5.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 20: Summary of Smart Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
SC20	.elf	Select <i>prog_emmc_firehose_8909_ddr.mbn</i> .
SC20-AX	.mbn	
SC66	.elf	Select <i>prog_emmc_ufs_firehose_Sdm660_ddr.elf</i> .
SC200E	.elf	Select <i>prog_firehose_Qcm2290_ddr.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_Qcm2290_ddr.elf</i> .
SC200L	.pac	
SC668S	.elf	Select <i>prog_firehose_Qcm6125_ddr.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_Qcm6125_ddr.elf</i> .
SG368Z	fw.roc	
SG520B	.elf	Select <i>XXXX_4490_XX.melf</i> . For QuecOpen solution, the firmware file also needs to be named <i>XXXX_4490_XX.melf</i> .
SG560D	.elf	Select <i>prog_firehose_Qcm6490_ddr.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_Qcm6490_ddr.elf</i> .
SG865W	.elf	Select <i>prog_firehose_8250_ddr.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_8250_ddr.elf</i> .
SG885G	.elf	Select <i>xbl_s_devprg_Qcm8550_ns.melf</i> . For QuecOpen solution, the firmware file also needs to be named <i>xbl_s_devprg_Qcm8550_ns.melf</i> .

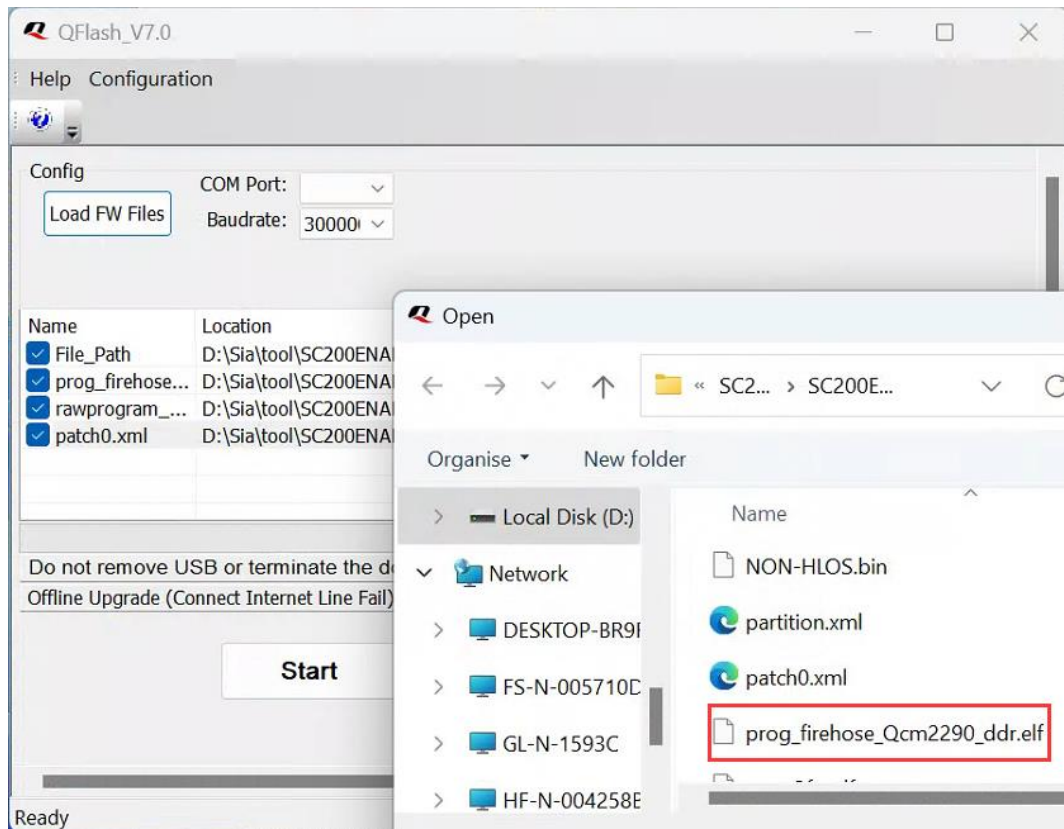


Figure 34: Select the File to Be Downloaded

2.5.3. Start Firmware Upgrade

Table 21: Smart Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
SC20	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
SC20-AX	1. Press the “BOOT” button on the EVB board to make the module enter download mode. 2. Click the “Start” button. And the tool will start firmware upgrade automatically.	
SC66	Click the “Start” button. And the tool will start firmware upgrade after the module	There is no “Stop” button while upgrading firmware. In this case, it is

	resets automatically.	NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
SC200E	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	There is no "Stop" button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
SC200L	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	
SC668S	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	
SG368Z	1. Power on the module. 2. Click the "Start" button to start automatic firmware upgrade.	
SG520B	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	
SG560D	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	
SG865W	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	
SG885G	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	

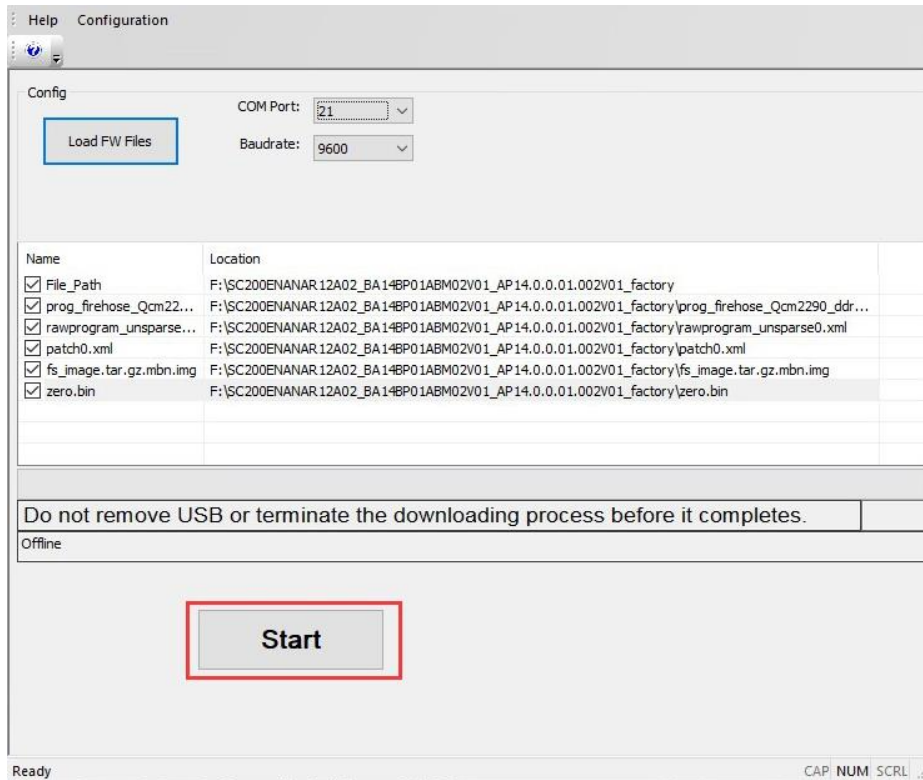


Figure 35: “Start” Button

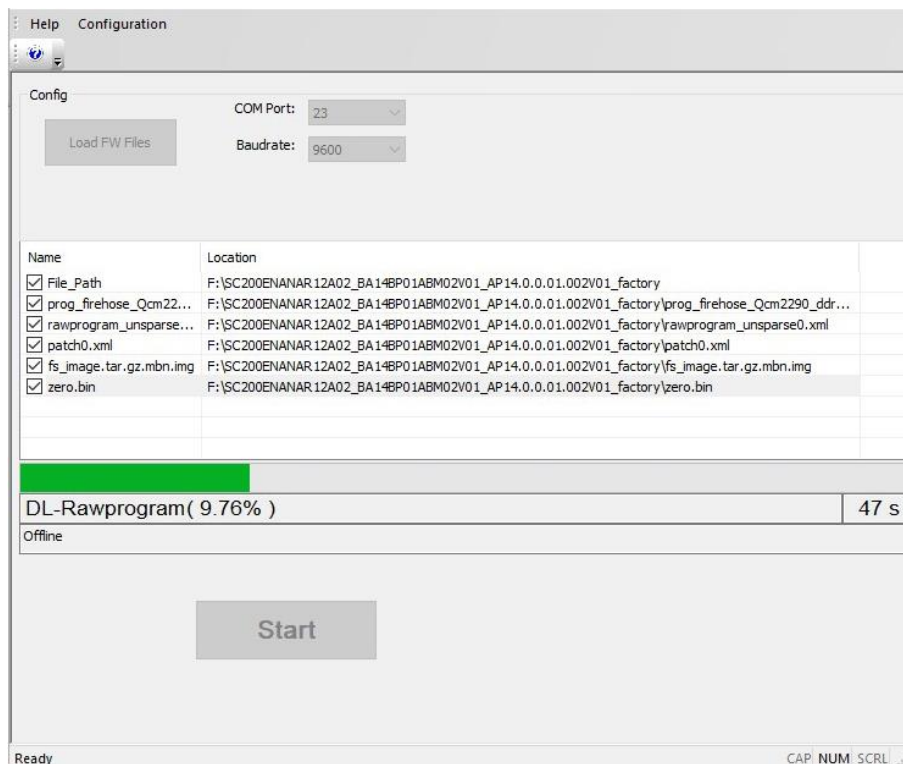


Figure 36: Start Firmware Upgrade Automatically After Clicking “Start” Button

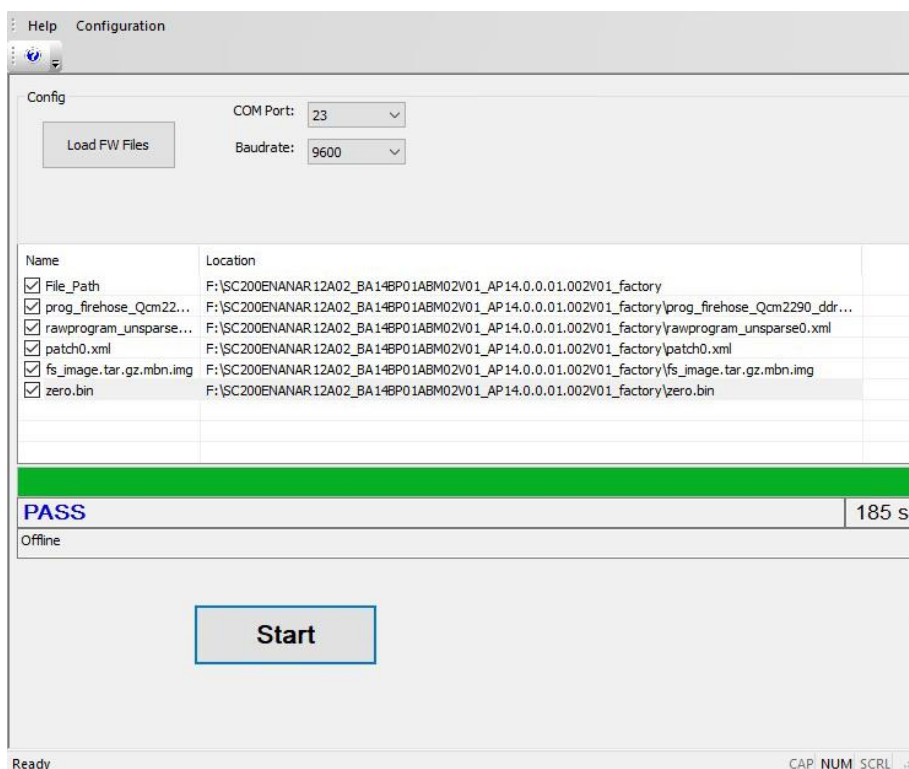


Figure 37: Firmware Upgraded Successfully

2.6. LPWA Modules

2.6.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

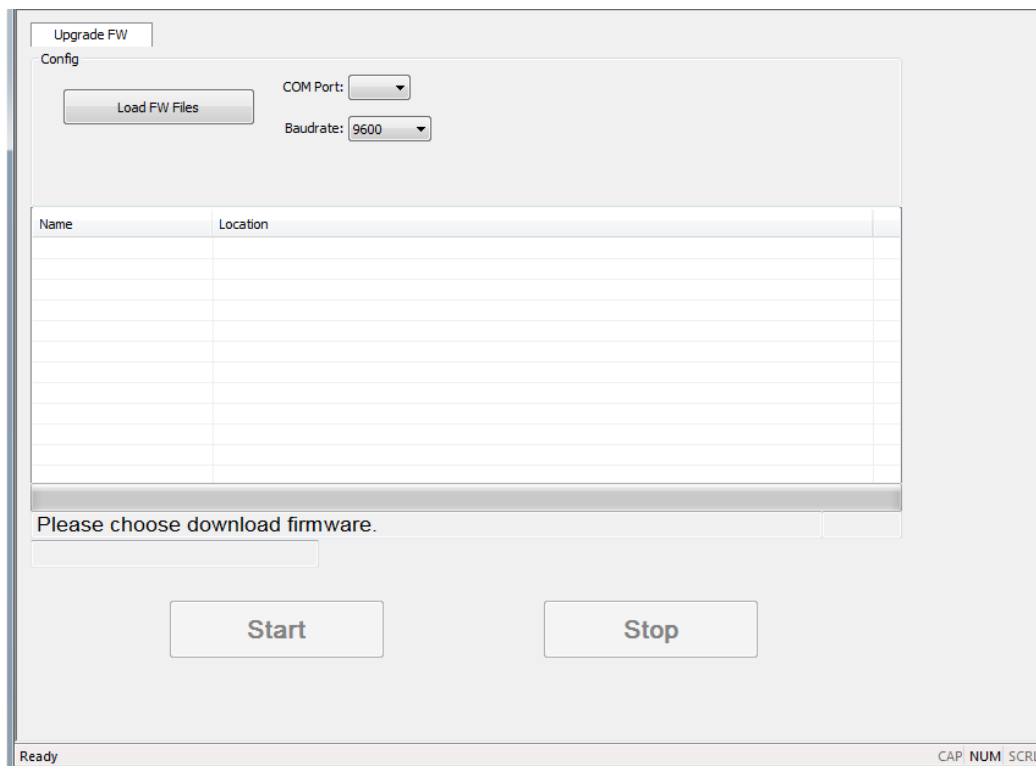


Figure 38: Main Interface of QFlash

2.6.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 22: Summary of LPWA Module Firmware Download Ports

Module	COM Port	Comment
BC660K	Quectel USB Serial Port	The USB Serial Port (the second loaded port) is used to upgrade firmware.
BC680Z	Quectel USB Serial Port	The USB Serial Port (the third loaded port) is used to upgrade firmware.

BC92	Debug Port (USB Serial Converter B)	
BC950K	WCH USB-SERIAL CH A	
BG77	Quectel USB DM Port	
BG770A	Silicon Labs CP210x USB to UART Bridge	
BG95	Quectel USB DM Port	
BG950A	Silicon Labs CP210x USB to UART Bridge	
BG951A	Silicon Labs CP210x USB to UART Bridge	1. The module firmware is upgraded through UART_CLI and UART_GNSS ports, whose names are both displayed as "Silicon Labs CP210x USB to UART Bridge" after the module is connected to the PC. 2. Click "COM Port" drop-down list and select the UART_CLI port number; then click "GPS Port" drop-down list and select the UART_GNSS port number, as shown in Figure 39.
BG955A	Silicon Labs CP210x USB to UART Bridge	
BG950S	WCH USB-SERIAL Ch C	The module firmware is upgraded through the third USB-SERIAL port which is displayed as "WCH USB-SERIAL Ch C".
BG96	Quectel USB DM Port	
BC660K	Quectel USB Serial Port	The USB Serial Port (the second loaded port) is used to upgrade firmware.

Help Configuration

Config

Load FW Files

COM Port: 7

Baudrate: 3000000

FlowControl: RTS_CTS

GPS Port: 10

Name	Location
☒ File_Path	F:\BG951\BG951AGLAAR01A03
☒ fw.alt	F:\BG951\BG951AGLAAR01A03\fw.alt
☒ RK_03_00	F:\BG951\BG951AGLAAR01A03\RK_03_00
☒ use_bin	F:\BG951\BG951AGLAAR01A03\USER_BIN
☒ Ebin1	F:\BG951\BG951AGLAAR01A03\cxd5605AGF_20296_55c6322_186LBGEF.ebin1
☒ Ebin2	F:\BG951\BG951AGLAAR01A03\cxd5605AGF_20296_55c6322_186LBGEF.ebin2
☒ Ebin3	F:\BG951\BG951AGLAAR01A03\cxd5605AGF_20296_55c6322_186LBGEF.ebin3
☒ Ebin4	F:\BG951\BG951AGLAAR01A03\cxd5605AGF_20296_55c6322_186LBGEF.ebin4

PASS

Current QFlash version is the latest!

264 s

Start

Ready

CAP: NUM SCRL

Figure 39: Select Port for BG951A

Step 2: Click “COM Port” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

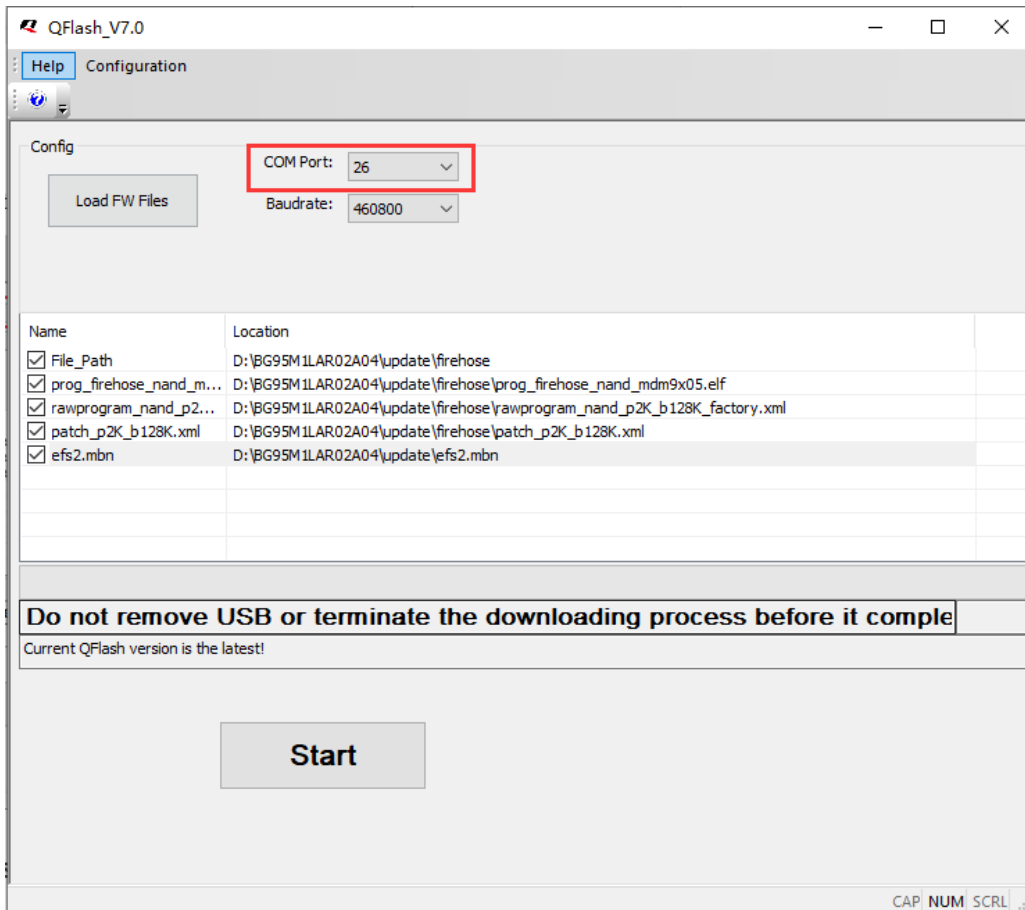


Figure 40: Select COM Port Number

2.6.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 23: Summary of LPWA Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
BC660K	921600	
BC680Z	921600	
BC92	9600	
BC950K	921600	
BG77	460800	
BG770A	3000000 (with flow control, recommended)	

	921600 (without flow control)
BG95	460800
BG950A	3000000 (with flow control, recommended) 921600 (without flow control)
BG951A	3000000 (with flow control, recommended) 921600 (without flow control)
BG955A	3000000 (with flow control, recommended) 921600 (without flow control)
BG950S	3000000 (with flow control, recommended) 921600 (without flow control)
BG96	460800

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

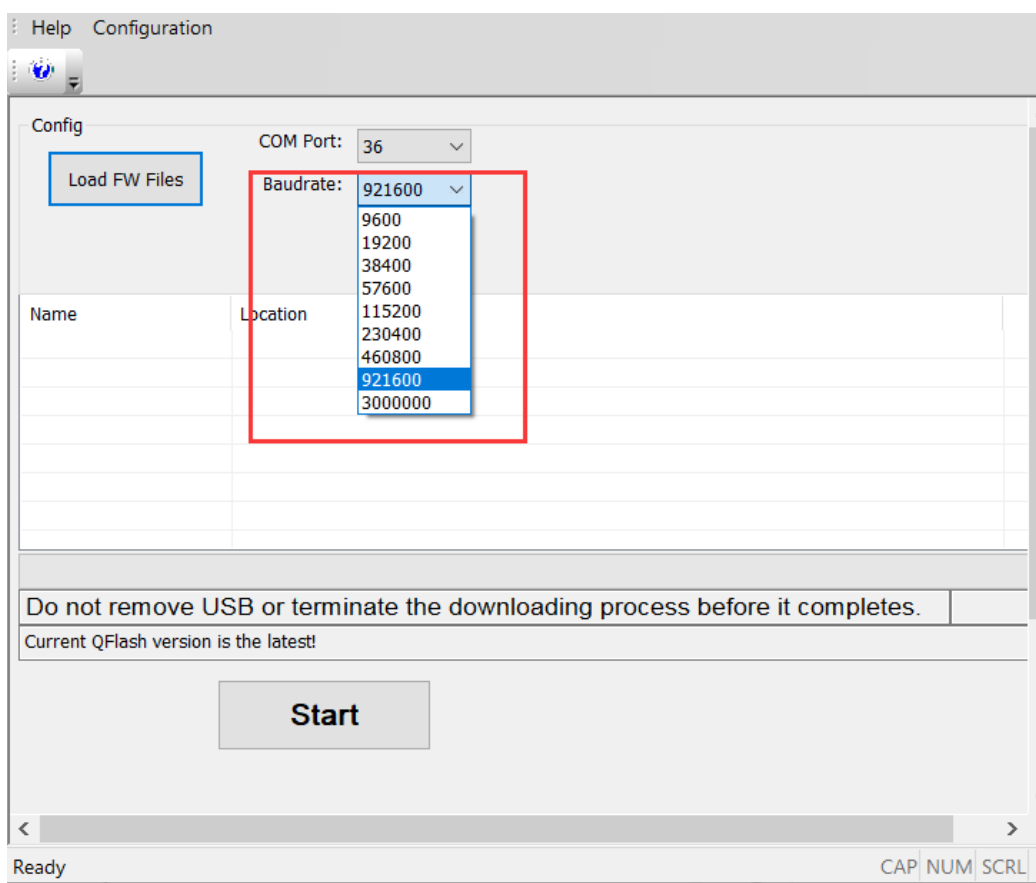


Figure 41: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.6.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 24: Summary of LPWA Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
BC660K	.bin	
BC680Z	.mimgx	
BC92	.lod	
BC950K	.bin	
BG77	.elf	
BG770A	fw.alt	
BG95	.elf	Select <i>prog_firehose_nand_mdm9x05.elf</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_firehose_nand_mdm9x05.elf</i> .
BG950A	fw.alt	
BG951A	fw.alt	
BG955A	fw.alt	
BG950S	fw.alt	
BG96	.mbn	Select <i>prog_nand_firehose_9x06.mbn</i> . For QuecOpen solution, the firmware file also needs to be named <i>prog_nand_firehose_9x06.mbn</i> .

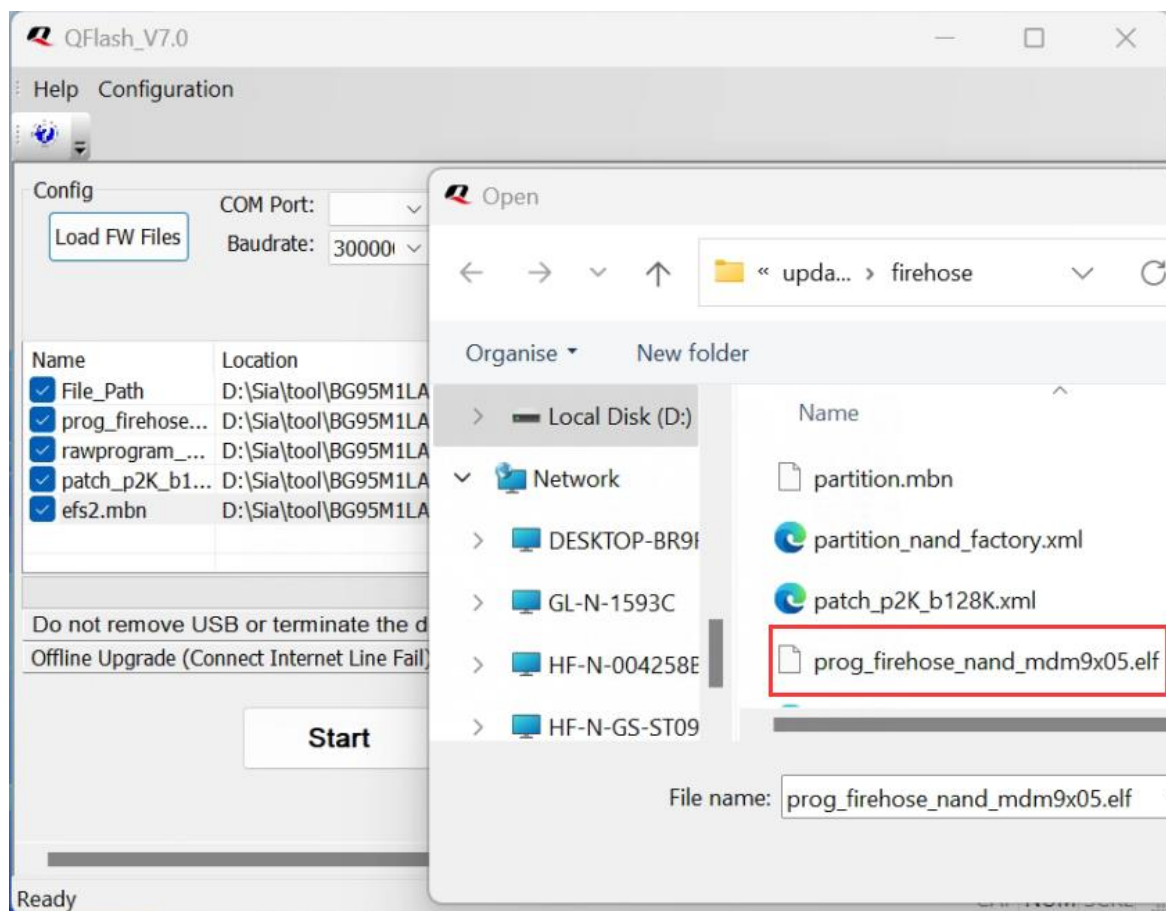


Figure 42: Select the File to Be Downloaded

2.6.3. Start Firmware Upgrade

Table 25: LPWA Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
BC660K	1. Press and hold the “BOOT” button to make the module enter download mode while resetting the module by pressing the “RESET” button on TE-B. 2. Click the “Start” button to start automatic firmware upgrade.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
BC680Z	1. Click the “Start” button. 2. Execute “AT+NRB” to restart the module or press the button to wake up the module when the tool prompts “Enter download mode...”.	

	3. The tool starts firmware upgrade automatically.	
BC92	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	There is no “Stop” button while upgrading firmware. In this case, it is NOT permitted to stop the upgrading process, and do NOT remove the USB or terminate the downloading process before the upgrading is completed.
BC950K	1. Click the “Start” button. 2. Reset the module manually when the tool prompts “Probe”. 3. The tool starts firmware upgrade automatically.	
BG77	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
BG770A	1. Turn off the module. 2. Click the “Start” button, and then turn on the module within 10 seconds. 3. The tool starts firmware upgrade automatically.	
BG95	Click the “Start” button. And the tool will start firmware upgrade after the module resets automatically.	
BG950A	Option 1: 1. Turn off the module. 2. Click the “Start” button, and then turn on the module within 10 seconds. 3. The tool starts firmware upgrade automatically. Option 2: 1. Power on the module. 2. Manually reset the module according to the tool prompt. 3. The tool will automatically start firmware upgrade.	
BG951A	Option 1: 1. Turn off the module. 2. Click the “Start” button, and then turn on the module within 10 seconds. 3. The tool starts firmware upgrade automatically. Option 2:	It is necessary to enable the GNSS function and make it enter the emergency download mode before the upgrading.

-
1. Power on the module.
 2. Manually reset the module according to the tool prompt.
 3. The tool will automatically start firmware upgrade.
-

Option 1:

1. Turn off the module.
2. Click the “**Start**” button, and then turn on the module within 10 seconds.
3. The tool starts firmware upgrade automatically.

BG955A

Option 2:

1. Power on the module.
 2. Manually reset the module according to the tool prompt.
 3. The tool will automatically start firmware upgrade.
-

1. Click the “**Start**” button.
 2. Press the reset button when the tool prompts “**please reset**” to reset the module.
 3. The tool starts firmware upgrade automatically.
-

BG950S

Click the “**Start**” button. And the tool will start firmware upgrade after the module resets automatically.

BG96

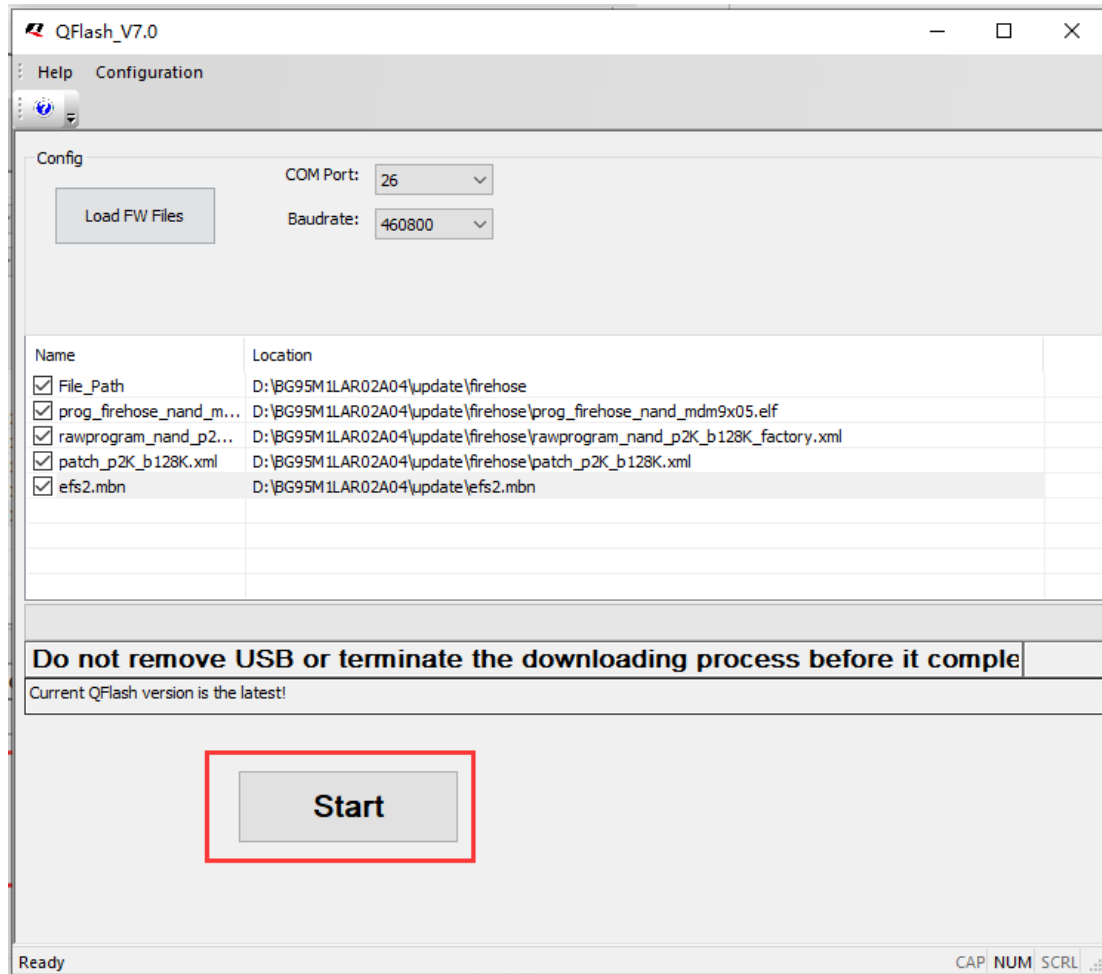


Figure 43: “Start” Button

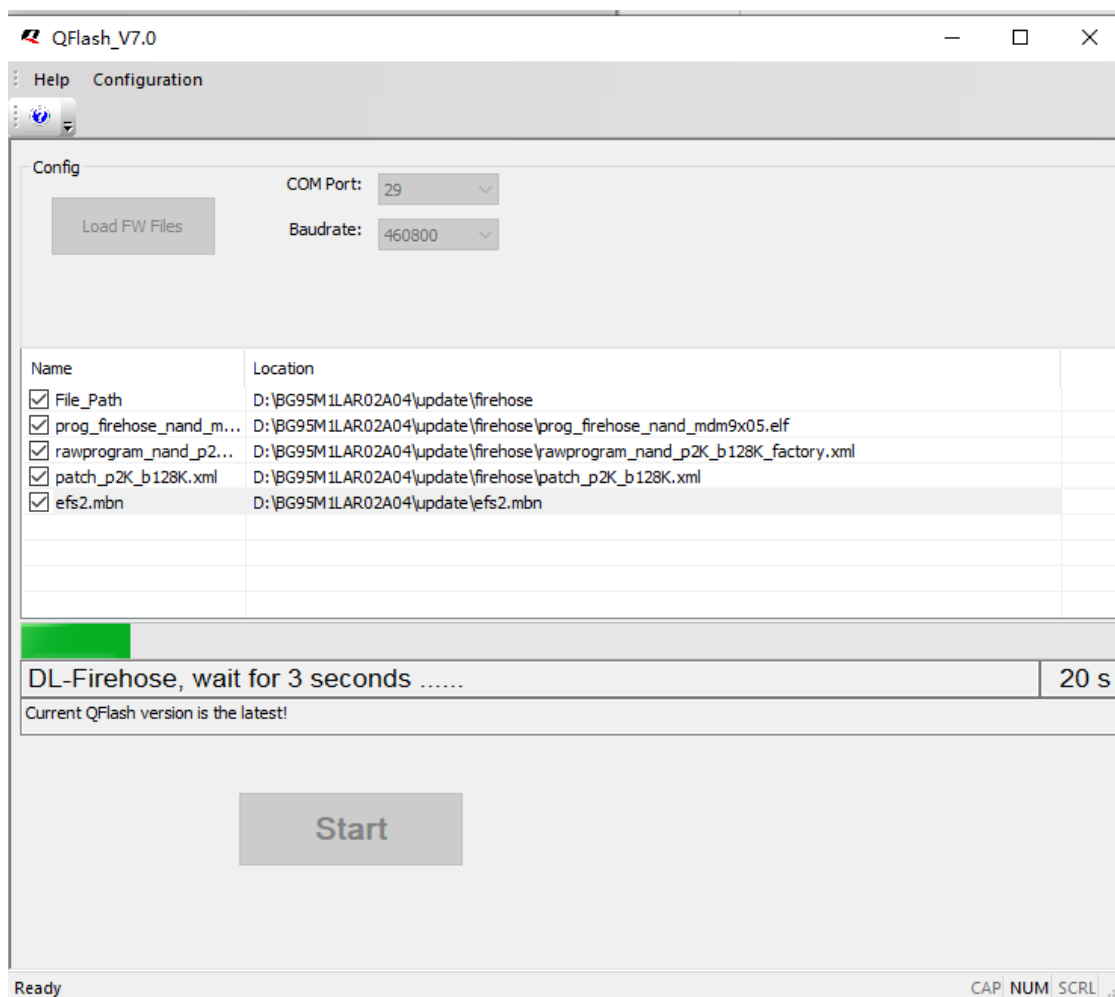


Figure 44: Start Firmware Upgrade Automatically After Clicking “Start” Button

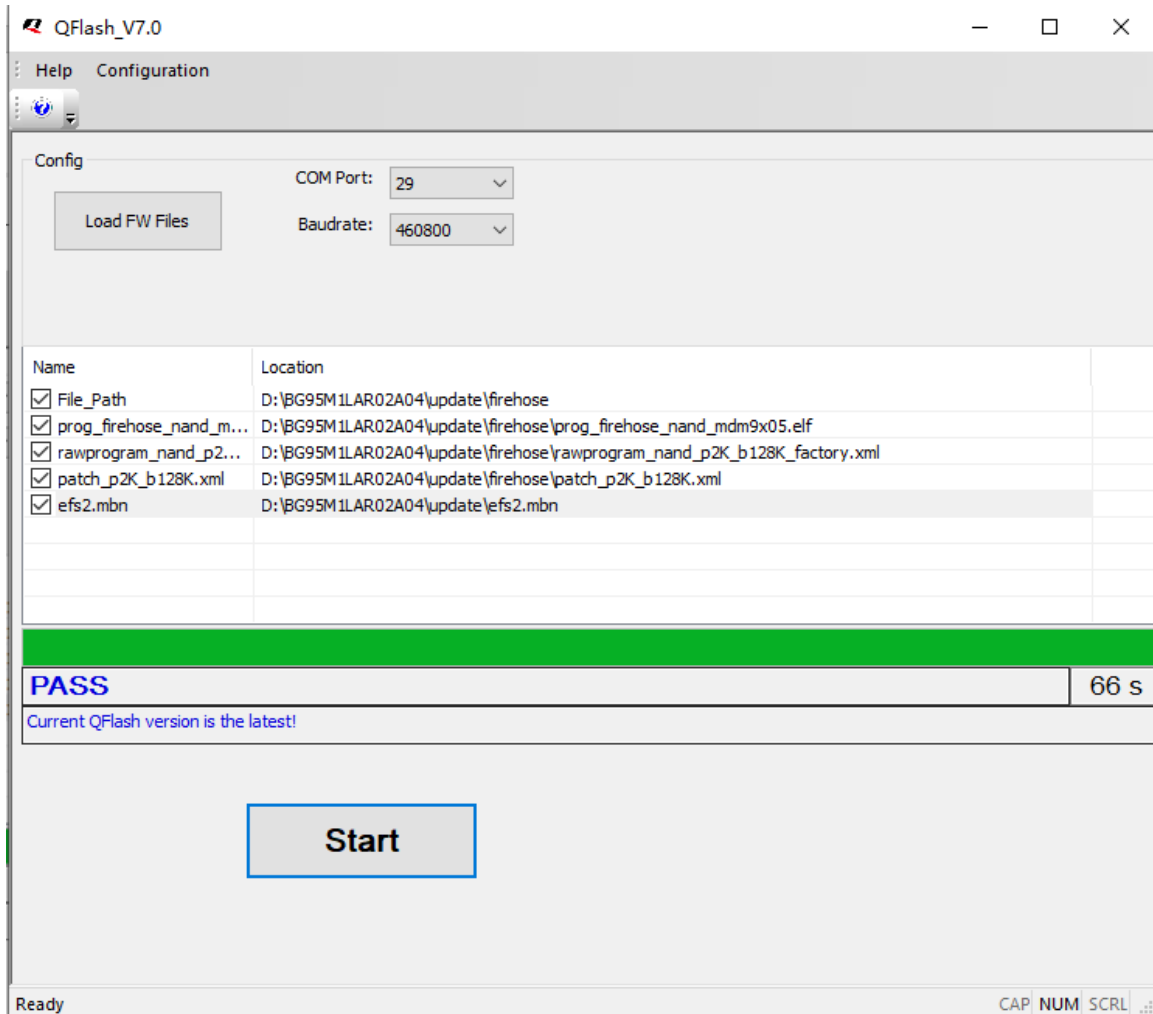


Figure 45: Firmware Upgraded Successfully

2.6.4. MBN Function Upgrade

Currently QFlash only supports MBN upgrade function for BG96. The operation procedure is as follows:

Step 1: Click the “**COM Port**” drop-down list and select the COM port that will be used to upgrade the firmware, as shown in the following figure.

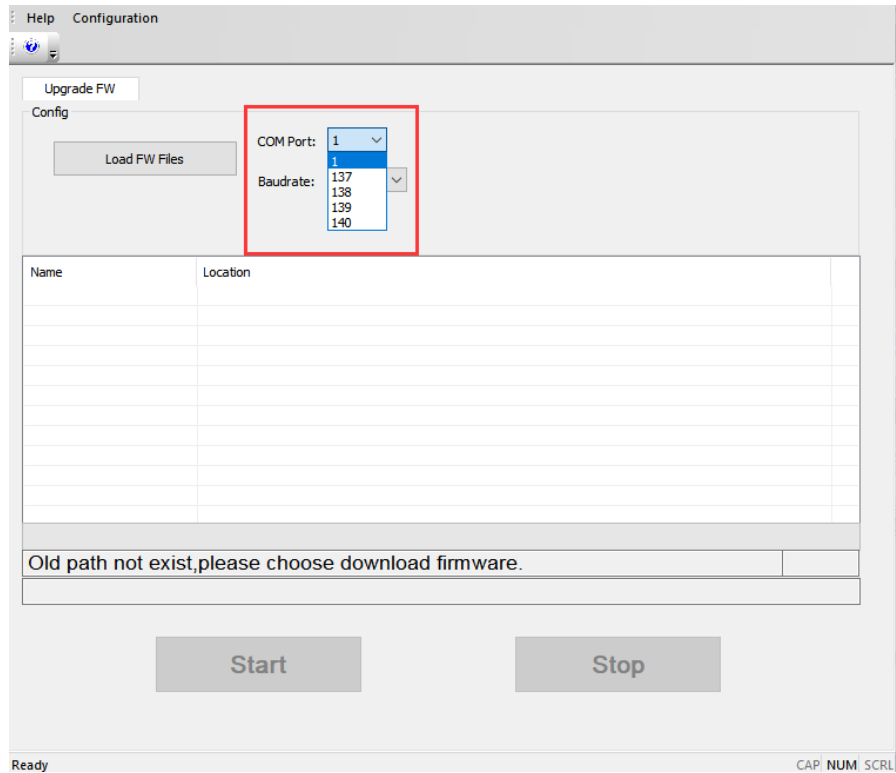


Figure 46: Select the Serial Port of BG96 Module

Step 2: Click the “Load FW Files” button and select the firmware file with the extension. mbn to download to the module.

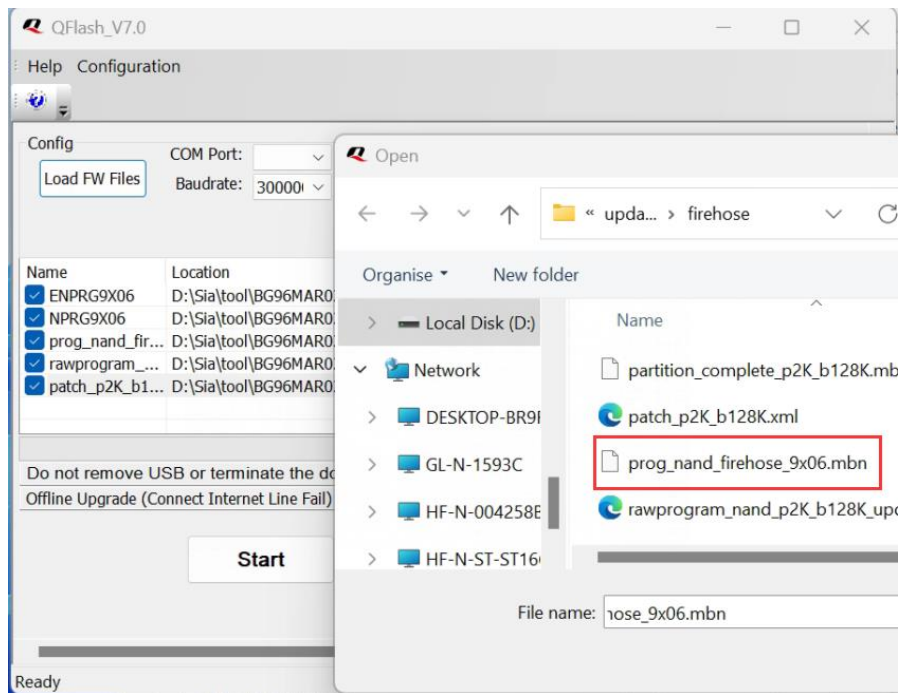


Figure 47: Select the File to Be Downloaded

Step 3: Click the “Start” button and the prompt “Do you need MBN autosel feature enabled by default?” will pop out.

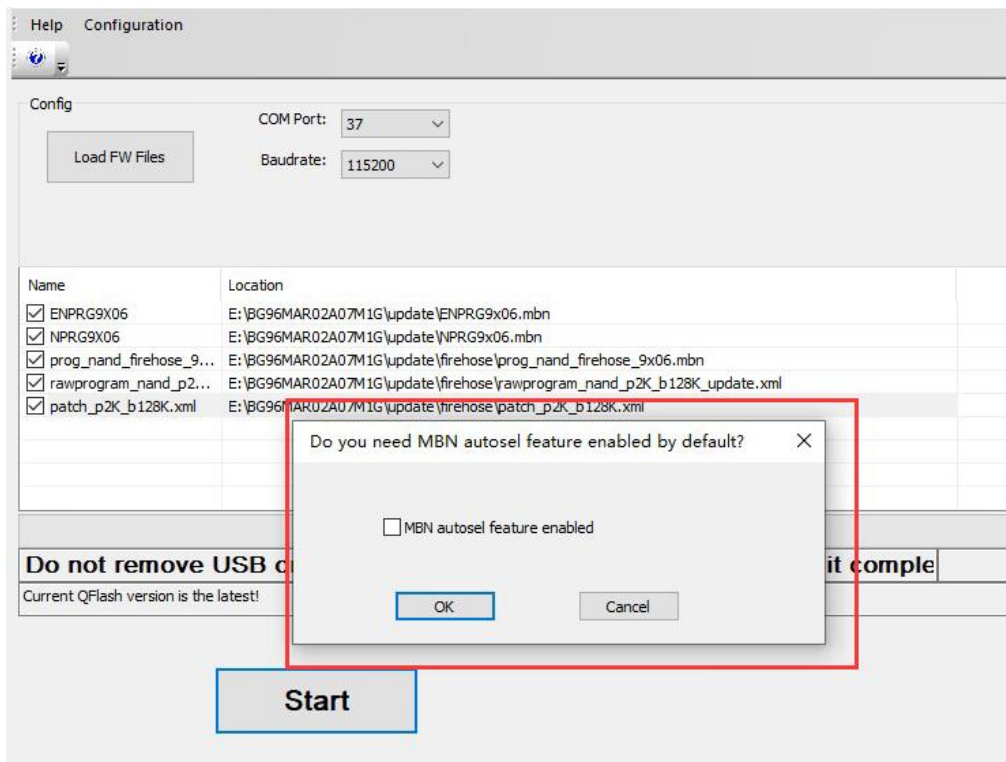


Figure 48: Select MBN Autosel Function

NOTE

1. Make sure there is an *mbn* folder in the selected firmware version package before upgrading.
2. If the “**MBN autosel feature enabled**” checkbox is checked, the MBN automatic selection function is enabled; otherwise, it is disabled. You can start upgrading MBN files either by clicking the “**OK**” button after checking “**MBN autosel feature enabled**”, or by just clicking “**Cancel**”.

Step 4: “PASS” will be shown on the interface after the firmware has been successfully upgraded, as shown in the following figure.

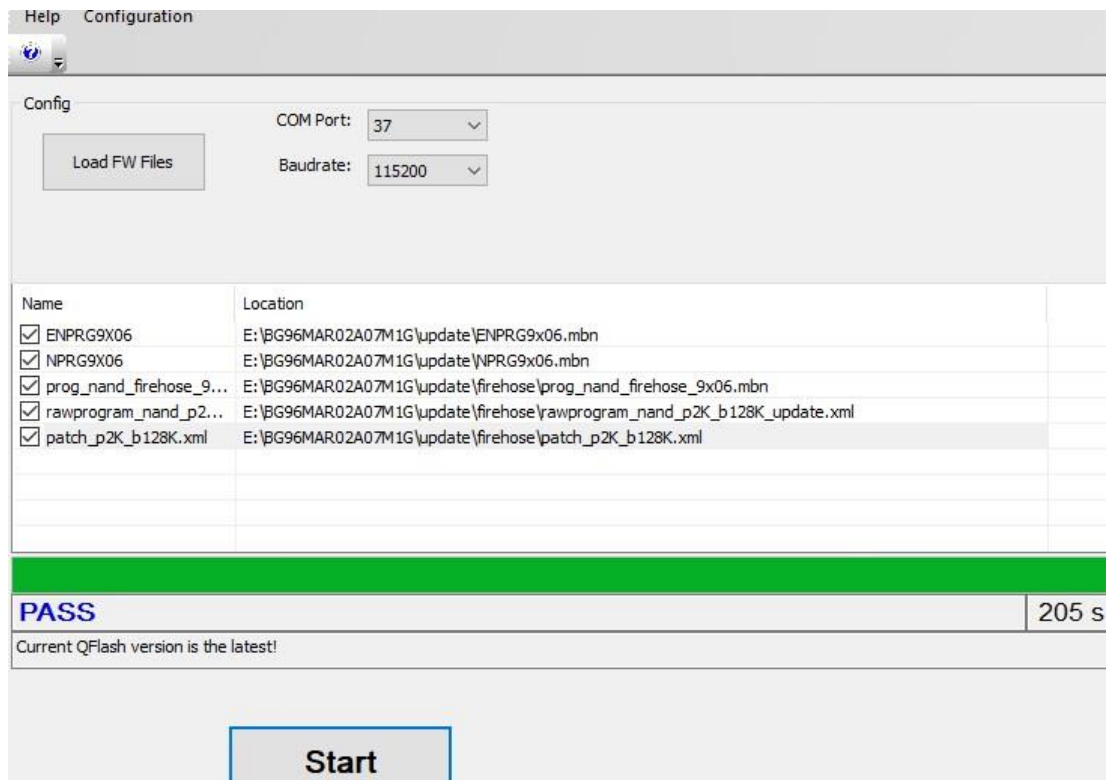


Figure 49: MBN Files Upgraded Successfully for BG96

2.7. GSM Modules

2.7.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

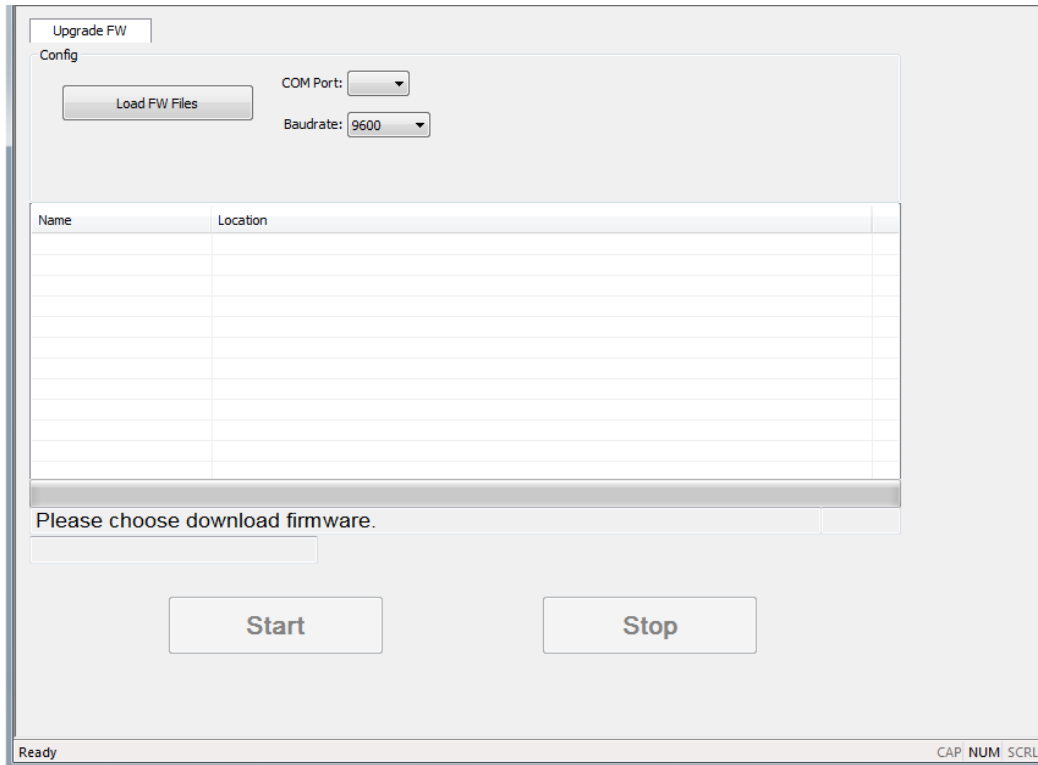


Figure 50: Main Interface of QFlash

2.7.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 26: Summary of GSM Module Firmware Download Ports

Module	COM Port	Comment
M65	Quectel USB Serial Port	
M66	Quectel USB Serial Port	

M95 Quectel USB Serial Port

MC60 Quectel USB Serial Port

Step 2: Click “**COM Port**” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

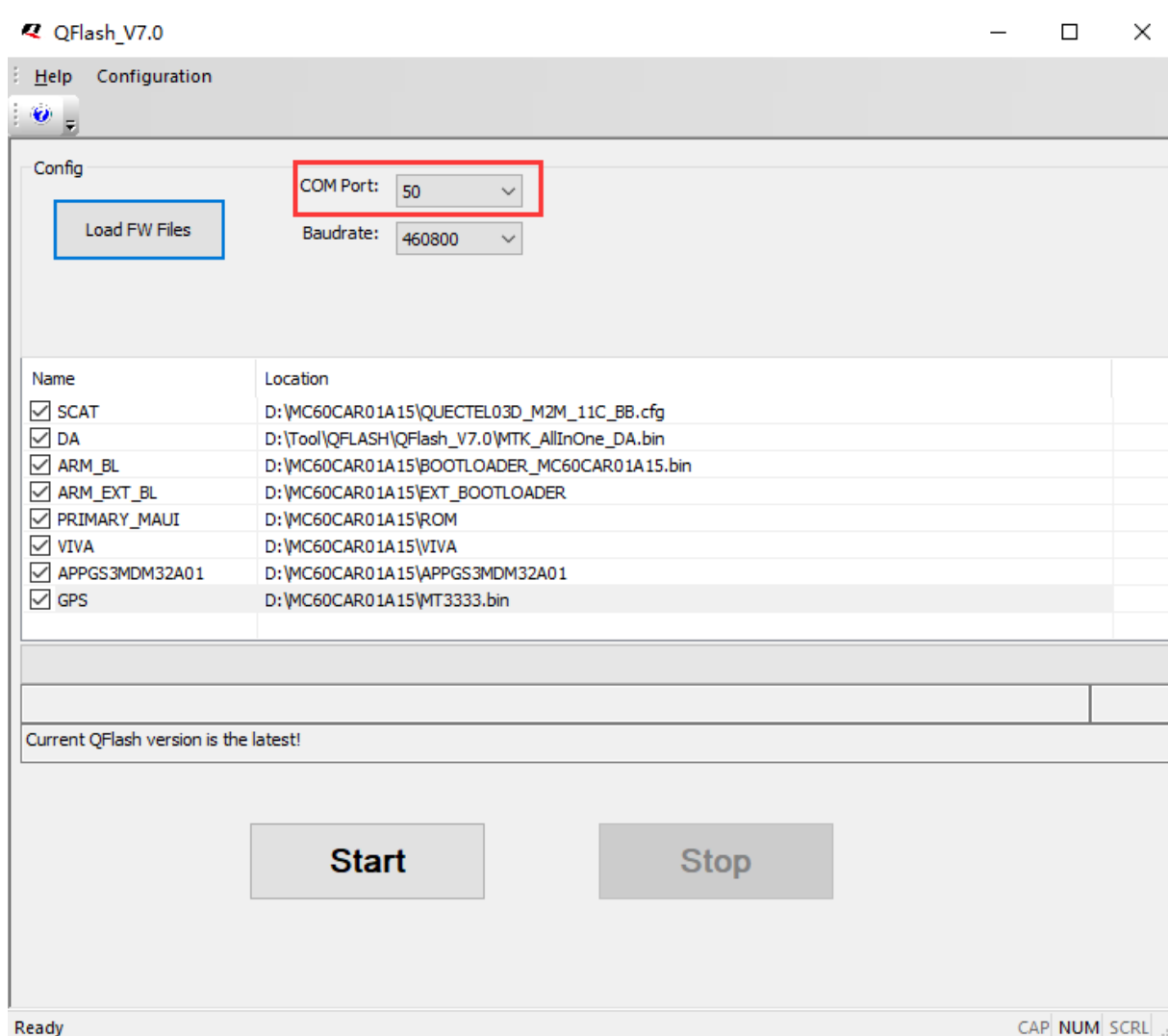


Figure 51: Select COM Port Number

2.7.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 27: Summary of GSM Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
M65	921600	
M66	460800	
M95	460800	
MC60	460800	

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

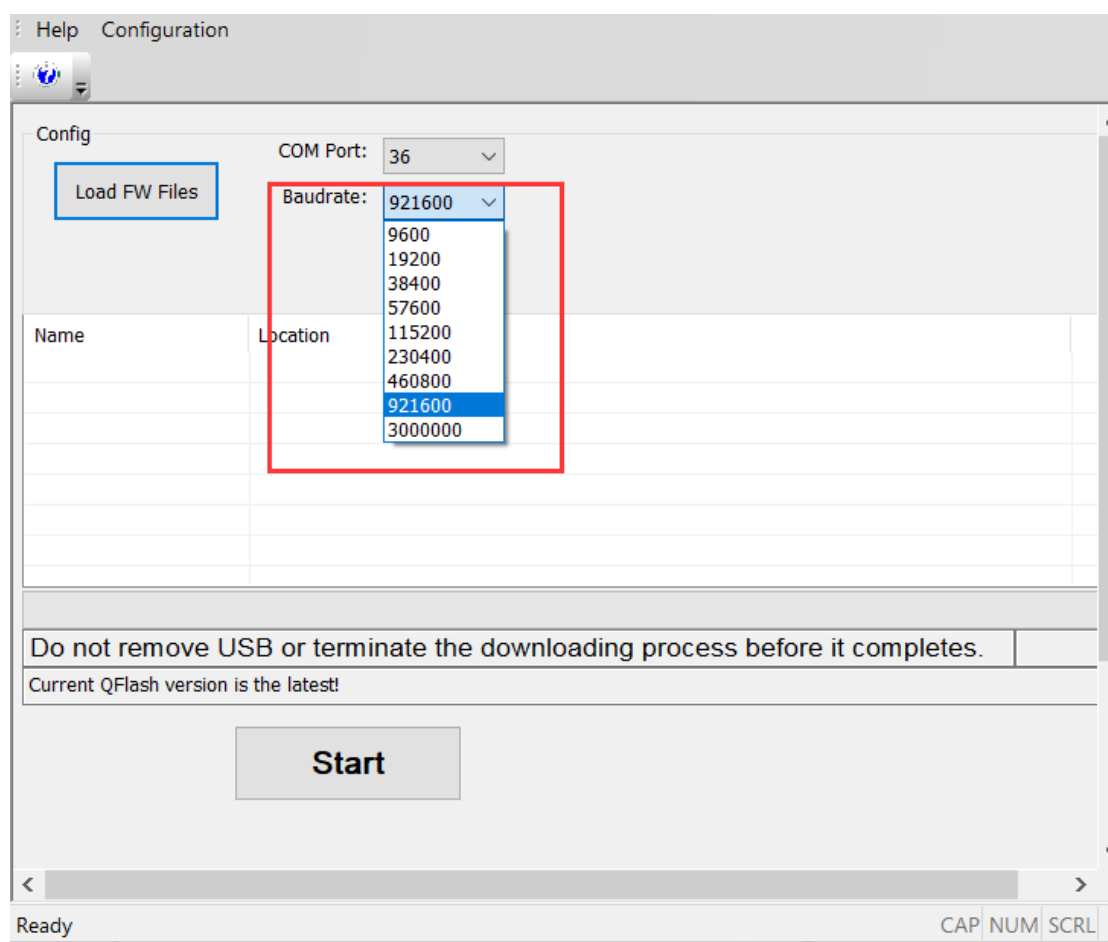


Figure 52: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.7.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 28: Summary of GSM Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
M65	.lod	For QuecOpen solution, .lod file also needs to be selected.
M66	.cfg	1. For QuecOpen solution, .cfg file also needs to be selected. 2. After that, click the “Module Type” drop-down list and select the corresponding module, as shown in Figure 53.
M95	.cfg	
MC60	.cfg	1. For QuecOpen solution, .cfg file also needs to be selected. 2. After that, click the “Module Type” drop-down list and select the corresponding module, as shown in Figure 53.

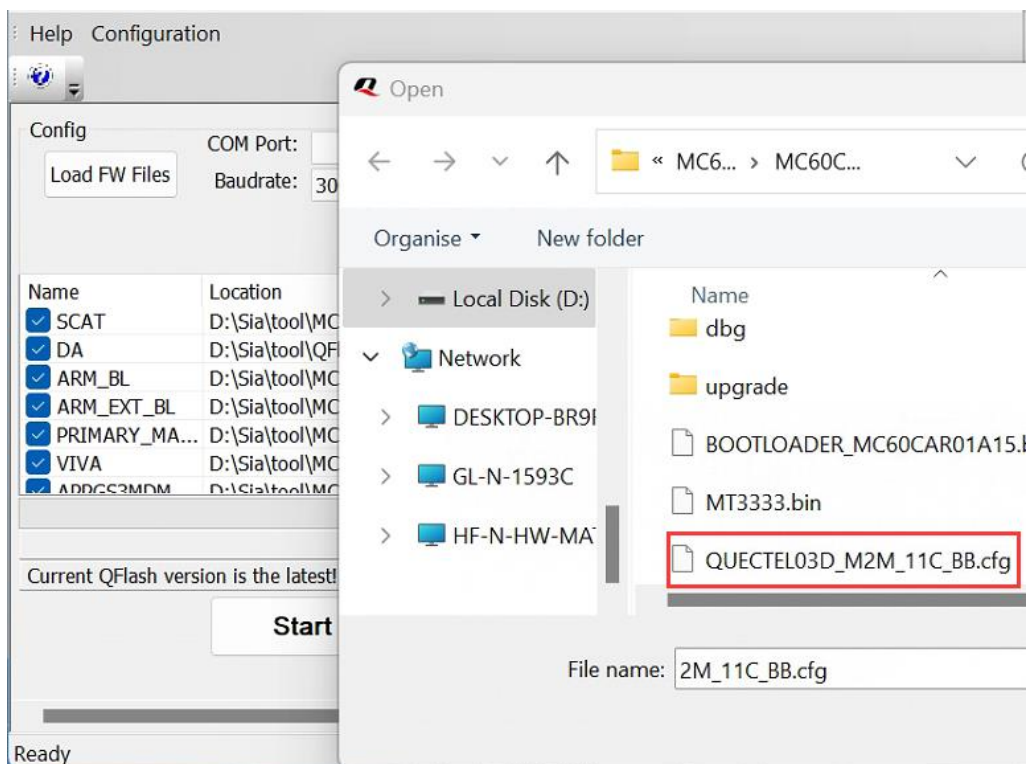


Figure 53: Select the File to Be Downloaded

2.7.3. Start Firmware Upgrade

Table 29: GSM Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
M65	Click the "Start" button. And the tool will start firmware upgrade after the module resets automatically.	
M66	1. Click the "Start" button. 2. Switch the D/L to "ON" on EVB within 30 seconds. 3. The tool starts firmware upgrade automatically.	Make sure the EVB is powered by a 5 V power supply.
M95	1. Click the "Start" button. 2. Switch the D/L to "ON" on EVB within 30 seconds. 3. The tool starts firmware upgrade automatically.	Make sure the EVB is powered by a 5 V power supply.
MC60	1. Click the "Start" button. 2. Switch the D/L to "ON" on EVB within 30 seconds. 3. The tool starts firmware upgrade automatically.	Make sure the EVB is powered by a 5 V power supply.

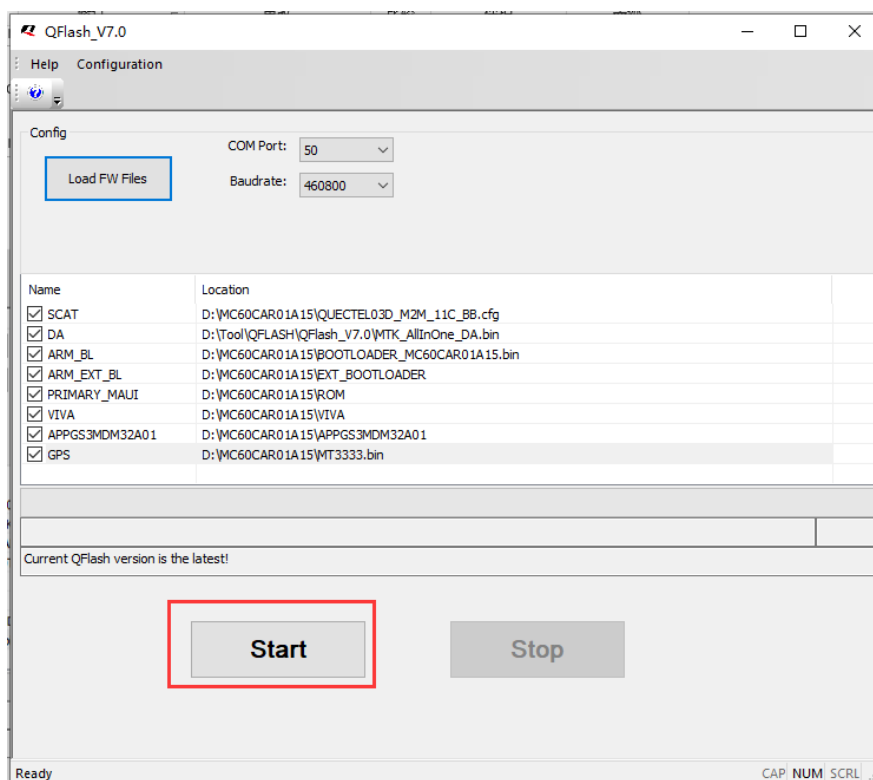


Figure 54: “Start” Button

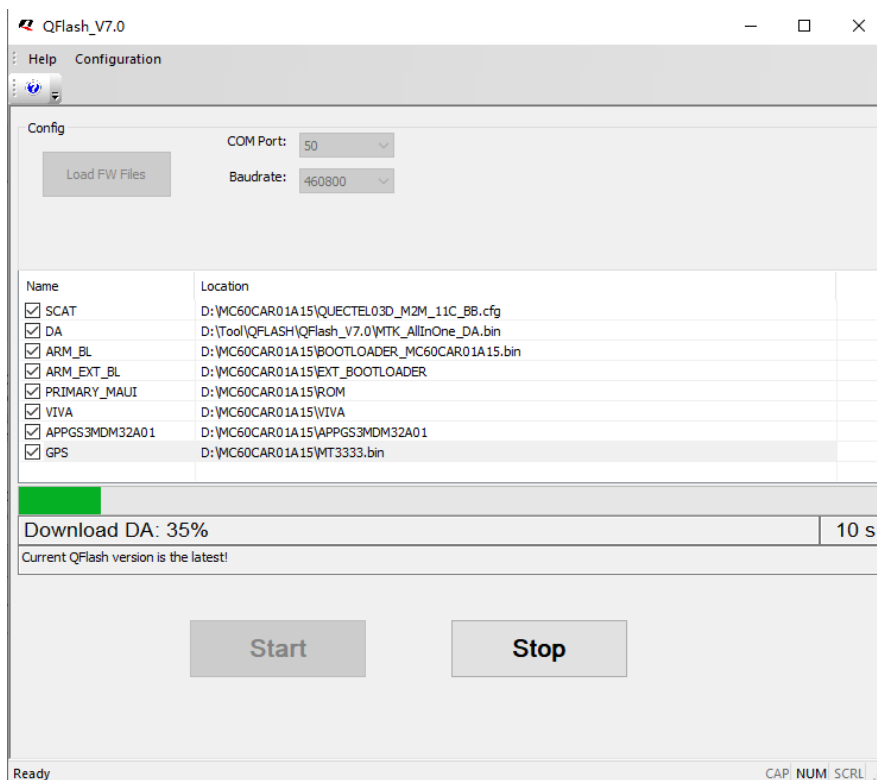


Figure 55: Start Firmware Upgrade Automatically After Clicking “Start” Button

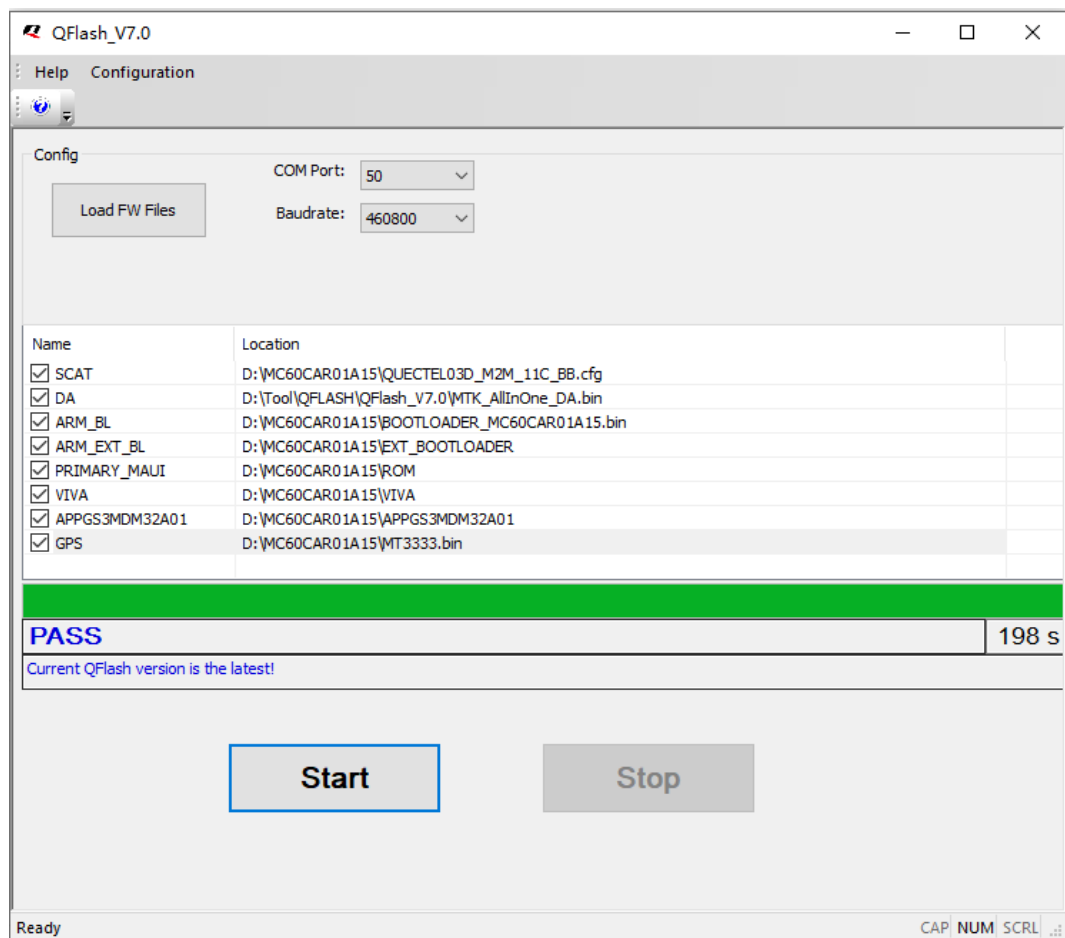


Figure 56: Firmware Upgraded Successfully

2.8. Short-Range Modules

2.8.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

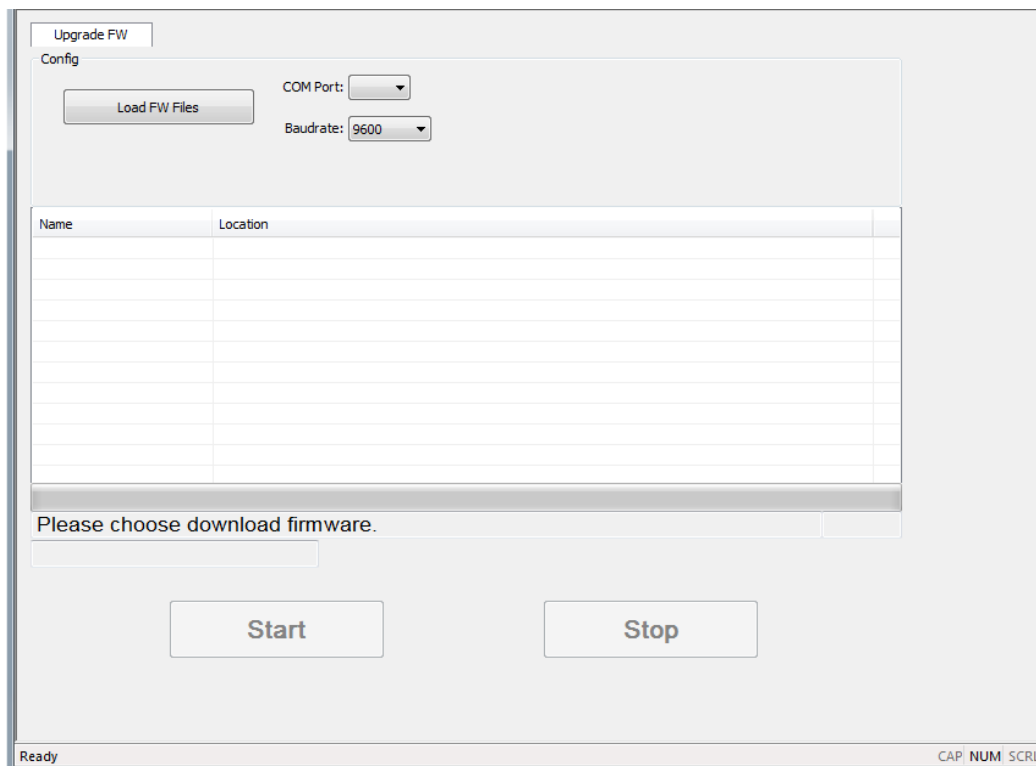


Figure 57: Main Interface of QFlash

2.8.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 30: Summary of Short-Range Module Firmware Download Ports

Module	COM Port	Comment
FC41D	Quectel USB Serial Port	
FCM100D	Quectel USB Serial Port	

FCM360W	Silicon Labs CP210x USB to UART Bridge
FLM140D	Silicon Labs CP210x USB to UART Bridge
HCM010S	JLink CDC UART Port
HCM111Z	USB-Enhanced-SERIAL CH9102

Step 2: Click “**COM Port**” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

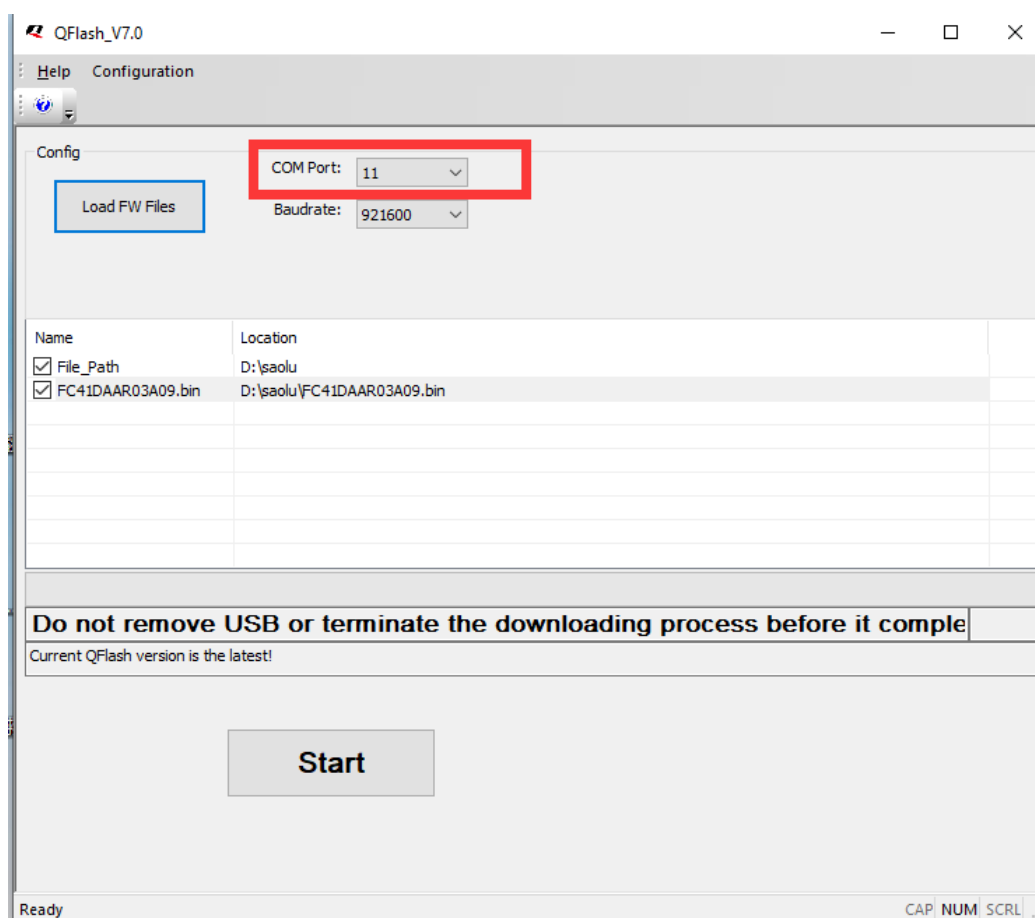


Figure 58: Select COM Port Number

2.8.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 31: Summary of Short-Range Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
FC41D	460800	
FCM100D	460800	
FCM360W	921600	
FLM140D	921600	
HCM010S	9600	
HCM111Z	921600	

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

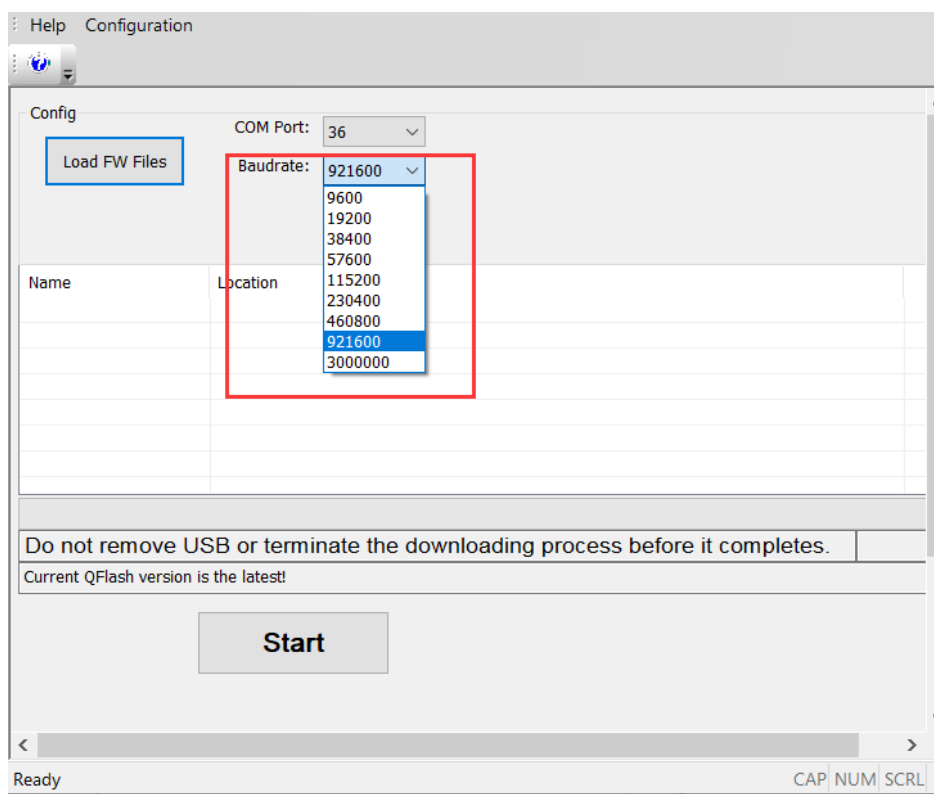


Figure 59: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

2.8.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 32: Summary of Short-Range Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
FC41D	.bin	
FCM100D	.bin	
FCM360W	.bin	
FLM140D	.bin	
HCM010S	.hex	
HCM111Z	.bin	

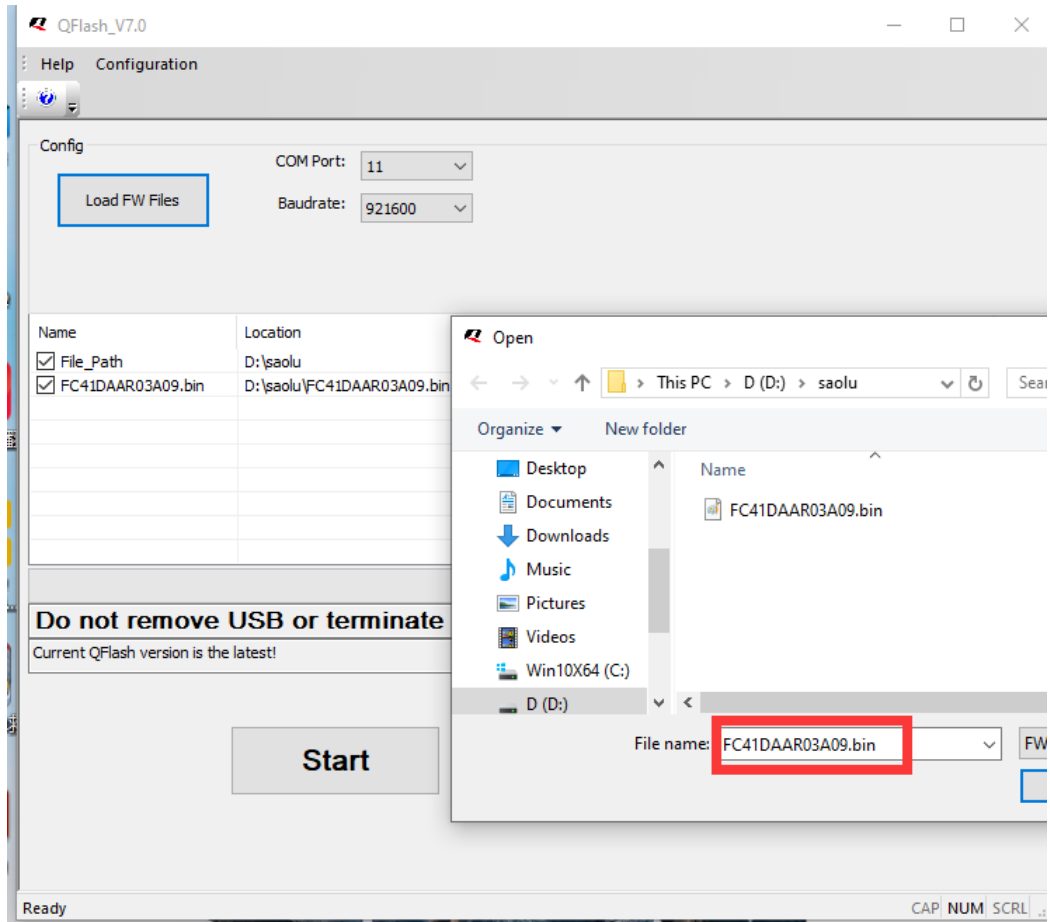


Figure 60: Select the File to Be Downloaded

2.8.3. Start Firmware Upgrade

Table 33: Short-Range Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
FC41D	1. Click the “Start” button. 2. Reset the module manually when the tool prompts “Erasing Flash...”. 3. The tool starts firmware upgrade automatically.	
FCM100D	1. Click the “Start” button. 2. Reset the module manually when the tool prompts “Erasing Flash...”. 3. The tool starts firmware upgrade automatically.	
FCM360W	1. Click the “Start” button. 2. Reset the module manually when the tool prompts “Erasing Flash...”.	

	3. The tool starts firmware upgrade automatically.
FLM140D	1. Click the “Start” button. 2. Reset the module manually when the tool prompts “Erasing Flash...”. 3. The tool starts firmware upgrade automatically.
HCM010S	1. Enable the J-Link tool. 2. Click the “Start” button and the module will automatically perform the firmware upgrade.
HCM111Z	1. Click the “Start” button. 2. Reset the module manually when the tool prompts “Erasing Flash...”. 3. The tool starts firmware upgrade automatically.

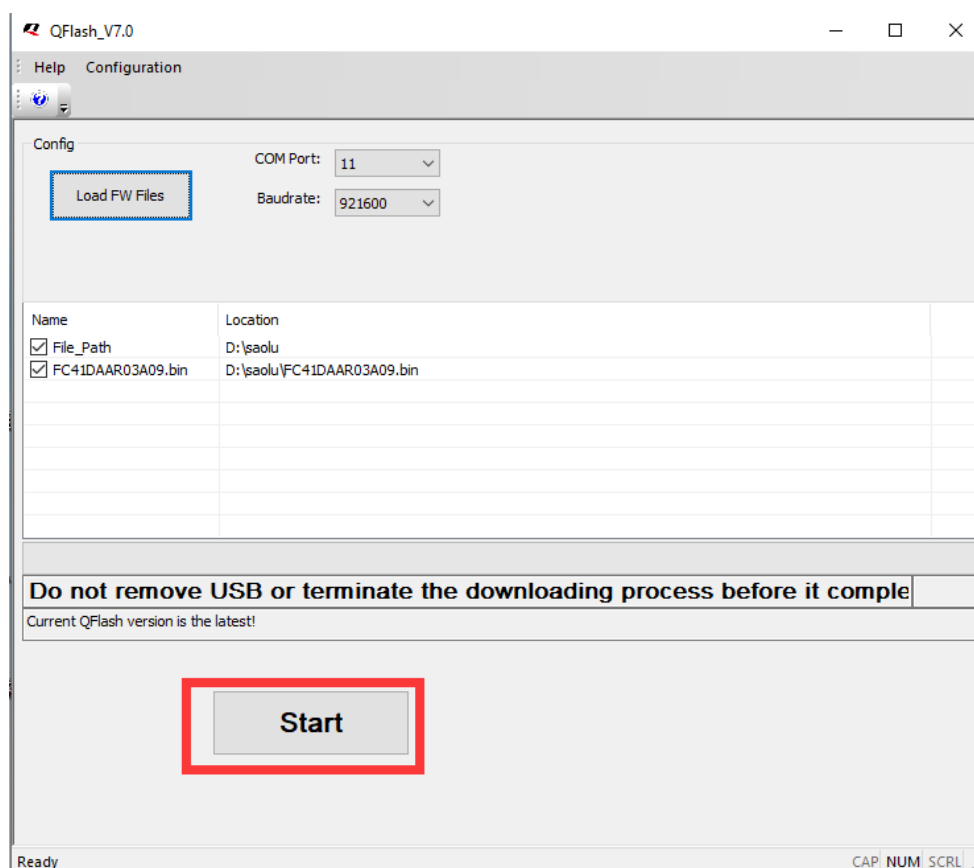


Figure 61: “Start” Button

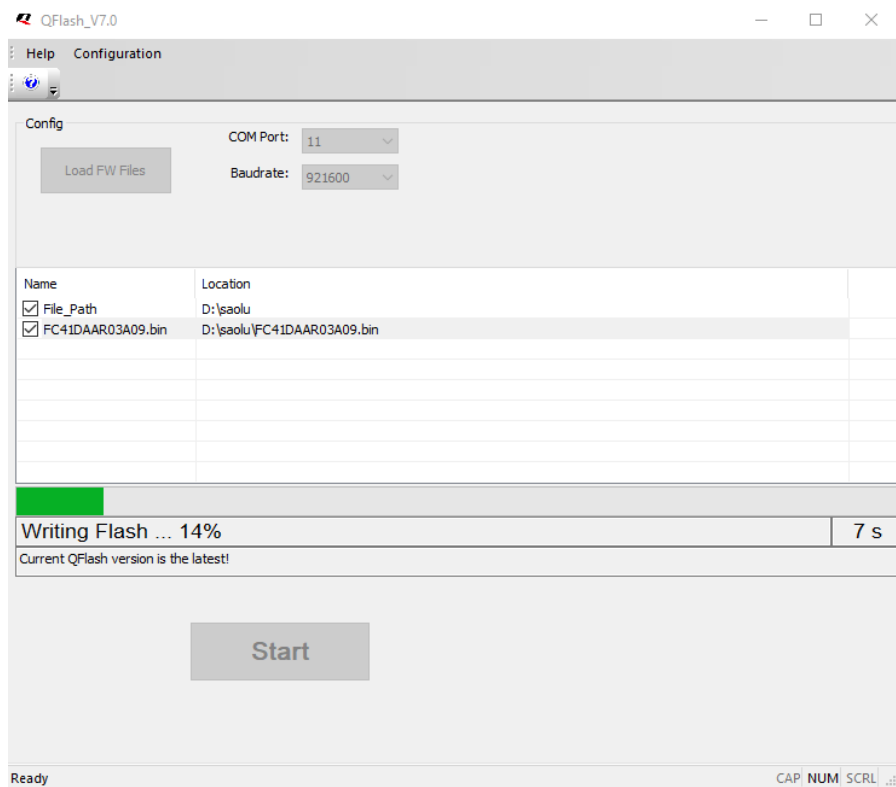


Figure 62: Start Firmware Upgrade Automatically After Clicking “Start” Button

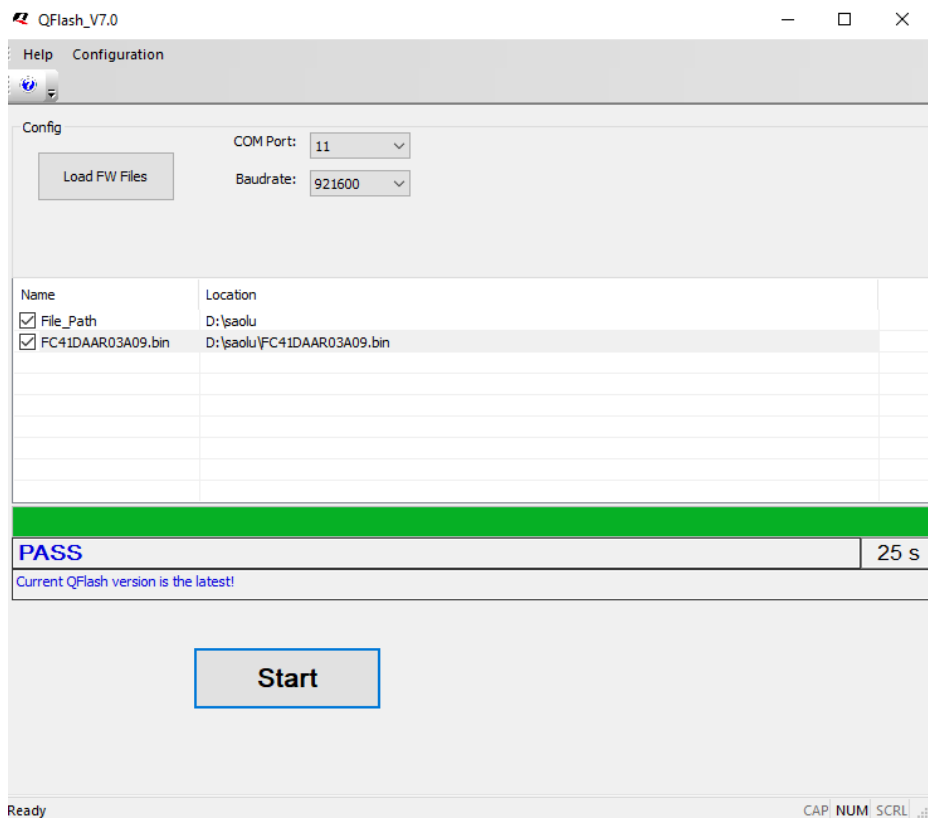


Figure 63: Firmware Upgraded Successfully

2.9. Satellite Modules

2.9.1. Select COM Port and Baud Rate

After the QFlash tool is started, the main interface is shown as below.

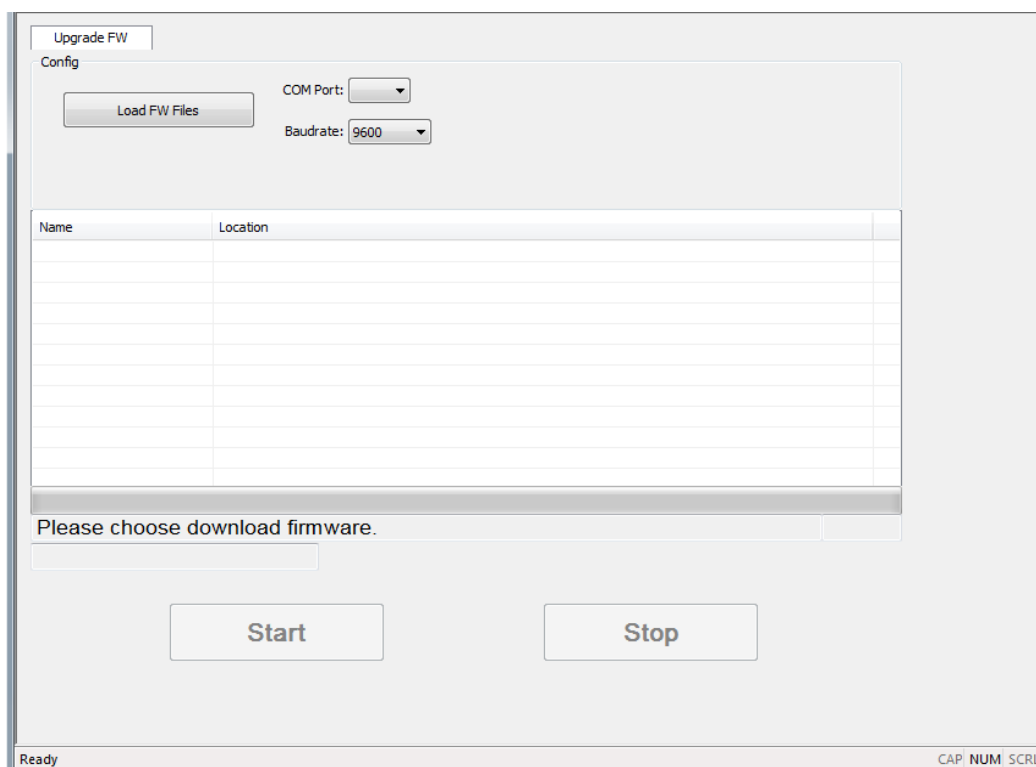


Figure 64: Main Interface of QFlash

2.9.1.1. Select COM Port

Step 1: Check the following table to confirm the firmware download port (COM port) for a specified module.

Table 34: Summary of Satellite Module Firmware Download Ports

Module	COM Port	Comment
CC660D	WCH USB-SERIAL CH A	

Step 2: Click “COM Port” drop-down list to select the corresponding COM port number, unless otherwise specified in the “Comment” column of the above table.

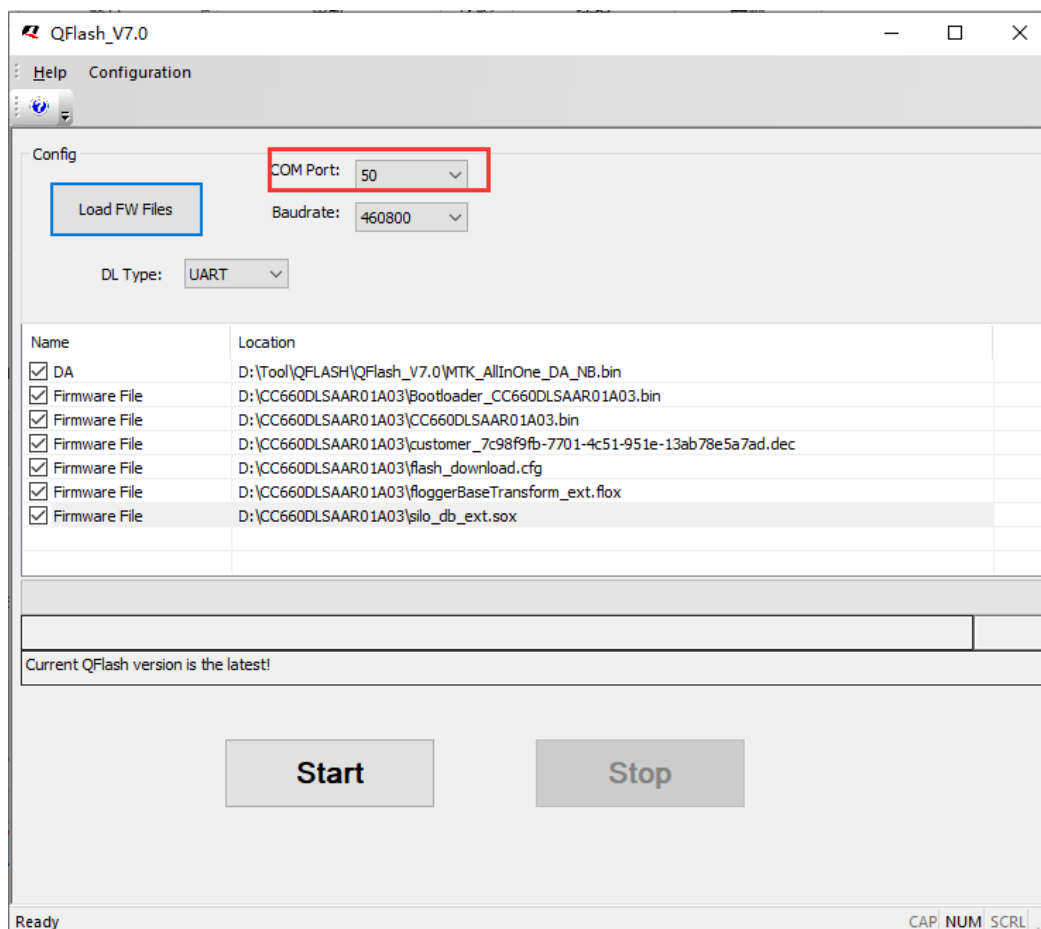


Figure 65: Select COM Port Number

2.9.1.2. Set Baud Rate

Step 1: Check the following table to confirm the supported baud rate of a specified module for firmware upgrade.

Table 35: Summary of Satellite Module Firmware Upgrade Baud Rates

Module	Baud Rate	Comment
CC660D	460800	

Step 2: Click “**Baudrate**” drop-down list to select the corresponding baud rate.

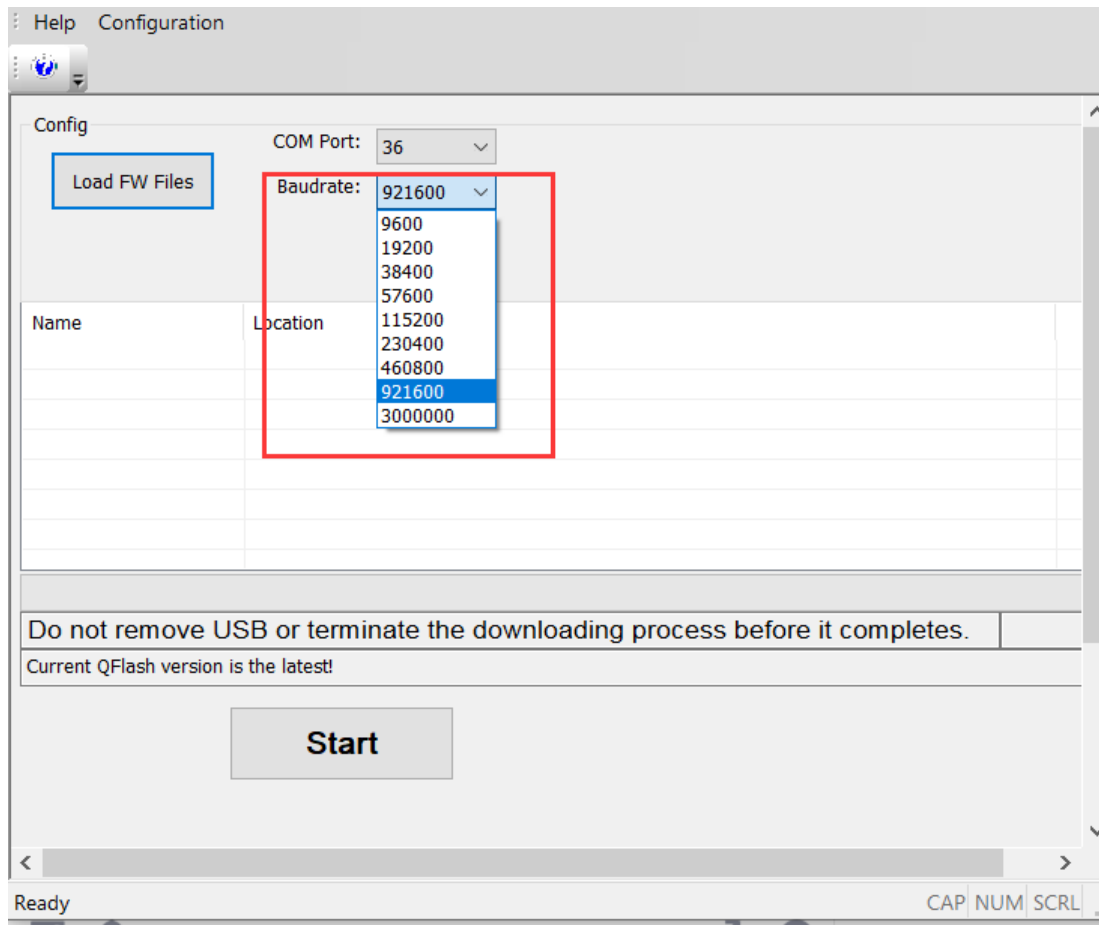


Figure 66: Select the Baud Rate

NOTE

1. Baud rate setting is unnecessary for virtual USB port.
2. There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If the baud rate is not supported, an error message will be returned.

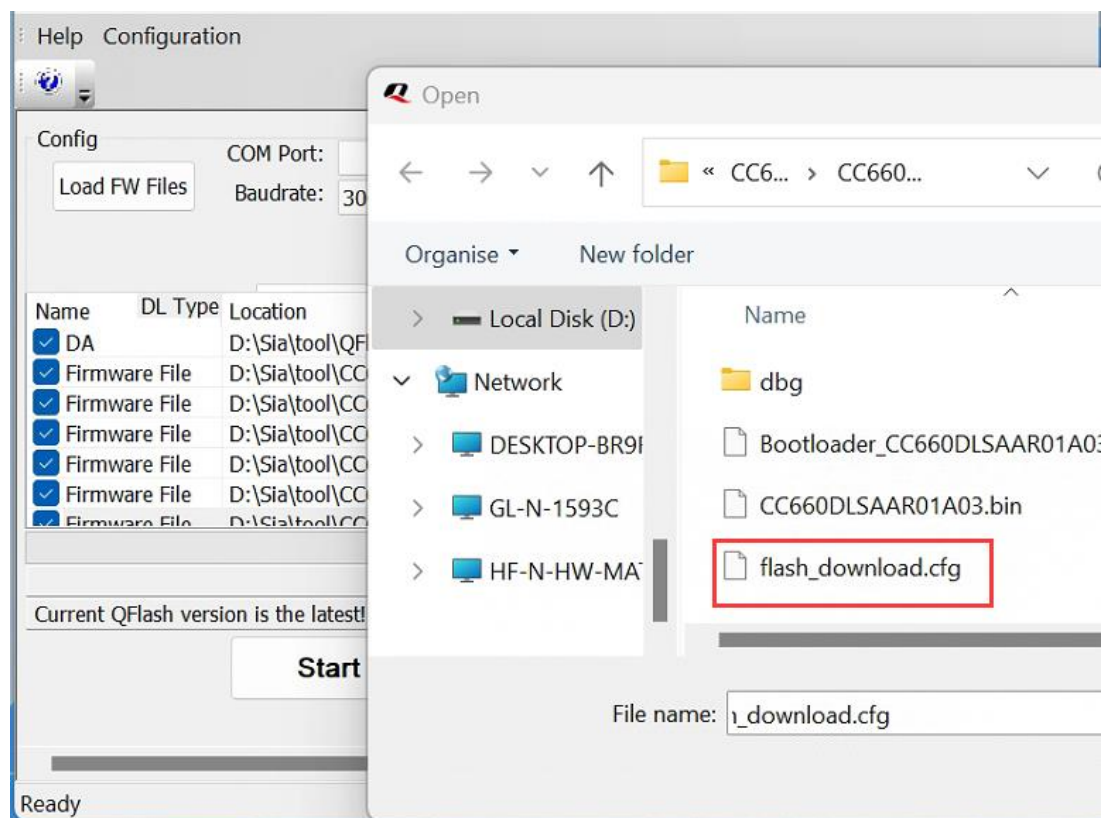
2.9.2. Load Firmware File

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

Step 2: Check the following table to select the corresponding firmware file to be downloaded to the module.

Table 36: Summary of Satellite Module Firmware Files to Be Downloaded

Module	Firmware File	Comment
CC660D	.cfg	


Figure 67: Select the File to Be Downloaded

2.9.3. Start Firmware Upgrade

Table 37: Satellite Module Firmware Upgrade Starting Steps

Module	Firmware Upgrade Starting Steps	Comment
CC660D	1. Click the "Start" button. 2. Reset the module manually when the tool prompts "Probe". 3. The tool starts firmware upgrade automatically.	

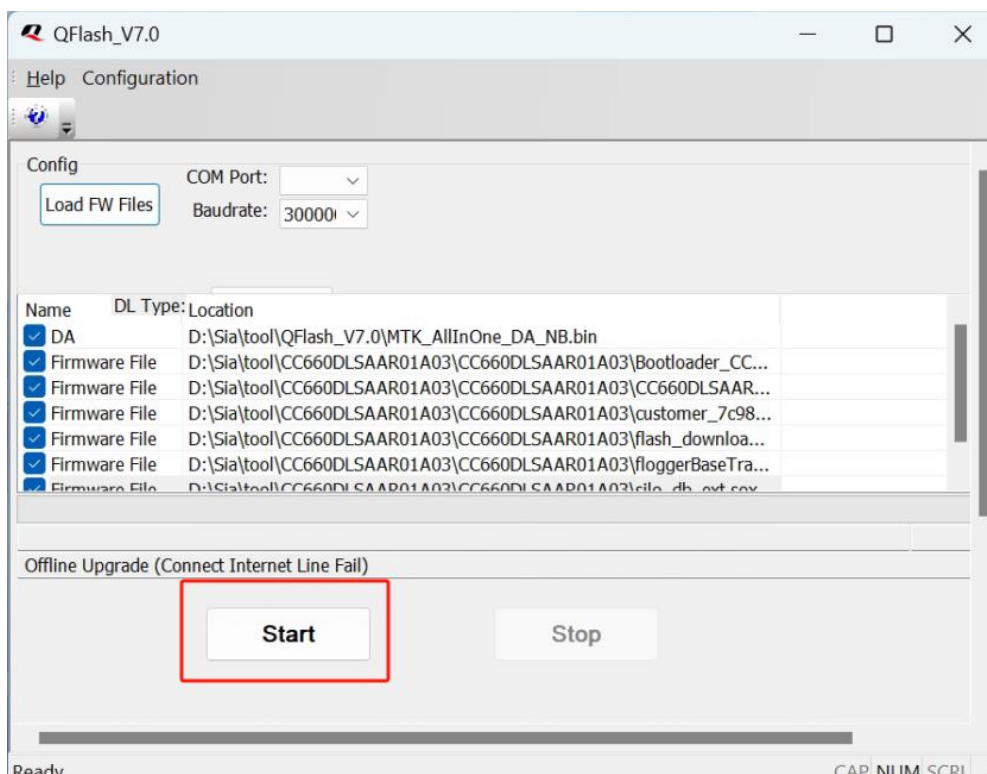


Figure 68: “Start” Button

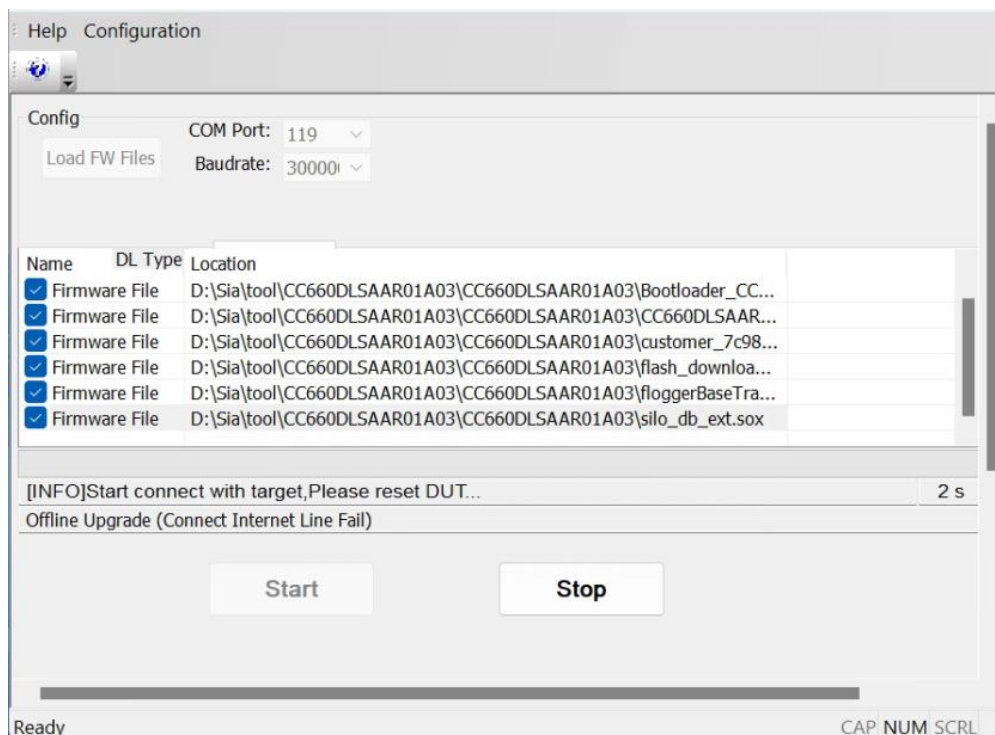


Figure 69: Start Firmware Upgrade Automatically After Clicking “Start” Button

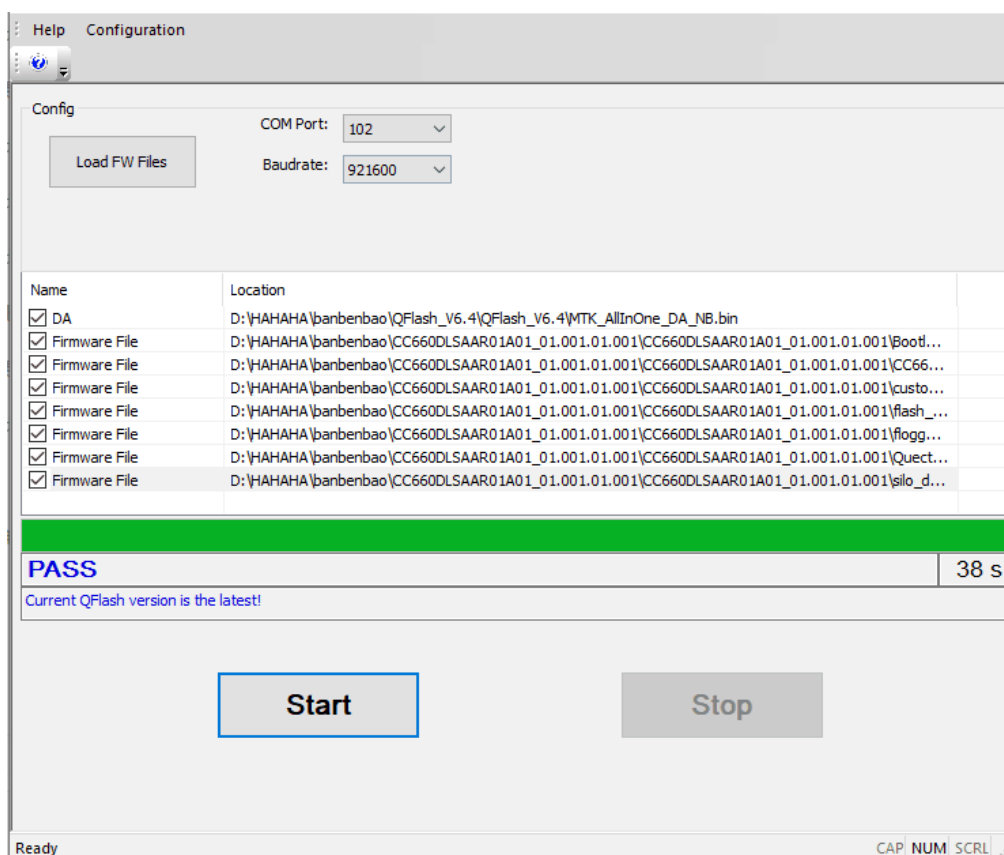


Figure 70: Firmware Upgraded Successfully

3 Abnormalities

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

3.1. Selected a Wrong Serial Port

3.1.1. GSM Modules

For M66, M95 and MC60 modules, if the serial port selection is incorrect, then the prompt will be as follows:

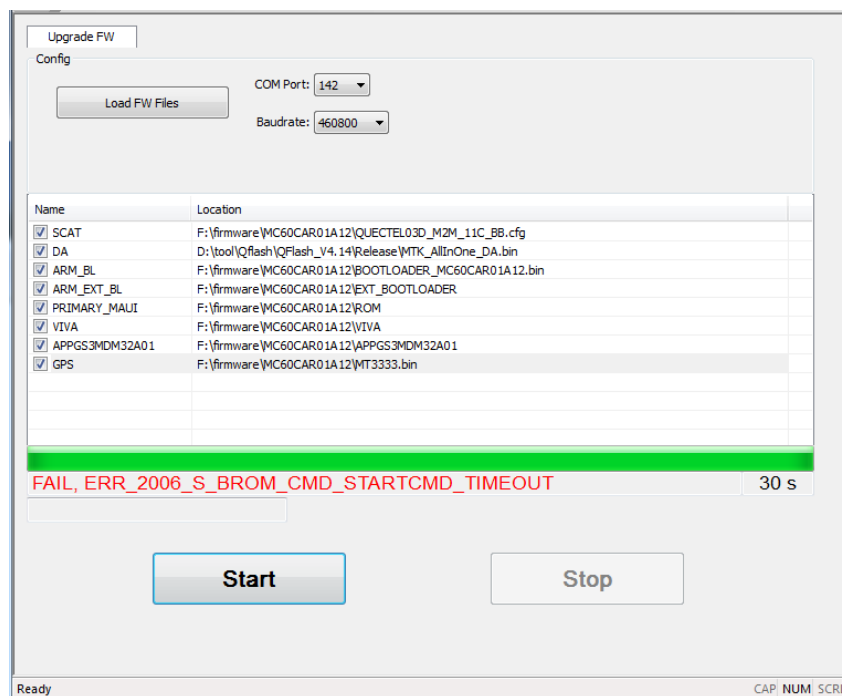


Figure 71: Connected to a Wrong Serial Port (Example 1)

NOTE

After selecting a correct serial port, if M66, M95 and MC60 modules are not reset, the error message will be the same as that caused by selecting a wrong serial port.

For M65 module, if the serial port selection is incorrect, then the prompt will be as follows:

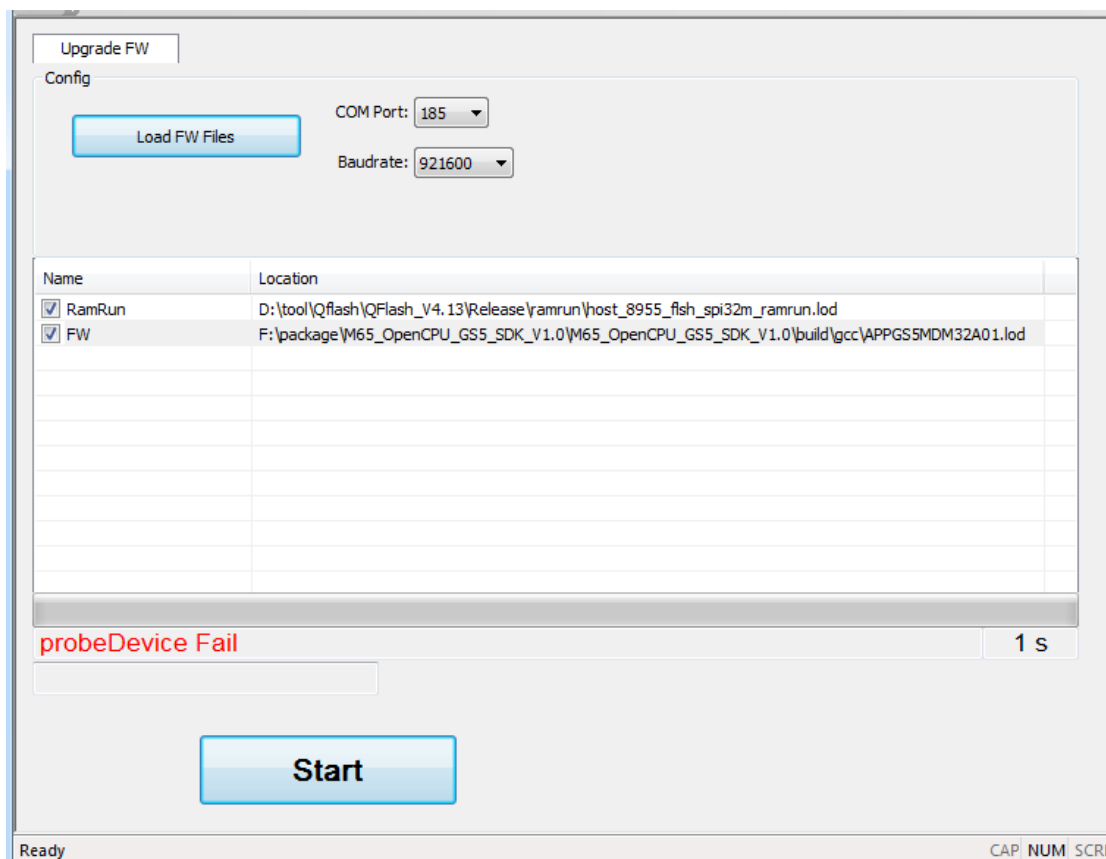


Figure 72: Connected to a Wrong Serial Port (Example 2)

3.1.2. 5G<E-A<E Standard&Automotive&LPWA Modules

For RG500Q, RM500Q, EP06, EG06, EM06, EG12, EM12-G, EG18, EC20-CE, EC21, EC25, EG21-G, EG25-G, EG91, EG95, EM05, AG15, AG35, AG215S, AG520R, AG521R, AG525R, AG529R, AG550Q, AG551Q, AG552Q, AG553Q, BG77, BG95 and BG96 modules, if the serial port selection is incorrect, then the prompt will be as follows:

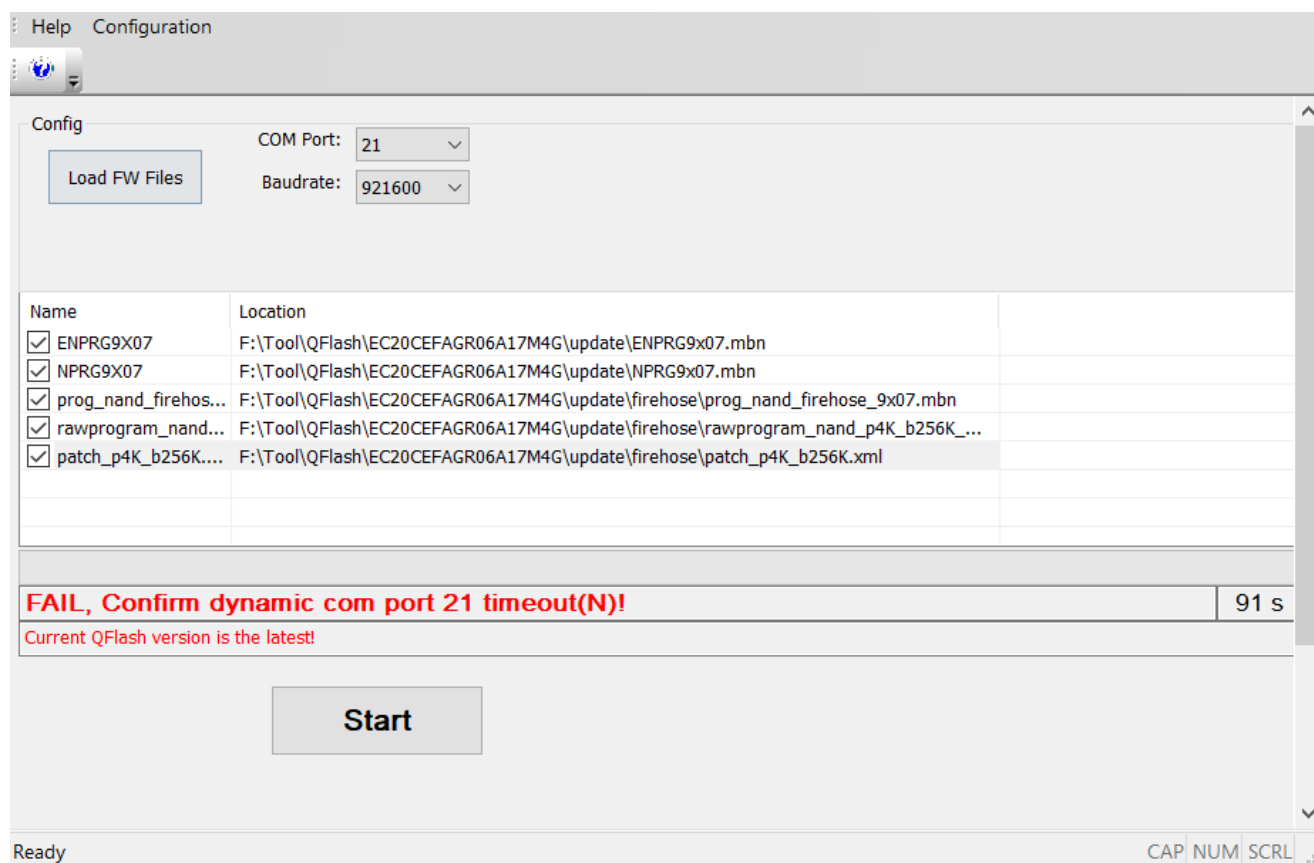


Figure 73: Connected to a Wrong Serial Port (Example 3)

3.1.3. Smart Modules

For SC20, SC66 and SC200E modules, if the serial port selection is incorrect, then the prompt will be as follows:

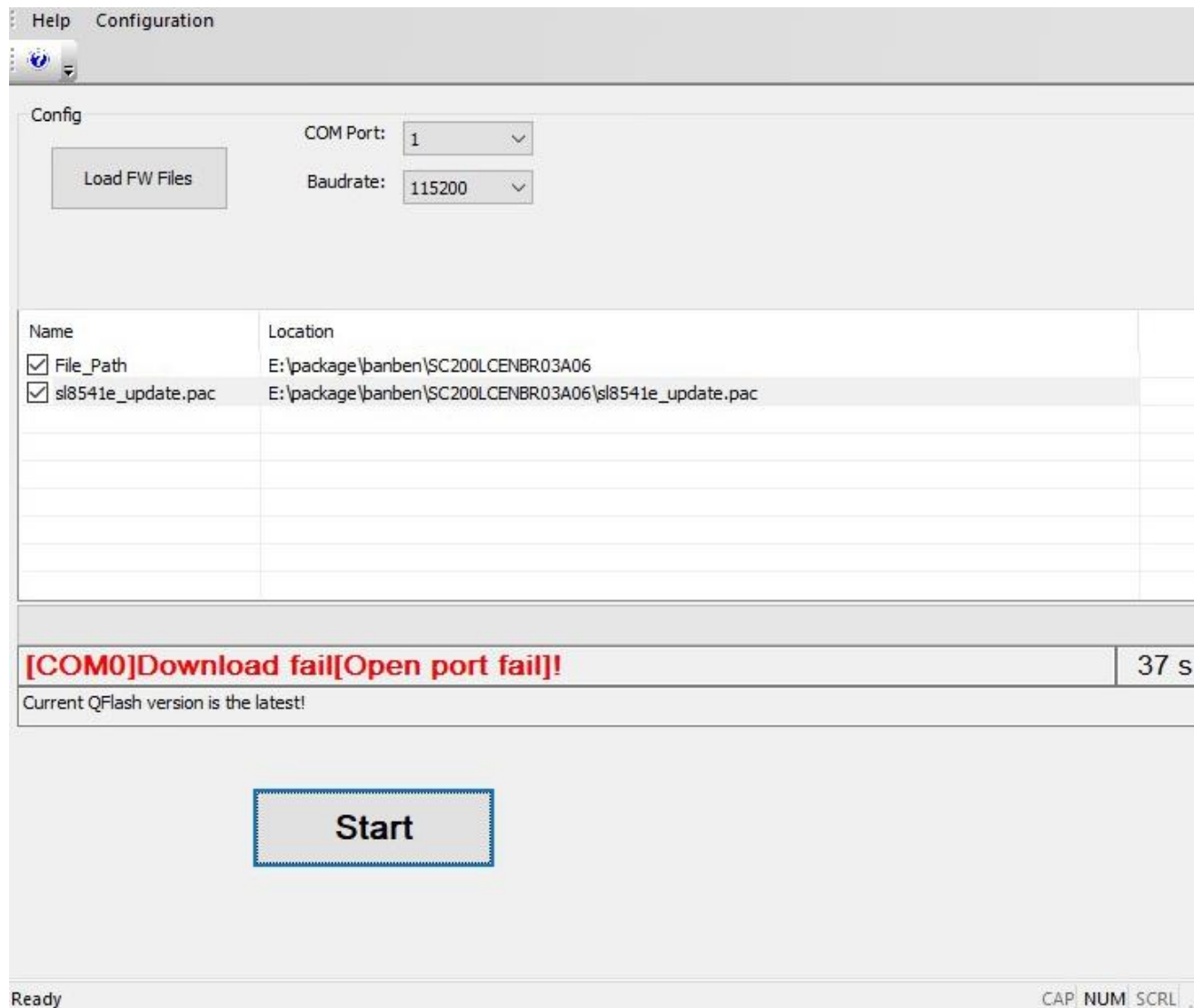


Figure 74: Connected to a Wrong Serial Port (Example 4)

3.1.4. LPWA Modules

For BC92, BC660K and BC950K modules, if the serial port selection is incorrect, then the prompt will be as follows:

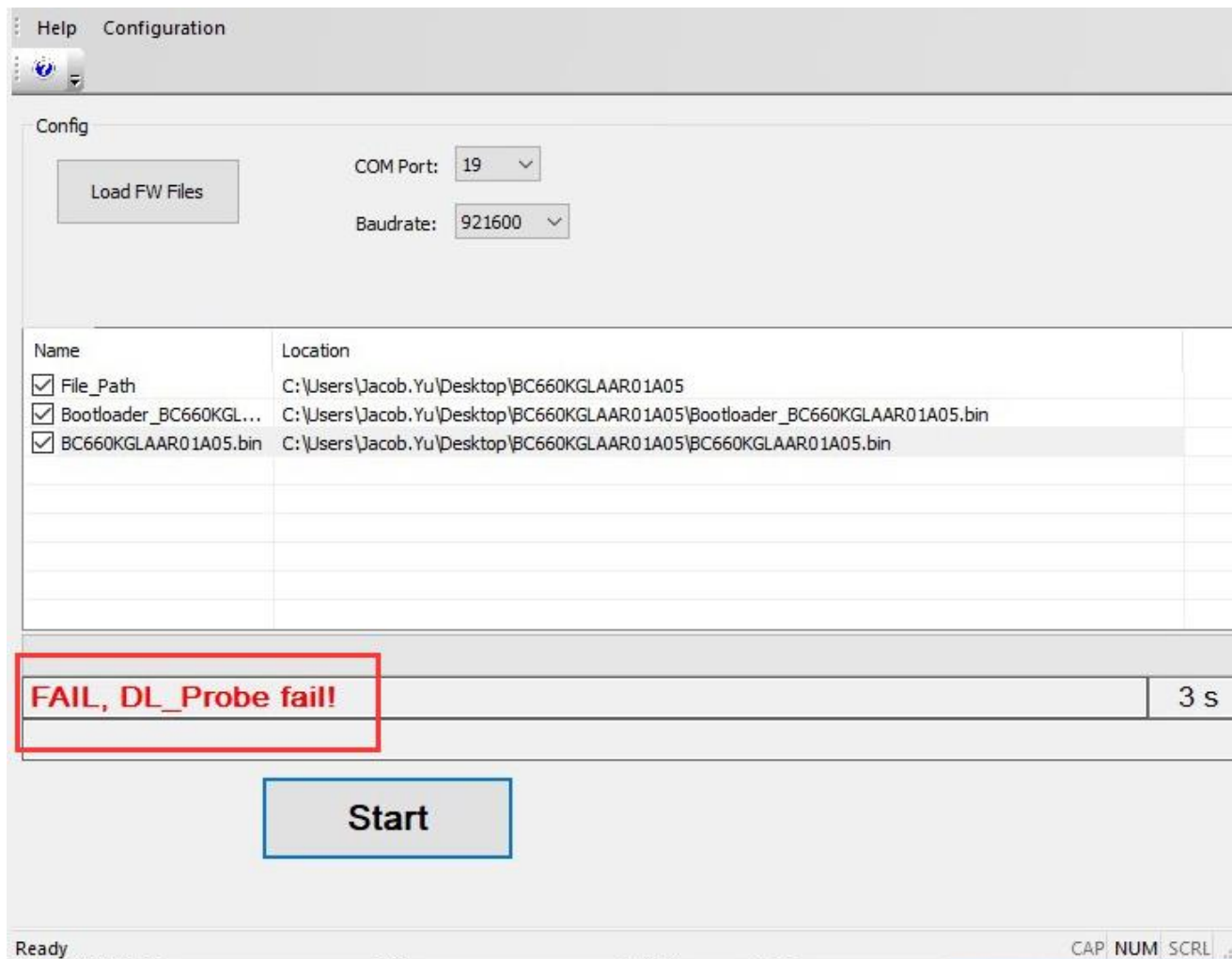


Figure 75: Connected to a Wrong Serial Port (Example 5)

3.2. Connected to an Occupied Serial Port

3.2.1. 5G<E-A<E Standard&Automotive&Smart&LPWA Modules

For RG500Q, RM500Q, EP06, EG06, EM06, EG12, EM12-G, EG18, EC20-CE, EC21, EC25, EG21-G, EG25-G, EG91, EG95, EM05, AG15, AG35, AG215S, AG520R, AG521R, AG525R, AG529R, AG550Q, AG551Q, AG552Q, AG553Q, SC20, SC66, SC200E, BG77, BG95 and BG96 modules, if the connected serial port is occupied, then the prompt will be as follows:

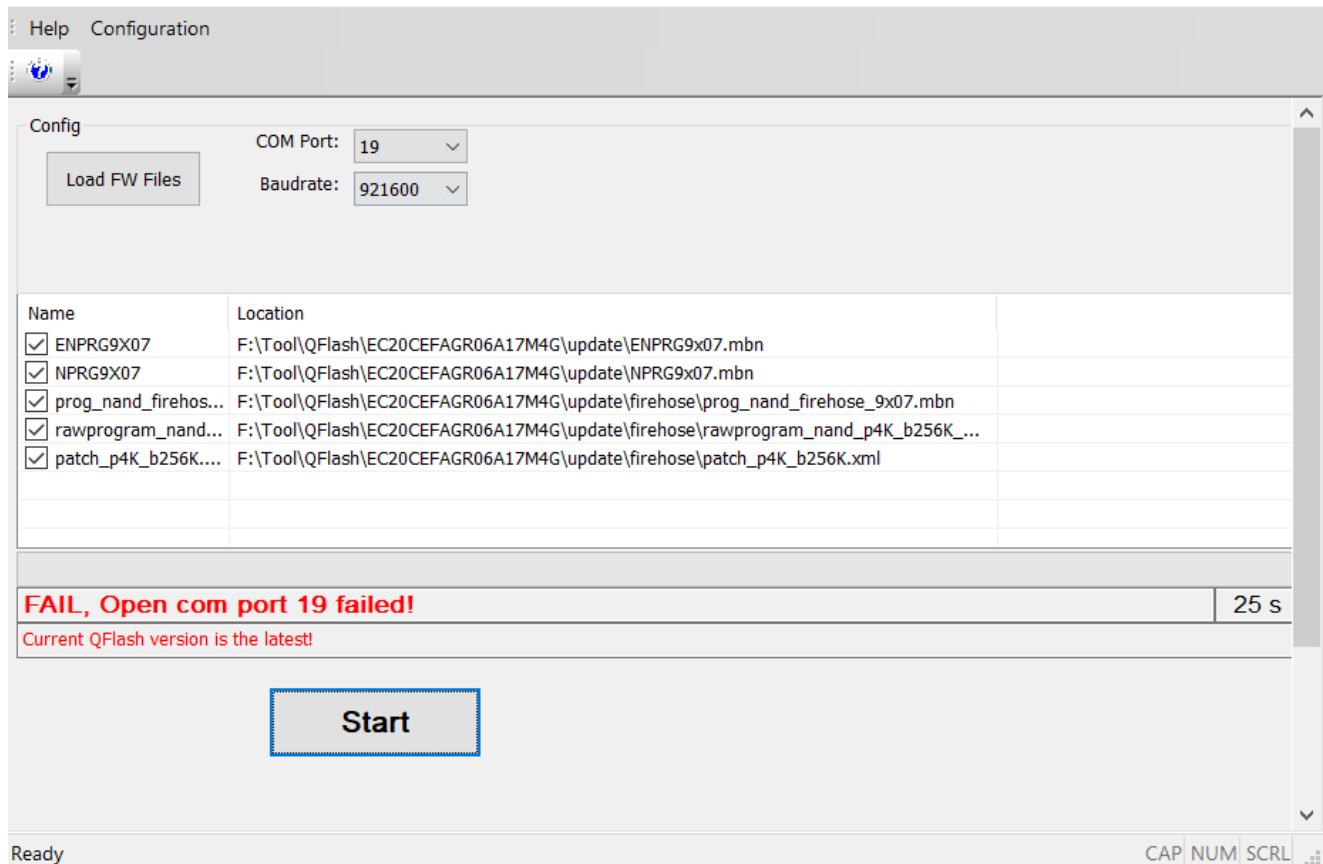


Figure 76: Connected to an Occupied Serial Port (Example 1)

3.2.2. LPWA Modules

For BC92, BC660K and BC950K modules, if the connected serial port is occupied, then the prompt will be as follows:

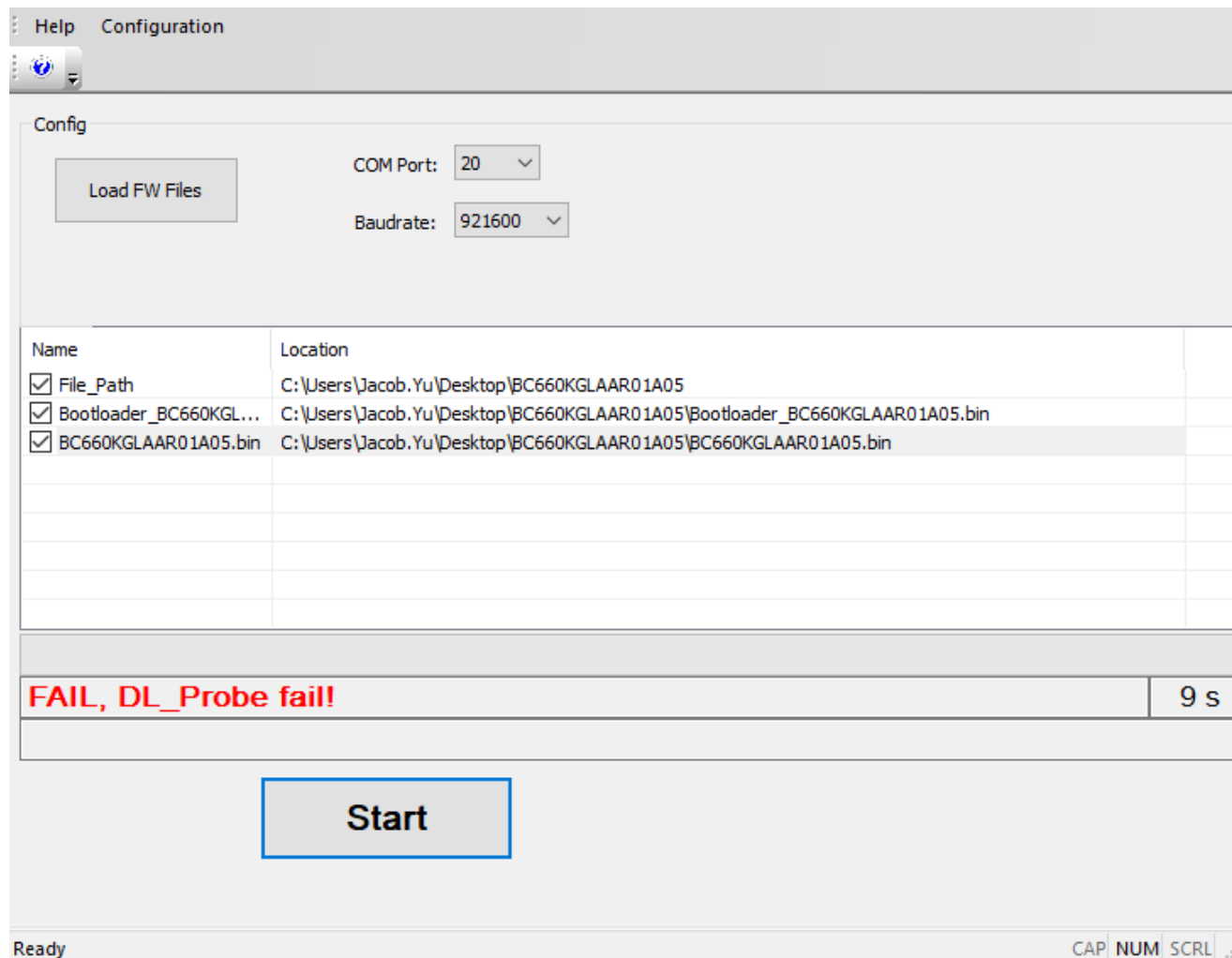


Figure 77: Connected to an Occupied Serial Port (Example 2)

3.3. Selected an Unsupported Baud Rate

3.3.1. GSM Modules

For M66, M95 and MC60 modules, if the selected baud rate is unsupported, then the prompt will be as follows:

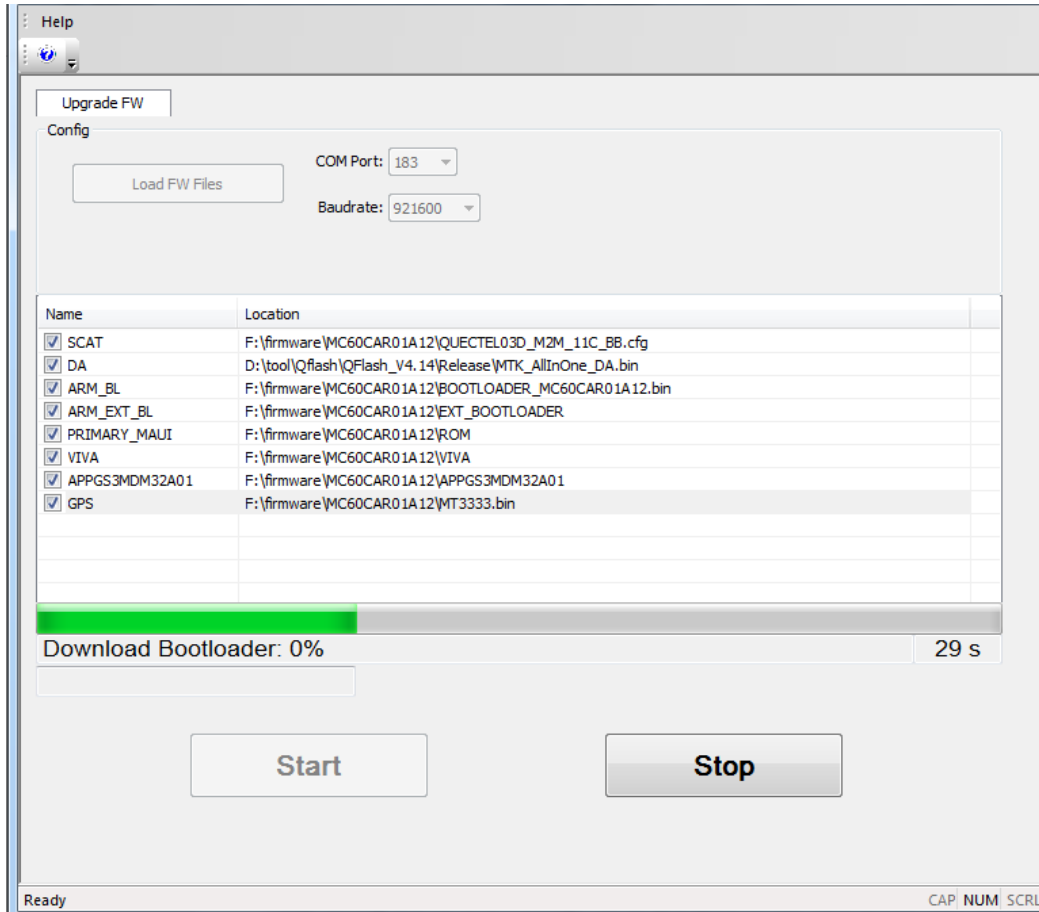


Figure 78: Selected an Unsupported Baud Rate

NOTE

For M66, M95 or MC60, if an unsupported baud rate is selected, the tool will stop running and no error message will be prompted. In such a case, please click the “**Stop**” button to re-select a supported baud rate to restart with.

3.4. Selected an Invalid FW File

3.4.1. GSM Modules

For M65 module, if the selected firmware file is invalid, then the prompt will be as follows:

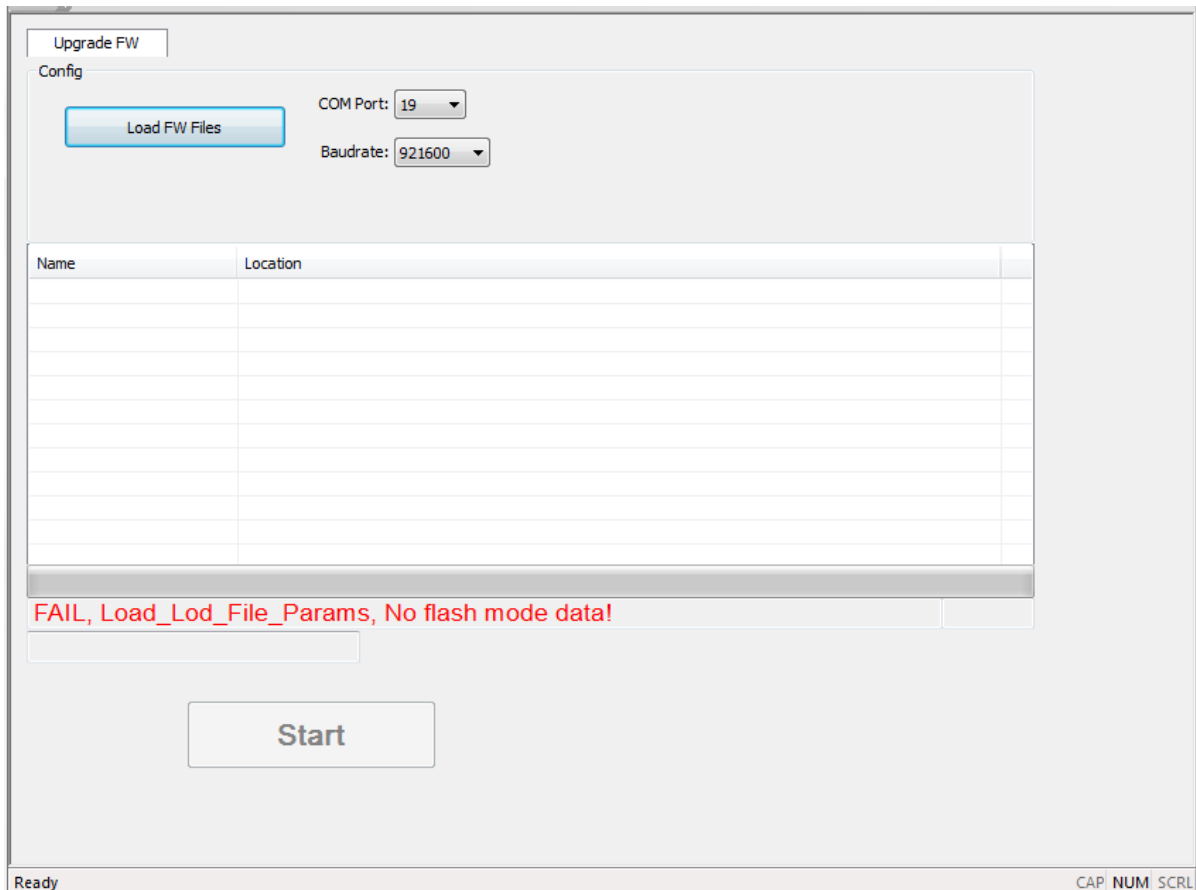


Figure 79: Selected an Invalid FW File (Example 1)

3.4.2. LTE Standard Modules

For EC20-CE, EC21, EC25, EG91, EG95 and EM05 modules, if the selected firmware file is invalid, then the prompt will be as follows:

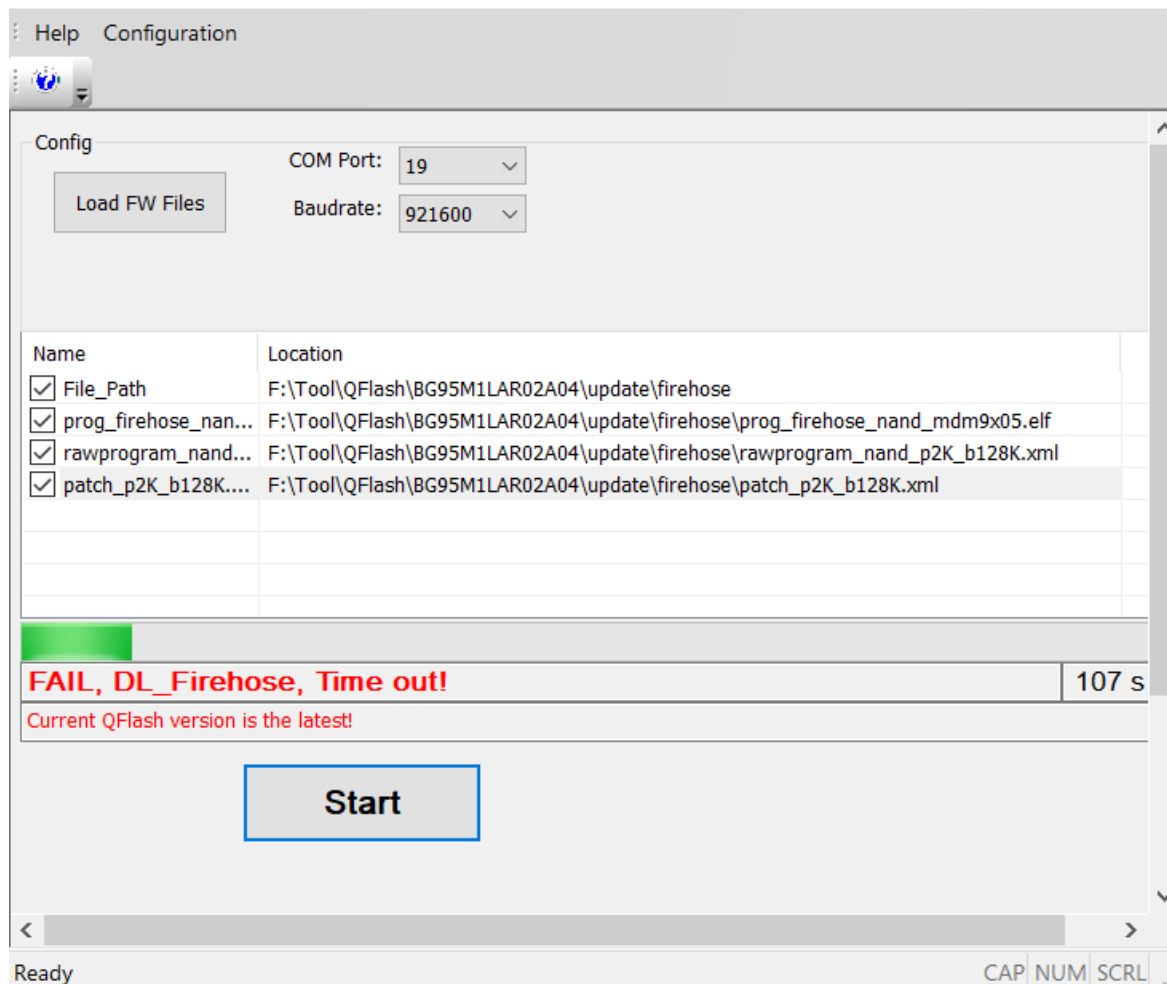


Figure 80: Selected an Invalid FW File (Example 2)

3.4.3. LTE-A&Automotive&LPWA Modules

For EP06, EG06, EM06, EG12, EM12-G, EG18, AG15, AG35, AG215S, AG520R, AG521R, AG525R, AG529R, AG550Q, AG551Q, AG552Q, AG553Q and BG96 modules, if the selected firmware file is invalid, then the prompt will be as follows:

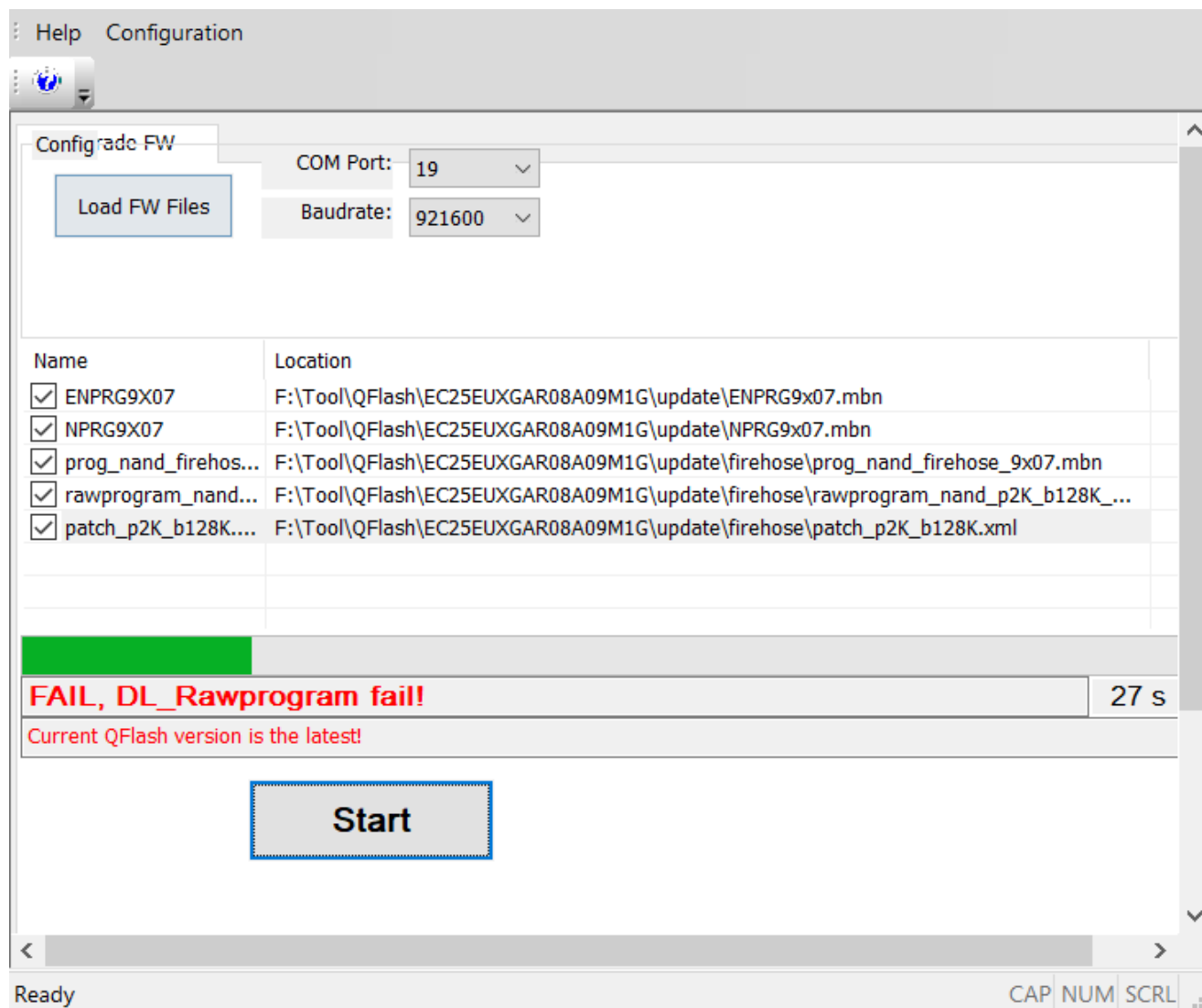


Figure 81: Selected an Invalid FW File (Example 3)

3.4.4. Smart Modules

For SC668S module, if the selected firmware file is invalid, then the prompt will be as follows:

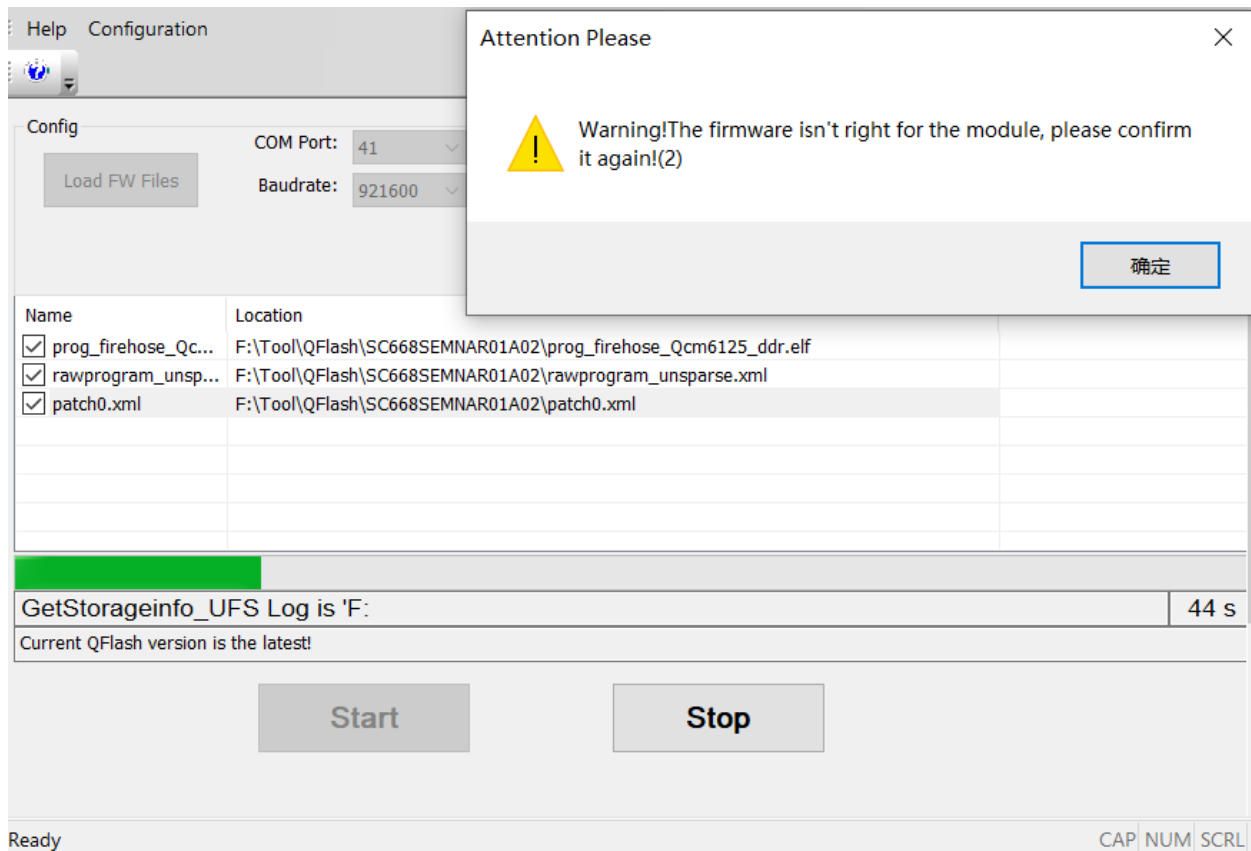


Figure 82: Selected an Invalid FW File (Example 4)

NOTE

SC668S supports eMMC (SC668S...**NA**...) and UFS (SC668S...**UA**...) firmware versions. The module does not support firmware updating between the two different versions. If a wrong version is selected, a popup window as shown above will appear to indicate updating failure.

3.5. Power Supply is Abnormal

3.5.1. 5G<E-A<E Standard&Automotive&LPWA Modules

For RG500Q, RM500Q, EP06, EG06, EM06, EG12, EM12-G, EG18, EC20-CE, EC21, EC25, EG21-G, EG25-G, EG91, EG95, EM05, AG15, AG35, AG215S, AG520R, AG521R, AG525R, AG529R, AG550Q, AG551Q, AG552Q, AG553Q, BG77, BG95 and BG96 modules, If the power supply is abnormal during the upgrade process, then the prompt will be as follows:

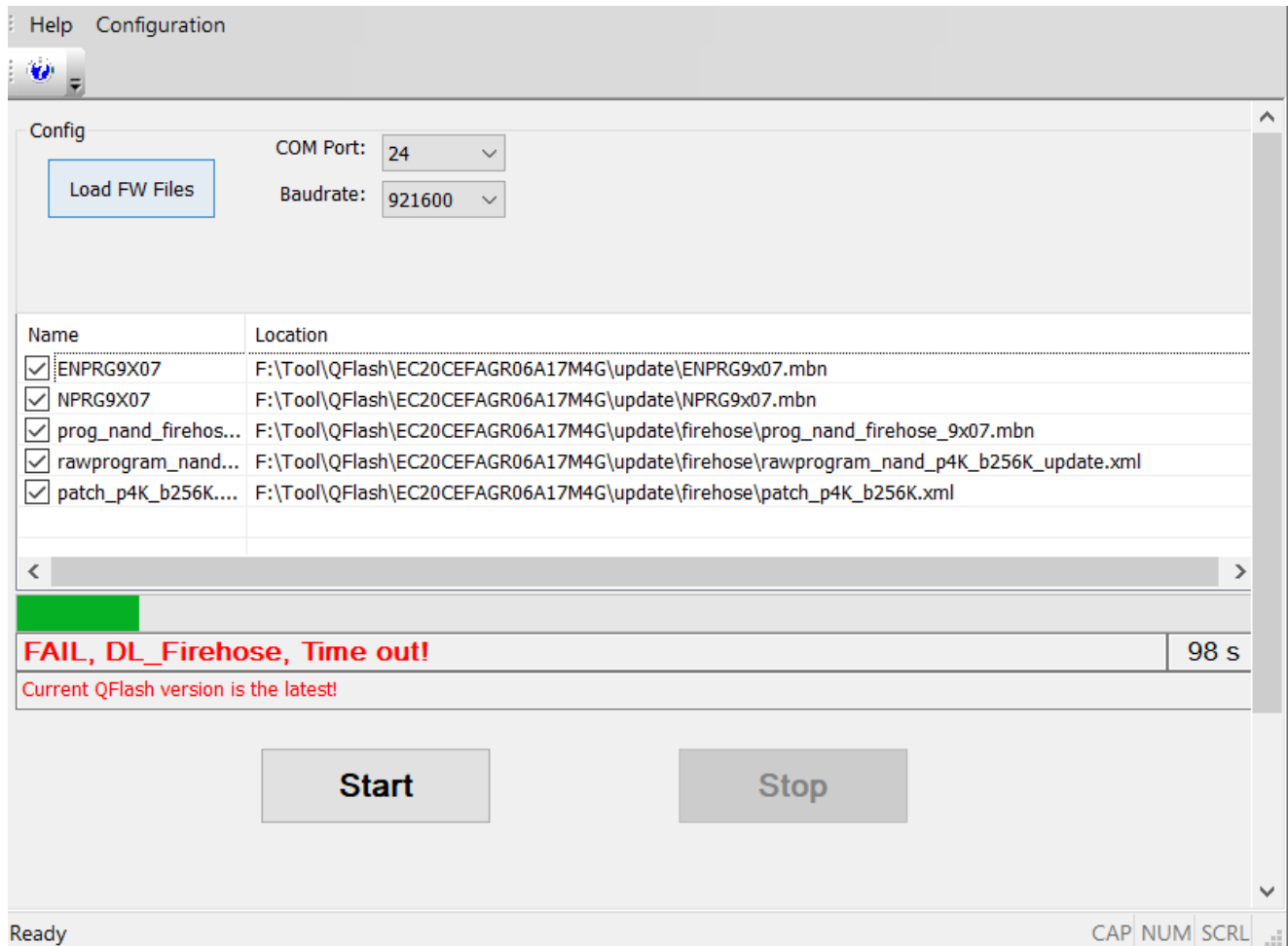


Figure 83: Abnormal Power Supply (Example 1)

3.5.2. Smart Modules

For SC20, SC66 and SC2000E modules, If the power supply is abnormal during the upgrade process, then the prompt will be as follows:

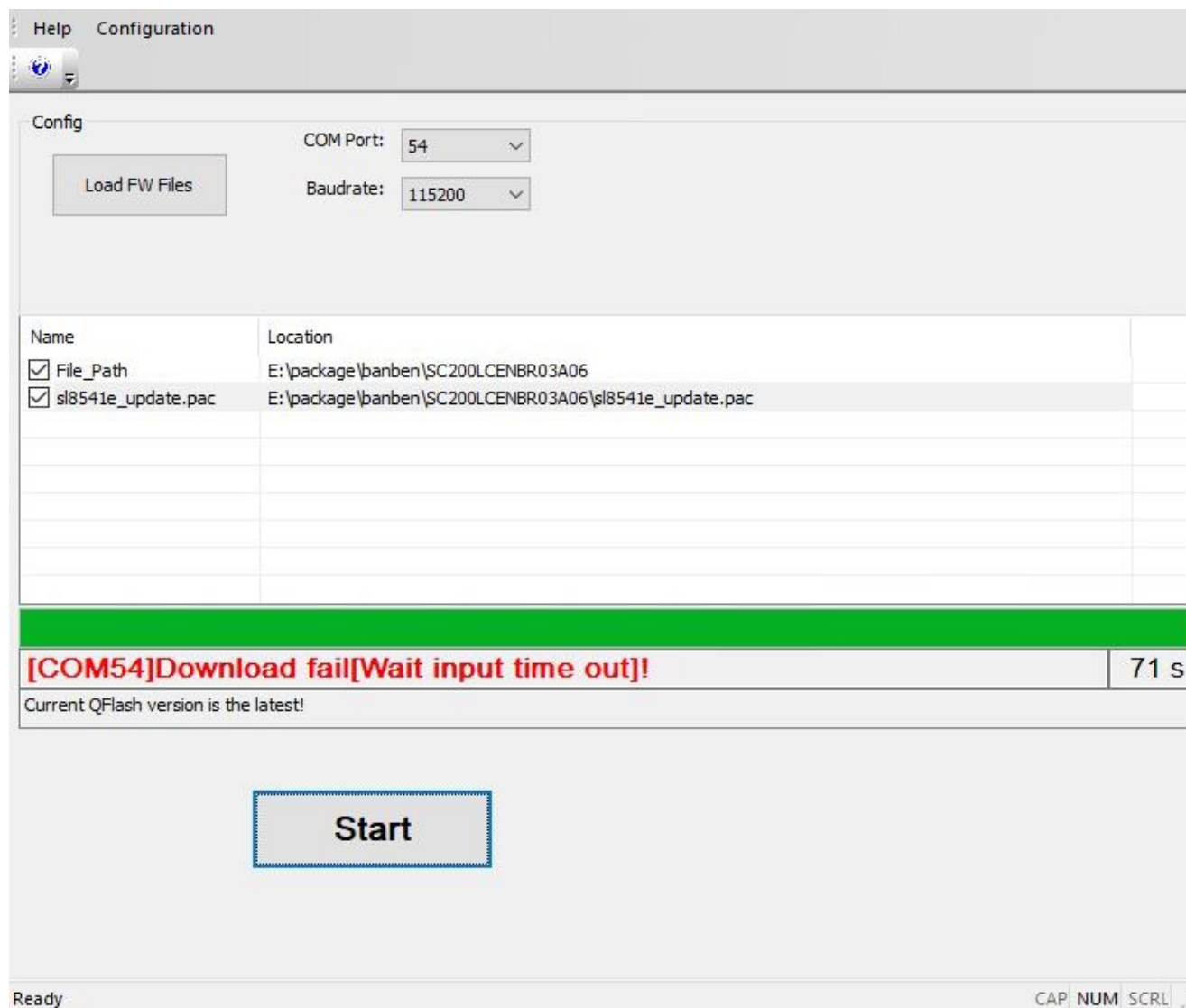


Figure 84: Abnormal Power Supply (Example 2)

For BC92, BC660K and BC950K modules, If the power supply is abnormal during the upgrade process, then the prompt will be as follows:

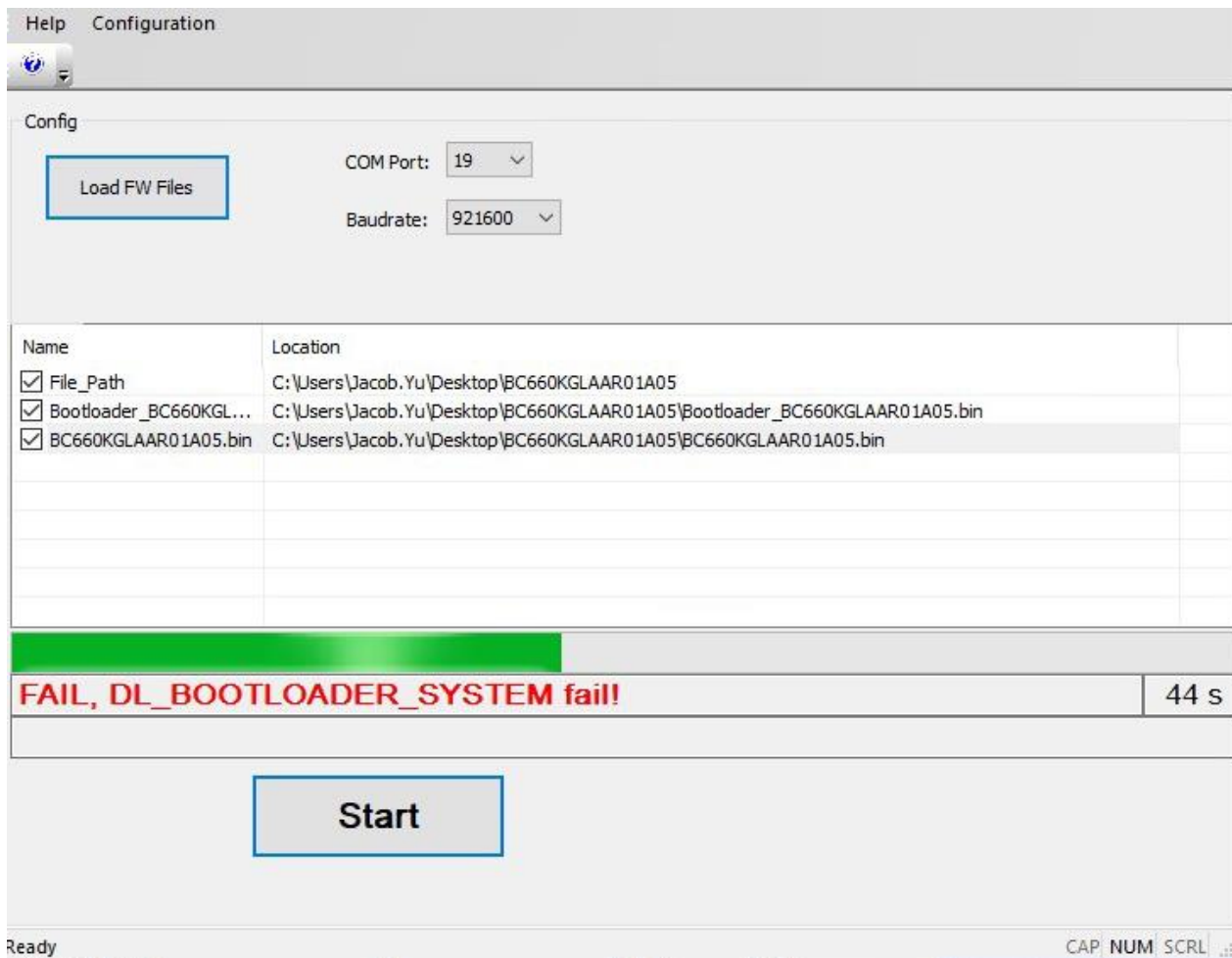


Figure 85: Abnormal Power Supply (Example 3)