

QMulti_DL_CMD User Guide

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About the Document

Revision History

| Version | Date | Author | Description |
|---------|------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.0 | 2020-03-23 | Kawhi HE | First official release |
| 1.1 | 2020-04-29 | Kawhi HE | Added applicable modules in Chapter 1.2. Added firmware upgrade procedures for EC25/ BG95/ BG96 in Chapter 2. |
| 1.2 | 2020-06-02 | Kawhi HE | Added applicable module: M66 in Chapter 1.2. Added firmware upgrade procedures for M66 in Chapter 2. Added settings for QuecOpen firmware upgrade in Chapter 2.1. |
| 1.3 | 2020-09-28 | Anne QIU | Added upgrading procedures for RG500Q/ RM500Q. Added upgrading procedures for BC95-G/ BC66. Added upgrading procedures for SC20. |
| 1.4 | 2020-10-23 | Anne QIU | Upgraded the tool to V2.0 |
| 1.5 | 2020-11-23 | Shirly WANG | Upgraded the tool version to V2.1 |



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1 Introduction

QMulti_DL_CMD is a multi-port firmware upgrade tool. It supports firmware upgrade of 8 modules simultaneously.

This document mainly introduces how to upgrade the firmware of Quectel modules with the tool.

1.1. OS and Version

The tool can run on a PC without installation if the OS is as below:

- Windows 7 (64-bit)
- Windows 10 (64-bit)

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

NOTE

The storage path of the tool and the firmware should NOT contain any spaces or "()", and English characters are preferred.

1.2. Applicable Modules

QMulti_DL_CMD is applicable to the following Quectel modules.

Table 1: Applicable Modules

| LTE Standard Module Series | EC2x: EC20 R2.1/ EC25 |
|----------------------------|----------------------------------------|
| Automotive Module Series | AG35 |
| LPWA Module Series | BGxx: BG95/ BG96 BCxx: BC95-G/ BC66 |



| GSM/GPRS/GNSS Module Series | MC60/ M66 |
|-----------------------------|----------------|
| Smart Module Series | SC20 |
| 5G Module Series | RG500Q/ RM500Q |

NOTE

Quectel modules listed above may include multiple models. Please refer to the corresponding module specifications for details.

1.3. Parameter Introduction

The QMulti_DL_CMD tool supports firmware upgrade of up to 8 modules simultaneously and the parameters of the tool are as below:

Parameter1–8: port number Parameter9: baud rate Parameter10: firmware path

The parameters will be applied to the firmware upgrade command in the following format:

QMulti_DL_CMD_V1.9.exe Parameter1 Parameter2 Parameter3 Parameter4 Parameter5 Parameter6 Parameter7 Parameter8 Parameter9 Parameter10

For actual use, see the commands in Chapter 2.5.

NOTE

If less than 8 serial ports are being used simultaneously, parameters for the unused ports are omitted.



2 Firmware Upgrade Procedures

The firmware can be upgraded through the following five steps with the QMulti_DL_CMD tool.

- 1. Set Multi_Config.ini (only for QuecOpen firmware upgrade)
- 2. Select serial port
- 3. Select baud rate
- 4. Select firmware files
- 5. Upgrade firmware

The following chapters will introduce in detail how to use the tool to upgrade the firmware.

2.1. Set Multi_Config.ini (Only for QuecOpen Firmware Upgrade)

For QuecOpen firmware upgrade, first you need to set the parameter "**OCPU_Name**" in *Multi_Config.ini*. Otherwise, skip this step.

For M66 QuecOpen, set "OCPU_Name" at 6.

| Multi_Config.ini - Notepad | — | × |
|----------------------------|---|---|
| File Edit Format View Help | | |
| [Multi] | | ^ |
| BR_Multi=7 | | |
| Scat_Cfg_File_Path= | | |
| Ctrl_Dl_Type=0 | | |
| OCPU_Name=6 | | |
| | | |

Figure 1: Set Multi_Config.ini



2.2. Select Serial Port

2.2.1. Select COM Port for EC2x/AG35/BGxx/RG500Q/RM500Q

For EC2x/AG35/BGxx/RG500Q/RM500Q, use USB DM port for firmware upgrade.

2.2.2. Select COM Port for MC60/M66/BC95-G

For MC60/M66/BC95-G, use main UART for firmware upgrade.

2.2.3. Select COM Port for BC66

For BC66 module, use Interface 0 for firmware upgrade.

2.2.4. Select COM Port for SC20

For SC20, use HS-USB Diagnostics 9091 port for firmware upgrade.

2.3. Select Baud Rate

There are different baud rate values to be selected and the hardware environment determines whether a specified baud rate can be supported. If not supported, an error message will be returned.

- For firmware upgrade of EC2x/AG35/BG95/RG500Q/RM500Q/SC20, the default baud rate is 115200.
- For firmware upgrade of BG96, set baud rate at 921600. Other baud rates may lead to upgrade failure.
- For firmware upgrade of MC60/M66/BCxx, set baud rate at 460800. Other baud rates may lead to upgrade failure.



2.4. Select Firmware Files

The storage path of the tool and the firmware should NOT contain any spaces or "()", and English characters are preferred.

2.4.1. Select Firmware File for EC2x/AG35/BG95/RG500Q/RM500Q

Select the .mbn file in the *firehose* folder.

| $\leftarrow \rightarrow \cdot \cdot \uparrow$ | > | This | PC > F (F:) > Firmware > AG35CEVAR08A01 | /01T4G > update > | firehose | |
|-----------------------------------------------|---|------|-----------------------------------------|-------------------|--------------|--------|
| 📃 Desktop | * | ^ | Name | Date modified | Туре | Size |
| 👆 Downloads | * | | partition_complete_p2K_b128K.mbn | 2020/2/6 18:14 | MBN File | 8 KB |
| 🔮 Documents | # | | patch_p2K_b128K.xml | 2020/2/6 18:14 | XML Document | 1 KB |
| Pictures | * | | prog_nand_firehose_9x07.mbn | 2020/2/6 18:14 | MBN File | 128 KB |
| firehose | | | rawprogram_nand_p2K_b128K_update.xml | 2020/2/6 18:14 | XML Document | 6 KB |

Figure 2: Firehose Files

NOTE

When *firehose* folder exists in the firmware package, it is recommended to upgrade the firmware in Firehose mode. Otherwise, upgrade in Sahara mode.

2.4.2. Select Firmware File for BG96

Select the .mbn file which needs to be downloaded to the module.

| lame | Date modified | Туре | Size |
|--------------------|------------------|--------------|-----------|
| acdb.mbn | 2020/4/20 21:18 | MBN File | 129 KB |
| apps.mbn | 2020/4/20 21:33 | MBN File | 4,047 KB |
| efs2apps.mbn | 2020/4/20 22:27 | MBN File | 24 KB |
| ENPRG9x06.mbn | 2018/10/31 19:24 | MBN File | 96 KB |
| mba.mbn | 2020/4/20 22:25 | MBN File | 241 KB |
| NPRG9x06.mbn | 2018/10/31 19:25 | MBN File | 96 KB |
| partition.mbn | 2018/7/12 22:26 | MBN File | 1 KB |
| partition_nand.xml | 2019/8/16 22:10 | XML Document | 6 KB |
| ្នំ qdsp6sw.mbn | 2020/4/20 22:26 | MBN File | 23,079 KB |
| rpm.mbn | 2019/5/17 19:13 | MBN File | 153 KB |
| sbl1.mbn | 2019/1/10 17:06 | MBN File | 223 KB |
| sec.dat | 2018/7/12 22:26 | DAT File | 1 KB |
| tz.mbn | 2019/9/7 18:50 | MBN File | 539 KB |

Figure 3: Sahara Files



2.4.3. Select Firmware File for MC60/M66

Select the .cfg file which needs to be downloaded to the module.

| $\leftarrow \rightarrow \land \uparrow$ - \land This | PC > F (F:) > Firmware > MC60CAR01A13V0 | 1 | | |
|--------------------------------------------------------|-----------------------------------------|-----------------|-------------|----------|
| 📃 Desktop 🛛 🖈 ^ | Name | Date modified | Туре | Size |
| 🖊 Downloads 🖈 | dbg | 2020/3/16 18:57 | File folder | |
| 🖆 Documents 🖈 | upgrade | 2020/3/16 18:57 | File folder | |
| 📰 Pictures 🛛 🖈 | APPGS3MDM32A01 | 2020/3/16 18:56 | File | 1 KB |
| firehose | BOOTLOADER_MC60CAR01A13.bin | 2020/3/16 18:56 | BIN文件 | 9 KB |
| Ouectel Custom | BPLGUInfoCustomAppSrcP_MT6261_S00 | 2020/3/16 18:56 | File | 3,509 KB |
| Questel Custom | DbgInfo_11CW1418IOTMP_QUECTEL03D | 2020/3/16 18:56 | File | 794 KB |
| | EXT_BOOTLOADER | 2020/3/16 18:56 | File | 74 KB |
| Quectel_Custom | MT3333.bin | 2020/3/16 18:56 | BIN文件 | 659 KB |
| OneDrive | QUECTEL03D_M2M_11C_BB.cfg | 2020/3/16 18:56 | CFG File | 4 KB |
| | ROM | 2020/3/16 18:56 | File | 1,713 KB |
| This PC | VIVA | 2020/3/16 18:56 | File | 1,072 KB |
| 2D Objects | | | | |

Figure 4: MC60/M66 Firmware File

2.4.4. Select Firmware File for BC95-G

Select the .fwpkg file which needs to be downloaded to the module.

| • | others (F:) 🔸 | firmware | BC95GJBR02A03V02 | • | | - - f j |
|---|---------------|------------|------------------|-----------------|----------|----------------|
| | 共享 ▼ | 刻录 | 所建文件夹 | | | |
| - | 名称 | | ~ | 修改日期 | 类型 | 大小 |
| | 鷆 dbg | | | 2020/7/29 15:13 | 文件夹 | |
| | BC95 | GJBR02A03. | fwpkg | 2020/7/29 15:13 | FWPKG 文件 | 1,117 KB |
| | 🔮 mess | ages.xml | | 2020/7/29 15:13 | XML 文档 | 17,004 KB |

Figure 5: BC95-G Firmware File



2.4.5. Select Firmware File for BC66

Select the .cfg file which needs to be downloaded to the module.

| o | thers (F:) firmware BC66NBR01A11_01.0 | 001V06.01.001V06 | • | • | 47 |
|---|-----------------------------------------|------------------|---------|----------|-----------|
| 鵦 | 新建文件夹 | | | | |
| 1 | 名称 | 修改日期 | 类型 | 大小 | |
| L | 鷆 dbg | 2020/9/17 14:49 | 文件夹 | | |
| L | APPGS3MDM32A01 | 2020/9/17 14:49 | 文件 | 1 KB | |
| L | BC66NBR01A11.bin | 2020/9/17 14:49 | BIN 文件 | 2,451 KB | |
| L | BootLoader_BC66NBR01A11.bin | 2020/9/17 14:49 | BIN 文件 | 47 KB | |
| L | customer_fe8c8b4b-0cf0-4ab4-811a | 2020/9/17 14:49 | DEC 文件 | 469 KB | |
| L | flash_download.cfg | 2020/9/17 14:49 | CFG 文件 | 2 KB | |
| L | floggerBaseTransform_ext.flox | 2020/9/17 14:49 | FLOX 文件 | 211 KB | |
| = | silo_db_ext.sox | 2020/9/17 14:49 | SOX 文件 | 8 KB | |

Figure 6: BC66 Firmware File

2.4.6. Select Firmware File for SC20

Select the .mbn file which needs to be downloaded to the module.

| others (F:) firmware SC20CEPJR06A03_ | BP01.003V01_Android | 7.1.2.01.022V02_up | odate 👻 | ◆ |
|------------------------------------------------|---------------------|----------------------|-------------|---------|
| | | | | ≣ ▼ 🗍 (|
| 名称 | 修改日期 | 类型 | 大小 | |
| lei cache_2.img | 2020/2/21 11:07 | 光盘映像文件 | 8 KB | |
| i cache_3.img | 2020/2/21 11:07 | 光盘映像文件 | 8 KB | |
| devinfo | 2018/4/4 13:45 | 文件 | 616 KB | |
| emmc_appsboot.mbn | 2020/2/21 11:07 | MBN 文件 | 502 KB | |
| gpt_backup0.bin | 2020/2/21 11:07 | BIN 文件 | 17 KB | |
| gpt_main0.bin | 2020/2/21 11:07 | BIN 文件 | 17 KB | |
| NON-HLOS.bin | 2020/2/21 11:07 | BIN 文件 | 59,058 KB | |
| 📄 patch0.xml | 2020/2/21 11:07 | XML 文档 | 7 KB | |
| 🕑 persist 1.img | 2020/2/21 11:07 | 光盘映像文件 | 4,780 KB | |
| prog_emmc_firehose_8909_ddr.mbn | 2020/2/21 11:07 | MBN 文件 | 275 KB | |
| rawprogram_unsparse.xml | 2020/2/21 11:07 | XML 文档 | 15 KB | |
| 🕑 recovery.img | 2020/2/21 11:07 | 光盘映像文件 | 18,856 KB | |
| 📄 rpm.mbn | 2020/2/21 11:07 | MBN 文件 | 159 KB | |
| sbl1.mbn | 2020/2/21 11:07 | MBN 文件 | 238 KB | |
| sec.dat | 2020/2/21 11:07 | DAT 文件 | 1 KB | |
| 🕑 splash.img | 2020/2/21 10:50 | 光盘映像文件 | 26 KB | |
| | 2020/2/24 11 07 | NZ PER BAR (BE-P-1/4 | 101.000 //0 | |

Figure 7: SC20 Firmware File



2.4.7. Select Firmware File for M66 QuecOpen

Select the .cfg file which needs to be downloaded to the module.



Figure 8: M66 QuecOpen Firmware File

NOTE

Before upgrading M66 QuecOpen firmware, set "**OCPU_Name**" parameter at 6 in *Multi_Config.ini*. For details, see *Chapter 2.1*.



2.5. Upgrade Firmware

Step 1: Open the terminal on the system and input the following command.



Figure 9: Command for Firmware Upgrade

Step 2: Press the Enter key to execute command and wait for download to succeed.



Figure 10: Upgrade Process



Х

Command Prompt

| [7]DL-Rawprogram(99.87%) |
|----------------------------------------------------------------------|
| [7]DL-Rawprogram(100.00%) |
| [7]DL-Rawprogram, wait for 1 seconds |
| [7]DL-Rawprogram, wait for 0 seconds |
| [7]FW upgrade success. |
| [8]DL-Rawprogram(34.34%) |
| [8]DL-Rawprogram(40.04%) |
| [8]DL-Rawprogram(45.72%) |
| [8]DL-Rawprogram(47.17%) |
| [8]DL-Rawprogram(53.12%) |
| [8]DL-Rawprogram(59.04%) |
| [8]DL-Rawprogram(64.98%) |
| [8]DL-Rawprogram(70.91%) |
| [8]DL-Rawprogram(71.68%) |
| [8]DL-Rawprogram(77.66%) |
| [8]DL-Rawprogram(83.74%) |
| [8]DL-Rawprogram(89.93%) |
| [8]DL-Rawprogram(96.11%) |
| [8]DL-Rawprogram(96,19%) |
| [8]DL-Rawprogram(97.42%) |
| [8]DL-Rawprogram(98.64%) |
| [8]DL-Rawprogram(99.87%) |
| [8]DL-Rawprogram(100.00%) |
| [8]DL-Rawprogram, wait for 1 seconds |
| [8]DL-Rayprogram, wait for 0 seconds |
| [8]FW upgrade success. |
| |
| F:\test\tools\QMulti\QMulti DL CMD V1.6\QMulti DL CMD V1.6\Release>_ |
| |

Figure 11: Upgrade Success

NOTES

- 1. For MC60, when it prompts "Waiting (Module Power On Reset)", restart the module manually.
- 2. For BC66, when it prompts "[INFO]Start connect with target,Please reset DUT...", restart the module manually.
- 3. For BC95-G module, when it prompts "Reset", restart the module manually.