

Product change note

Topic SARA-R410M-02B PCN
UBX-22005059 C1-Public
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1 Affected products

Product name	Ordering code	Type number (OLD)	Type number (NEW)	Remarks
SARA-R410M	SARA-R410M-02B	SARA-R410M-02B-03	SARA-R410M-02B-04	

2 Type

- | | |
|--|--|
| ☐ Product status change | ☒ Documentation update |
| ☐ Hardware/component change | ☐ Certification information |
| ☒ Firmware/software update | ☐ Security advisory |
| ☐ Label change | ☐ Other |

3 Description

u-blox has released a new firmware for the above listed products. The new firmware includes improved robustness and reliability. For more details, see appendix [A](#).

The modem version will remain unchanged while the application version will change as indicated in the table below:

Old type number	Current firmware version	New type number	New firmware version
SARA-R410M-02B-03	Modem: L0.0.00.00.05.12 Application: A.02.19	SARA-R410M-02B-04	Modem: L0.0.00.00.05.12 Application: A.02.21

The modem and application version can be polled from the module by sending ATI9 commands. For more details, see the u-blox SARA-R4 series AT commands manual [\[1\]](#).

The firmware is fully tested and has passed all the u-blox release tests. The new firmware will be applied in production according to the schedule below.

4 Schedule

Product type number (new)	Sample availability date	Estimated first shipment date ¹
SARA-R410M-02B-04	21 st April 2022	August 2022

¹ The estimated first shipment date is the forecasted date when a customer may expect to receive the changed product with the new type number. This is determined by the estimated date of inventory depletion on the PCN issue date. This may be affected by fluctuations in supply and demand. Consequently, although customers should be prepared to receive the changed product on this date, u-blox will continue to ship the pre-changed product until the inventory has been depleted. This may result in the pre-changed product being shipped to customers after this forecasted date.

5 Certifications

Regulatory certifications remain unchanged and valid:

Certification scheme	SARA-R410M-02B-04
RED (Europe)	•
FCC (USA)	•
FCC ID	XPY2AGQN4NNN
ISED (Canada)	•
ISED certification number	8595A-2AGQN4NNN
ANATEL (Brazil)	•
Certificate number	07889-19-05903
NCC (Taiwan)	•
Certificate number	CCAA18NB0010T3
Giteki (Japan)	•
Radio / telecommunication certificate numbers	003-180155 / D180083003
RCM ACMA (Australia)	•

While only the following conformance and MNOs certifications have been updated:

Certification scheme	SARA-R410M-02B-04
PTCRB (conformance)	•
AT&T (USA)	•
AT&T FirstNet (USA)	•
Verizon (USA)	•
Deutsche Telekom (Germany)	•

6 Customer impact and recommended action

u-blox has taken utmost care to ensure full backward compatibility to the previous versions. The product with the new firmware is functionally equivalent to the previous version. However, a system check before deployment in production is recommended.

6.1 Certification impact:

- Country regulatory approvals:
 - Country regulatory approvals of the modules remain valid.
 - u-blox recommends that integrators check with their preferred certification body to find out if any action is needed for the regulatory approvals of the host product. For example, FCC and ISED IDs remain unchanged: no action is needed if the module ID is re-used.
- Conformance approvals:
 - u-blox recommends that integrators, which have the PTCRB approval in place for the host product, execute the PTCRB ECO request process due to the change in the product.
- Mobile Network Operators (MNO) approvals:
 - Mobile network operators' approvals of the modules have been updated.
 - u-blox recommends that integrators, which have MNO approvals in place for the host product, notify the related mobile network operator of the change in the product.

7 Firmware update

- Old SARA-R410M-02B modules running previous firmware revisions (before 05.12 modem version), can be upgraded to SARA-R410M-02B-04 firmware ONLY by using the u-blox EasyFlash tool. It is NOT possible to upgrade those modules over-the-air using FOTA or FOAT methods.
- SARA-R410M-02B-03 modules with 05.12 modem revision support firmware upgrades via all usual update methods (EasyFlash, FOTA and FOAT). For more details, see section 7.1.
- For hardware requirements to perform the firmware update over USB using the u-blox EasyFlash tool, see section 2.6.2 of the u-blox SARA-R4 series system integration manual [3].

7.1 Firmware update packages and md5 signature

Product / delivery	Filename	md5sum
SARA-R410M-02B		
EasyFlash	SARA-R410M-02B-04-P1-L0000000512A0221-000K00.dof	c60f954ab0dd69af1a2c89d7ea92b6c6
FOTA (From SARA-R410M-02B-03 to SARA-R410M-02B-04) uFOTA ID: 1457	SARA-R410M-02B-03-IP-L0000000512A0219-000K00_SARA-R410M-02B-04-P1-L0000000512A0221-000K00.upd	d556394e471a2a6850536ccf123a2fbf
FOTA (From SARA-R410M-02B-04 to SARA-R410M-02B-03) uFOTA ID: 1458	SARA-R410M-02B-04-P1-L0000000512A0221-000K00_SARA-R410M-02B-03-IP-L0000000512A0219-000K00.upd	6460807049c70e5ab47c617cdfdd71e5
FOTA (test IP to X) uFOTA ID: 1506	SARA-R410M-02B-04-P1-L0000000512A0221-000K00_SARA-R410M-02B-04-P1-L9900000512A0221-000K00.upd	ae2de0d4a51c8f0acc6d38afa56b6e0f
FOTA (test X to IP) uFOTA ID:1507	SARA-R410M-02B-04-P1-L9900000512A0221-000K00_SARA-R410M-02B-04-P1-L0000000512A0221-000K00.upd	ecb571b5c18b738d903bb16859d59ded

8 Tools

- m-center v02.06.00 – Download from the u-blox.com website via this page: [m-center](#)
- EasyFlash 13.03 – Download from the u-blox.com website via this link: [EasyFlash 13.03](#)

9 Related documentation

- [1] SARA-R4 series AT commands manual, [UBX-17003787](#)
- [2] SARA-R4 series data sheet, [UBX-16024152](#)
- [3] SARA-R4 series system integration manual, [UBX-16029218](#)
- [4] SARA-R410M-02B IP IN, [UBX-18010263](#)
- [5] SARA-R410M-02B-01 PCN, [UBX-19024506](#)
- [6] SARA-R410M-02B-02 information note, [UBX-20033274](#)
- [7] SARA-R410M-02B-03 PCN, [UBX-20058105](#)
- [8] EFS Backup / Restore for SARA-R4, [UBX-20053119](#)
- [9] SARA-R4 series application development application note, [UBX-18019856](#)
- [10] SARA-R4 series LwM2M objects and commands application note, [UBX-18068860](#)
- [11] SARA-R4 series firmware update application note, [UBX-17049154](#)

Appendix

A Description of change

A.1 Hardware

No changes.

A.2 Firmware

A.2.1 New features

No changes.

A.2.2 Fixes included in this release

Networking and IP based applications fixes

- [u-blox ID X1M-1137/CA-129321] Multiple SSL socket data issue: in stress test with multiple secure sockets used in parallel to receive data sometimes one socket gets stuck.
- [u-blox ID X1M-1127/CA-129867] Generic +USOER error result code after socket closure.
- [u-blox ID X1M-1186] DNS is not assigned to PPP host via LCP for the second dialup connection established.

Positioning AT commands fixes

- [u-blox ID X1M-1067/CA-119171] The longitude returned by +ULOC is wrong when the real value is between (-0.99999 and 0.00000).

Memory and serial drivers fixes and improvements

- [u-blox ID X1M-1180] EFS Backup/Restore: feature optimization.
- [u-blox ID X1M-1135/CA-126269] +UDWNFILE file data appears to be rearranged on occasion.

Configuration and diagnostic AT commands improvements

- [u-blox ID X1M-1199] Modification of AT&T and FirstNet MNO profiles in NVM to enable network MTU negotiation via PCO and correct FN fallback value (1342 bytes). Negotiation via RA is already supported.
- [u-blox ID X1M-1189] +CEREG:3 URC added for EMM cause #19 (ESM Failure).
- [u-blox ID X1M-1187] +UHPPLMN command for configuration of Higher Priority PLMN scan timings.
- [u-blox ID X1M-1184] +UCPSMS and +CEREG are formatted to allow to understand if PSM has been granted or not by the network.
- [u-blox ID X1M-1240] +UFOTACONF AT command has extended a parameter for FOTA TCP window sizing.

LwM2M improvements

- [u-blox ID X1M-1185] Configure CoAP tolerance to transmission delays to increase uFOTA reliability in slow NB-IoT networks.
- [u-blox ID X1M-1228] LwM2M client starts procedures when UICC is detected and ready.

- [u-blox ID X1M-1088] LwM2M database has been protected where simultaneous access requests are not allowed.
- [u-blox ID X1M-1105] Improved handing of IPv6 to IPv4 fallback.
- [u-blox ID X1M-1092] Extended the +ULWM2M AT command with NVM storage.

B Known limitations

Known limitations identified as [u-blox id]:

- [u-blox ID 4537]: After a while, the +CMGL AT command may start returning the "+CMS ERROR: Resources unavailable, unspecified" error result code. Workaround: set the storage setting again by means of the AT+CPMS="ME","ME","ME" command.
- [u-blox id 2052]: The +USORD AT command fails to read pending bytes when the socket is in closed state. To avoid the AT command interface hanging, it is recommended to use async socket close, e.g., AT+USOCL=0,1 (the +UUSOCL URC response will take 120 s in this case but will not block the AT interface).
- [u-blox id 3142] Data being received via a UDP socket can be read in a maximum of 2 chunks by the +USORF AT command.
- [u-blox id 3466] Intermittently AT+UHTTP=0 can take up to ~120 s to respond.
- [u-blox ID 3889]: Without HW flow control the DUT crashes with Direct Link when upload buffer gets full due to constraint on radio UL speed.
- [u-blox ID 4113]: Sending more than 10 kB of data via +USOWR AT command over TCP will lead to a crash if TX buffers should reach full.
- [u-blox ID 4494]: For UDP sockets, the maximum size of the UDP single payload is 1024 bytes.
- [u-blox id 3036] When too many MQTT messages are in the RX queue (around 800 characters) and not read by the MCU, some characters might get lost. Suggested workaround: read MQTT messages as soon as they are received and, in any case before, they reach the above-mentioned number.
- [u-blox id 3869] MQTTS does not function properly.