Upgrade Quectel Module - GL.iNet Router Docs 4

GL.iNet

4–5 minutes

Upgrade Quectel Module Firmware¶

Preperation¶

1. Ensure your router is configured to Internet access.

2. Connect a computer or laptop to the router via Wi-Fi or Ethernet cable.

Upgrade steps¶

For GL-X3000/GL-XE3000¶

Method 1. Upgrade via GL.iNet GUI

1. Download the corresponding module firmware from the bottom of this tutorial.

2. Log in to your router's web admin panel, navigate to **SYSTEM** -> **Upgrade** -> **Module Local Upgrade**, and upload the module firmware (in .zip format).
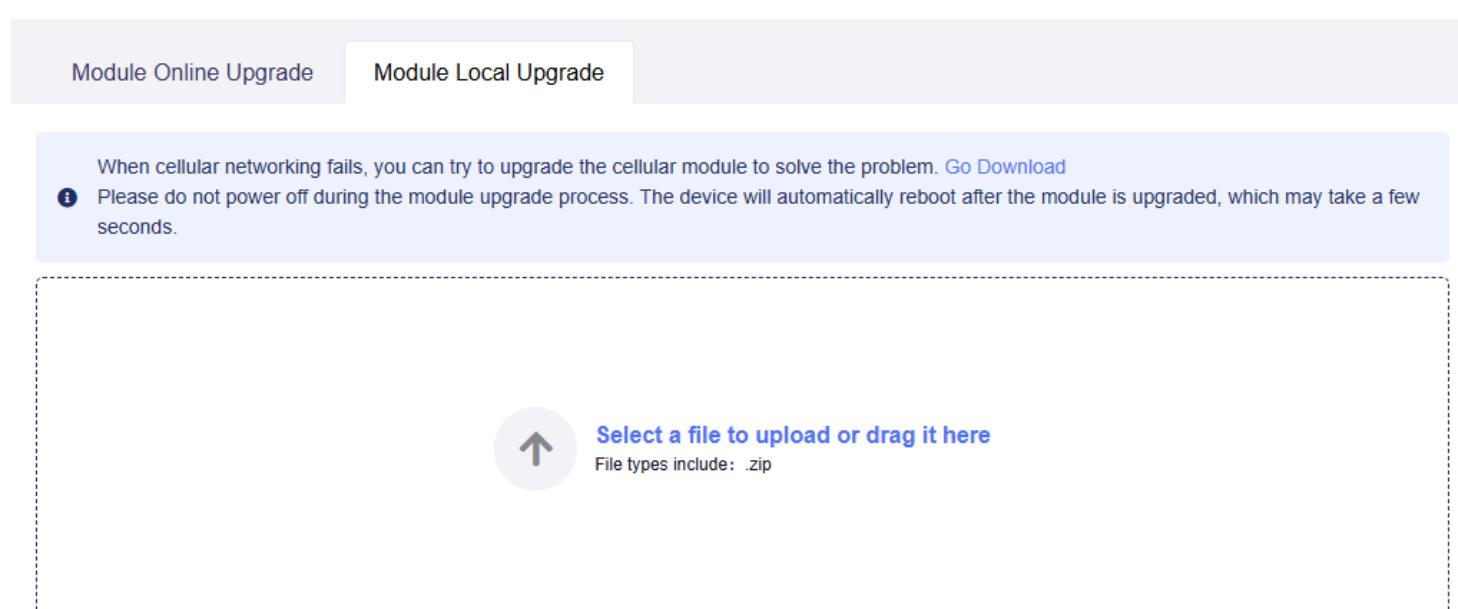
Method 2. Upgrade via SSH

Take the upgrade of the RM520N module as an example.

1. SSH log in to your router. Please refer to [this link](#).

2. Enter the command below to download the module firmware.

```
wget https://fw.gl-inet.com/download/RM520GL-
modem_firmware/RM520NGLAAR03A03M4G_01.201.01.201.zip -P /
```

```
root@GL-X3000:~# wget https://fw.gl-inet.com/download/RM520GL-modem_firmware/RM520NGLAAR03A03M4G_01.201.01.201.zip -P /
Downloading 'https://fw.gl-inet.com/download/RM520GL-modem_firmware/RM520NGLAAR03A03M4G_01.201.01.201.zip'
Connecting to 172.67.145.231:443
Writing to 'RM520NGLAAR03A03M4G_01.201.01.201.zip'
RM520NGLAAR03A03M4G_ 100% |*******************************|  127M  0:00:00 ETA
Download completed (134022296 bytes)
```

3. Enter the command below to decompress the module firmware.

```
unzip /RM520NGLAAR03A03M4G_01.201.01.201.zip -d /
RM520NGLAAR03A03M4G_01.201.01.201
```

```
root@GL-X3000:~#
root@GL-X3000:~# unzip /RM520NGLAAR03A03M4G_01.201.01.201.zip -d /RM520NGLAAR03A03M4G_01.201.01.201
Archive:  /RM520NGLAAR03A03M4G_01.201.01.201.zip
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/md5.txt
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/contents.xml
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/devcfg_low_ddr.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/devcfg.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/oemdata.ubi
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/tz.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/xbl_config.elf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/NON-HLOS.ubi
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/ipa_fws.elf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/multi_image.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/partition_nand.xml
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/usrdata.ubi
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/apdp.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/multi_image_qti.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/logfs_ufs_8mb.bin
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/sdxlemur-boot.img
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/sdxlemur-sysfs.ubi
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/xbl.elf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/aop.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/uefi.elf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/abl.elf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/partition.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/xbl_ramdump.elf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/sdxlemur-recoveryfs.ubi
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/oemapp.ubi
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/hyp.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/rawprogram_nand_p4K_b256K_update.xml
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/prog_firehose_lite.elf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/partition_complete_p4K_b256K.mbn
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/patch_p4K_b256K.xml
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/Quectel_RM520N-GL-AA_Firmware_Release_Notes_V0303_01.201.01.201.pdf
  inflating: /RM520NGLAAR03A03M4G_01.201.01.201/Quectel_RM520N-GL-AA_??????????????????????_V0303_01.201.01.201.pdf
root@GL-X3000:~#
```

4. Enter the command below to obtain the QFirehose from GL.iNet server.

```
cd /usr/bin/ && wget https://fw.gl-inet.com/tools/
quectel_tool/QFirehose-mtk7981a-sha256-c0b944
```

Grant it executable permissions and verify the sha256 value of the QFirehose file.

```
chmod 775 QFirehose-mtk7981a-sha256-c0b944  && sha256sum
QFirehose-mtk7981a-sha256-c0b944
```

```
root@GL-X3000:/usr/bin#
root@GL-X3000:/usr/bin# cd /usr/bin/ && wget https://fw.gl-inet.com/tools/quectel_tool/QFirehose-mtk7981a-sha256-c0b944
Downloading 'https://fw.gl-inet.com/tools/quectel_tool/QFirehose-mtk7981a-sha256-c0b944'
Connecting to 172.67.145.231:443
Writing to 'QFirehose-mtk7981a-sha256-c0b944'
QFirehose-mtk7981a-s 100% |*******************************|  106k  0:00:00 ETA
Download completed (109208 bytes)
root@GL-X3000:/usr/bin#
root@GL-X3000:/usr/bin#
root@GL-X3000:/usr/bin# chmod 775 QFirehose-mtk7981a-sha256-c0b944  && sha256sum QFirehose-mtk7981a-sha256-c0b944
c0b944f62e5ef9e83a71775b494f96d661b0ffafa3490ddb901e460084cd0ffb  QFirehose-mtk7981a-sha256-c0b944
root@GL-X3000:/usr/bin#
```

5. Upgrade the module firmware using the QFirehose command, as shown below.

Note: Please replace "/RM520NGLAAR03A03M4G_01.201.01201" with the actual module firmware folder path.

```
QFirehose-mtk7981a-sha256-c0b944 -f /
RM520NGLAAR03A03M4G_01.201.01.201
```

```
root@GL-X3000:/usr/bin#
root@GL-X3000:/usr/bin# /usr/bin/QFirehose-mtk7981a-sha256-c0b944 -f /RM520NGLAAR03A03M4G_01.201.01.201
[000.000]: Version: QFirehose Linux_Android_V1.4.13
[000.000]: Builded: Apr 12 2023 03:15:42
[000.000]: Find md5 check file </RM520NGLAAR03A03M4G_01.201.01.201/md5.txt>
[000.002]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/contents.xml pass
[000.004]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/abl.elf pass
[000.006]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/aop.mbn pass
[000.007]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/apdp.mbn pass
[000.008]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/devcfg_low_ddr.mbn pass
[000.010]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/devcfg.mbn pass
[000.010]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/partition_complete_p4K_b256K.mbn pass
[000.011]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/patch_p4K_b256K.xml pass
[000.018]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/prog_firehose_lite.elf pass
[000.018]: md5 checking: /RM520NGLAAR03A03M4G_01.201.01.201/update/firehose/rawprogram_nand_p4K_b256K_update.xml pass
```

6. Wait a few minutes. When the upgrade is completed, the system will prompt "Upgrade module successfully".

```
[035.133]: upgrade progress 100% 177271995/177271995
[035.133]: send finished
[035.135]: <response value="ACK" rawmode="false" />
[035.135]: <power DelayInSeconds="10" value="reset" />
[035.135]: <log value="INFO: Calling handler for power" />
[035.135]: <log value="INFO: Will issue reset/power off 10000000 useconds, if this hangs check if watchdog is enabled" />
[035.135]: <log value="INFO: bsp_target_reset() 1" />
[035.136]: <response value="ACK" rawmode="false" />
[036.137]: THE TOTAL DOWNLOAD TIME IS 28.612 s
[036.137]: Upgrade module successfully.
root@GL-X3000:/usr/bin#
```

7. Reboot your router, then SSH log in to your router again.

8. Run the following command to double confirm if the module upgrade was successful.

```
gl_modem -B 0001:01:00.0 AT AT+QGMR
```

```
root@GL-X3000:~# gl_modem -B 0001:01:00.0 AT AT+QGMR

RM520NGLAAR03A03M4G_01.201.01.201

OK
root@GL-X3000:~#
root@GL-X3000:~#
```

For GL-MiFi/GL-XE300/GL-X750/GL-E750¶

Take the upgrade of the EM060K module as an example.

1. Prepare a USB flash drive. Download the corresponding module firmware to the USB flash drive from the bottom of this tutorial, then decompress the. zip file and place it in the root directory of the USB drive.

2. Plug the USB flash drive into your router. Then refer to [this link](#) to SSH log in to your router.

3. Enter the command df - h to check the USB drive mounting path, and record the path.

```
root@GL-E750:~# df -h
Filesystem                Size      Used Available Use% Mounted on
/dev/root                18.3M     18.3M         0 100% /rom
tmpfs                    59.2M      1.3M     57.9M   2% /tmp
/dev/ubi0_1              93.3M    272.0K     88.3M   0% /overlay
overlayfs:/overlay       93.3M    272.0K     88.3M   0% /
tmpfs                   512.0K         0    512.0K   0% /dev
/dev/sdb1                13.2G    197.5M     13.0G   1% /mnt/sdb1
```

4. Enter the command `ls -l` to check the file folder of module firmware.

```
root@GL-E750:~# ls -l /mnt/sdb1
drwxrwxrwx    3 root     root        32768 Aug 21  2025 EM060KGLAAR01A12M2GA
-rwxrwxrwx    1 root     root     91992921 Aug 21  2025 EM060KGLAAR01A12M2GA.zip
drwxrwxrwx    2 root     root        32768 Dec 19  2024 System Volume Information
root@GL-E750:~#
```

5. Enter the command below to obtain the QFirehose from GL.iNet server.

```
cd /usr/bin/ && wget https://fw.gl-inet.com/tools/
quectel_tool/QFirehose-ar9531-sha256-b2297e
```

Grant it executable permissions and verify the sha256 value of the QFirehose file.

```
chmod 775 /usr/bin/QFirehose-ar9531-sha256-b2297e &&
sha256sum /usr/bin/QFirehose-ar9531-sha256-b2297e
```

```
root@GL-E750:~#
root@GL-E750:~# cd /usr/bin/ && wget https://fw.gl-inet.com/tools/quectel_tool/QFirehose-ar9531-sha256-b2297e
--2025-08-21 09:38:40--  https://fw.gl-inet.com/tools/quectel_tool/QFirehose-ar9531-sha256-b2297e
Resolving fw.gl-inet.com... 172.67.145.231, 104.21.95.157, 2606:4700:3035::ac43:91e7, ...
Connecting to fw.gl-inet.com|172.67.145.231|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 61525 (60K) [application/x-elf]
Saving to: 'QFirehose-ar9531-sha256-b2297e'

QFirehose-ar9531-sha256-b2297e          100%[===================================================================================>

2025-08-21 09:38:46 (903 KB/s) - 'QFirehose-ar9531-sha256-b2297e' saved [61525/61525]

root@GL-E750:/usr/bin#
root@GL-E750:/usr/bin# chmod 775 /usr/bin/QFirehose-ar9531-sha256-b2297e && sha256sum /usr/bin/QFirehose-ar9531-sha256-b2297e
b2297e01fd3c3ccd38891b465cb4a2a0f4dfd27367c7e7b5a330c41e4e5f0e68  /usr/bin/QFirehose-ar9531-sha256-b2297e
root@GL-E750:/usr/bin#
```

6. Upgrade the module firmware using the QFirehose command, as shown below.

Note: Please replace "/mnt/sdb1/EM060KGLAAR01A12M2GA" with the actual module firmware folder path.

```
/usr/bin/QFirehose-ar9531-sha256-b2297e -f /mnt/sdb1/
EM060KGLAAR01A12M2GA
```

```
root@GL-E750:/usr/bin#
root@GL-E750:/usr/bin# /usr/bin/QFirehose-ar9531-sha256-b2297e -f /mnt/sdb1/EM060KGLAAR01A12M2GA
[000.000]: Version: QFirehose_Linux_Android_V1.4.7
[000.026]: Builded: Apr  9 2023 12:27:46
[000.046]: Find md5 check file </mnt/sdb1/EM060KGLAAR01A12M2GA/md5.txt>
[000.097]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/contents.xml pass
[000.233]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/appsboot.mbn pass
[000.246]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/devcfg.mbn pass
[000.254]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/firehose/partition_complete_p2K_b128K.mbn pass
[000.256]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/firehose/patch_p2K_b128K.xml pass
[000.300]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/firehose/prog_nand_firehose_9x55.mbn pass
[000.319]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/firehose/rawprogram_nand_p2K_b128K_update.xml pass
[000.322]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/partition.mbn pass
[000.324]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/partition_nand.xml pass
[000.397]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/rpm.mbn pass
[000.492]: md5 checking: /mnt/sdb1/EM060KGLAAR01A12M2GA/update/sbl1.mbn pass
```

7. Wait a few minutes. When the upgrade is completed, the system will prompt "Upgrade module successfully".

```
085.965]: upgrade progress 100% 122474124/122474124
085.967]: <log value="Finished sector address 0"/>
085.967]: send finished
085.967]: <response value="ACK" rawmode="false" />
085.968]: <power value="reset" />
085.970]: <log value="Inside handlePower() - Requested POWER_RESET"/>
085.970]: <response value="ACK" />
085.971]: gl-sdk4-modem-git-2025.071.23487-ae13069/quec_UPGRADE/firehose_protocol.c fh_send_cmd 599 fail
086.973]: THE TOTAL DOWNLOAD TIME IS 46.559 s
086.973]: Upgrade module successfully.
root@GL-E750:/usr/bin#
```

8. Reboot your router, then SSH log in to your router again.

9. Run the following command to double confirm if the module upgrade was

successful.

```
root@GL-E750:~# gl_modem AT AT+QGMR

AT+QGMR
EM060KGLAAR01A12M2GA

OK
root@GL-E750:~#
```

Quectel module firmware download URL¶

EP06-A: https://fw.gl-inet.com/download/EP06A-modem-firmware/EP06ALAR02A08M4G_01.009.01.009.zip

EP06-E: https://fw.gl-inet.com/download/EP06E-modem-firmware/EP06ELAR04A22M4G.zip

EM060K: https://fw.gl-inet.com/download/EM060K-modem-firmware/EM060KGLAAR01A12M2GA.zip

RM520N-GL_AA: https://fw.gl-inet.com/download/RM520GL-modem_firmware/RM520NGLAAR03A04M4G_01.202.01.202.zip

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