

Product Change Notification

Topic SARA-R404M-00B Firmware Update
UBX-18053670

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1 Affected Products

Product Name	Order Code	Type No (Old)	Type No (New)	Remarks
SARA-R404M	SARA-R404M-00B	SARA-R404M-00B-00	SARA-R404M-00B-01	

2 Type of Change

- Hardware modification
- Firmware update
- Documentation update
- Others

3 Description of Change

A new firmware release is available for the affected product and will be applied in production according to the Schedule below. The changes made on the firmware are as follows:

- Change requests (CR# 3507921 and CR# 3595162) from the chipset supplier for 'Semaphore check correction for PDSCH'.
- Change request (CR# 3617900) from the chipset supplier for 'Device attach timeout during test in Verizon lab'.
- [u-blox id 2580] The device crashes when the TCP socket writes partial data under low signal conditions or network congestion.
- [u-blox id 2608] Replacement of the FOTA Update Agent from a full file to a delta file.
- [u-blox id 2684] AT interface lockup with USOWR and partial write.

Note: Change to module behavior as a result of changes made on the firmware:

With the new firmware, if either +USOWR or +USOST AT commands are executed while the RRC connection is idle (occurs after 10 seconds of inactivity) an error result code will be issued, and the AT commands will need to be reissued.

With the +USOWR AT command, when the RRC goes idle (if 10 s of inactivity occurs) sometime before an AT+USOWR, the host will see:

Command	Response	Description
AT+USOWR=0,10,"31323334353637380D0A"	+CME ERROR: operation not allowed	
AT+USOER	+USOER: 11	11 = "EWOULDBLOCK" – Current operation would block, try again

With the +USOST AT commands, when the RRC goes idle (if 10 s of inactivity occurs) sometime before an AT+USOST, the host will see:

Command	Response	Description
AT+USOST=0,"172.126.88.1",2233,10,"31323334353637380D0A"	+CME ERROR: buffer full	
AT+USOER	+USOER: 11	11 = "EWOULDBLOCK" – Current operation would block, try again

The firmware version can be identified according to the type number, as follows:

Old type number	Current firmware version	New type number	New firmware version
SARA-R404M-00B-00	Modem: K0.0.00.00.07.06 Application: n/a	SARA-R404M-00B-01	Modem: K0.0.00.00.07.08 Application: n/a

The modem and application versions can be polled from the module by sending the ATI command. For details, see the SARA-R4 series AT commands manual [1]. The firmware is fully tested and has passed all the release tests in u-blox.

4 Schedule

Firmware	Available
First Shipment Date	11-Sep-2018

5 Customer Impact and Recommended Action

The product with the new type number is functionally equivalent to the previous version. Certification grants for the new firmware version are achieved. The customer must update their end device certification with the Operator via a paperwork certification submission that indicates the new firmware version.

It is strongly recommended to upgrade SARA-R404M-00B-00 units to the new firmware. Failure to upgrade to the new firmware may result in future operability issues of critical severity.

u-blox has taken utmost care to ensure full backward compatibility to the previous version. A system check before deployment in production is however still recommended.

5.1 Replacement of product that is in stock and not yet activated

For affected product that is in stock and not yet activated, please assist us in planning a replacement program by providing your needs to our sales team.

5.2 Upgrade of product via Firmware over the Air (FOTA)

To update fielded activated product, a FOTA upgrade via UFTP method is provided. Please contact u-blox support team for support.

A FOTA upgrade package is delivered as two phases:

- K76_to_K78-Phase1.pkg
- K76_to_K78-Phase2.pkg

In the Phase 1 package, the FOTA Update Agent is updated from a full file to delta file Agent. In the Phase 2 package, the remaining firmware changes are executed. This two package method substantially reduces the overall package size.

5.3 Procedure for FOTA upgrade via UFTP method

1. Verify existing / current firmware version via AT+I command

It should be K0.0.00.00.07.06.

2. Set up a FTP connection:

```
AT+UFTP=0, "<ip_address>"
AT+UFTP=7, <server_port_number>
AT+UFTP=2, "<username>"
AT+UFTP=3, "<password>"
AT+UFTP=4, "<account>"
AT+UFTP=5, <timeout_seconds>
AT+UFTP=6, <ftp_mode: 1-passive, 0-active>
AT+UFTPC=1
```

The +UUFTPCR: 1,1 URC is issued to confirm a successful connection.

3. Download the phase-1 file from the FTP server

```
AT+UFTPC=100, "<package_path>/K76_to_K78-Phase1.pkg"
```

4. After the download is finished (+UUFTPCR: 100, 1), start the FOTA update:

```
AT+UFWINSTALL
```

It should reboot shortly after (< 2 minutes), do not remove the power from the device before it reboots.

5. Setup a FTP connection:

```
AT+UFTP=0, "<ip_address>"
AT+UFTP=7, <server_port_number>
AT+UFTP=2, "<username>"
AT+UFTP=3, "<password>"
AT+UFTP=4, "<account>"
AT+UFTP=5, <timeout_seconds>
AT+UFTP=6, <ftp_mode: 1-passive, 0-active>
AT+UFTPC=1
```

The +UUFTPCR: 1,1 URC is issued to confirm a successful connection.

6. Download the phase-2 file from the FTP server:

```
AT+UFTPC=100, "<package_path>/K76_to_K78-Phase2.pkg"
```

7. After the download is finished (+UUFTPCR: 100, 1), start the FOTA update:

```
AT+UFWINSTALL
```

It should reboot after 15-20 minutes, do not remove the power from the device before it reboots.

8. Verify firmware version via the AT command

It should be K0.0.00.00.07.08.

6 Known bugs and limitation

See the SARA-R404M-00B IP Information Note [3].

7 Reference Documents

- [1] SARA-R4 / SARA-N4 series AT Commands Manual (UBX-17003787)
- [2] SARA-R4 / SARA-N4 series Data Sheet (UBX-16024152)
- [3] SARA-R4 / SARA-N4 series System Integration Manual (UBX-16029218)
- [4] SARA-R404M-00B IP Information Note (UBX-17047084)