Product change note

Topic	**SARA-R42 "01B" product update Rev 2** UBXDOC-686885345-2014 C1-Public
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1 Affected products

Product name	Ordering code	Type number (old)	Firmware (old)	Type Number (new)	Firmware (new)
SARA-R422	SARA-R422-01B	SARA-R422-01B-01	01.24,A01.10	SARA-R422-01B-02	01.24,A01.20
SARA-R422S	SARA-R422S-01B	SARA-R422S-01B-01	01.24,A01.10	SARA-R422S-01B-02	01.24,A01.20
SARA-R422M10S	SARA-R422M10S-01B	SARA-R422M10S-01B-01	01.24,A01.10	SARA-R422M10S-01B-02	01.24,A01.20

2 Type

☐ Product status change   ☒ Documentation update

☐ Hardware/component change   ☒ Certification information

☒ Firmware/software update   ☐ Security advisory

☐ Label change   ☒ Second source component

3 Description

As part of u-blox continuous improvements process the firmware of the module has been updated. Please refer to the appendix for the list of improvements. Furthermore, to ensure stable fulfilment of marked demand, a second source power amplifier is introduced.

4 Schedule

Product type number (new)	Sample availability date	Estimated first shipment date[1]
All products listed above	August 2024	March 2025

5 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.

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[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.

5.1 Customer host device certifications impact and recommended action

The changes from the "01B-01" product versions to the "01B-02" product versions do not affect RF / EMC properties of the modem.

- Regulatory approvals:

  o The FCC United States, ISED Canada, ANATEL Brazil, GITEKI Japan, NCC Taiwan and KC Korea certificate numbers / IDs of the "01B-01" product versions remain valid for the "01B-02" product versions, with Class II Permissive Change process executed for FCC United States and with Class III Permissive Change process executed for ISED Canada.
  o The technical documentation for European RED and Australian ACMA RCM regulatory conformity has been updated from the "01B-01" product versions.
  o 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.

- Conformance approvals:

  o PTCRB certification grant has been updated from the "01B-01" product versions.
  o u-blox recommends that integrators having a conformance certification in place for the host product should execute the PTCRB ECO due to the use of the new FW version of the module in the host product. No testing is expected, paperwork only.
  o Any new PTCRB certification for a host product shall be executed using the latest product version "01B-02".

- Mobile network operators (MNO) approvals:

  o MNO approvals have been updated from the "01B-01" product versions.
  o u-blox recommends that integrators having the AT&T and/or Verizon Wireless approval in place for the host product should notify related mobile network operator due to the use of the new FW version of the module in the host product. No testing is expected, paperwork only.
  o Any new MNO approval for a host product shall be executed using the latest product version "01B-02".

6 Firmware update

SARA-R422-01B-01, SARA-R422S-01B-01, SARA-R422M10S-01B-01 (01.24, A01.10) units can be updated to this PCN firmware using both flashing and FOAT/FOTA.

6.1 Firmware update packages and md5 signature

Product / delivery	Filename	md5sum
SARA-R422-01B		
EasyFlash	SARA-R422-01B-02-IP-0124A0120-006K00_1.dof	8707ea9a0ba299dcd963b48ab249af05
FOAT/FOTA 01.24, A01.10 to 01.24, A01.20 uFOTA ID: 2447	FOTA_SARA-R422-01B-01-IP-0124A0110-006K00_SARA-R422-01B-02-IP-0124A0120-006K00_1.upd	13f4e3bfb36d991bb0e39ec4569b7fba
FOTA test 01.24, A01.20 to ENG2199 uFOTA ID: 2453	FOTA_SARA-R422-01B-02-IP-0124A0120-006K00_SARA-R422-01B-02-XX-0124ENG2199A0120-006K00_1.upd	126e5050346ad34c130305ad3baafde5

Product / delivery	Filename	md5sum
FOTA test ENG2199 to 01.24, A01.20 uFOTA ID: 2454	`FOTA_SARA-R422-01B-02-XX-0124ENG2199A0120-006K00_SARA-R422-01B-02-IP-0124A0120-006K00_1.upd`	c20e2c29b5308896cd202068a732869d
SARA-R422S-01B		
EasyFlash	SARA-R422S-01B-02-IP-0124A0120-007K00_1.dof	9a652886e954efdd480a5748c9846cbf
FOAT/FOTA 01.24, A01.10 to 01.24, A01.20 uFOTA ID: 2445	`FOTA_SARA-R422S-01B-01-IP-0124A0110-007K00_SARA-R422S-01B-02-IP-0124A0120-007K00_1.upd`	fa969ff1f169741324c34d106b1c0e7e
FOTA test 01.24, A01.20 to ENG2199 uFOTA ID: 2451	`FOTA_SARA-R422S-01B-02-IP-0124A0120-007K00_SARA-R422S-01B-02-XX-0124ENG2199A0120-007K00_1.upd`	68f9bbc9189d41d17a6591e0d09dc5c8
FOTA test ENG2199 to 01.24, A01.20 uFOTA ID: 2452	`FOTA_SARA-R422S-01B-02-XX-0124ENG2199A0120-007K00_SARA-R422S-01B-02-IP-0124A0120-007K00_1.upd`	0273b6abf3a7aabc3b00b7736200d00c
SARA-R422M10S-01B		
EasyFlash	SARA-R422M10S-01B-02-IP-0124A0120-005K00_1.dof	e8f20894487a5da6c26614a93b1d0ba4
FOAT/FOTA 01.24, A01.10 to 01.24, A01.20 uFOTA ID: 2443	`FOTA_SARA-R422M10S-01B-01-IP-0124A0110-005K00_SARA-R422M10S-01B-02-IP-0124A0120-005K00_1.upd`	dee8c4a80393dbe5bede6564ca0fa88a
FOTA test 01.24, A01.20 to ENG2199 uFOTA ID: 2449	`FOTA_SARA-R422M10S-01B-02-IP-0124A0120-005K00_SARA-R422M10S-01B-02-XX-0124ENG2199A0120-005K00_1.upd`	43b07665605e8d4a3977c6db54cc34bf
FOTA test ENG2199 to 01.24, A01.20 uFOTA ID: 2450	`FOTA_SARA-R422M10S-01B-02-XX-0124ENG2199A0120-005K00_SARA-R422M10S-01B-02-IP-0124A0120-005K00_1.upd`	42bbf9af14276c371d0ca90270f68d8a

Click to download the EasyFlash images from the table above.
For the FOTA/FOAT FW packages, contact u-blox technical support, www.u-blox.com/support.
For more details of FW update, see FW update application note [5].

7 Tools

- u-blox m-center evaluation tool v02.09.00 for Windows
- u-blox EasyFlash firmware update tool v 14.03 for Windows
- u-blox USB v2.0 driver of the modules for Windows

8 Related documentation

[1]   u-blox SARA-R4 series AT commands manual, UBX-17003787
[2]   u-blox SARA-R4 series data sheet, UBX-16024152
[3]   u-blox SARA-R4 series system integration manual, UBX-16029218
[4]   u-blox SARA-R42 series application development guide, UBX-20050829
[5]   u-blox SARA-R4 / LEXI-R422 series FW update application note, UBX-17049154

Appendix

A   Firmware changes compared to SARA-R42 01B-01

Internet suite

- [u-blox ID 1409_3] Fixed: FTPS with session resumption having wrong result code in store operation due to FTP session closed too early.
- [u-blox ID 1478_3] Fixed: TCP socket sometimes cannot be opened in 2G networks even if the DNS resolution is properly working.

Monitoring services

- [u-blox ID 1032_3] Fixed: when eDRX is network granted but not used in the currently selected cell or not network granted, the +CEDRXP: 2 is printed both on LTE-M and NB-IoT RATs.
- [u-blox ID 1370_3] Fixed: +CESQ and +CSQ AT commands sometimes visualize the RSSI value as stuck when the module is registered in 2G networks.
- [u-blox ID 1448_3] Fixed: +USCANSTAT command missing URC in +CFUN=0/+CFUN=1 and in +CFUN=4/+CFUN=1 cycles.
- [u-blox ID 1496_3] New feature: the +URATSCAN, i.e. the timer for the preferred RAT search, is effective when the module is registered on the HPLMN, while in roaming conditions it can be enabled by a new specific option.

Cellular Modem

- [u-blox ID 1302_3] The support of the GEA/2 encryption algorithm has been completely disabled for all MNO profiles.

Positioning

- [u-blox ID 1280_3] Fixed: +ULOC AT command might fail with server error when the UE reports FFFF CellId. This can occur if the RRC connection is released while this request is pending, due to the need to re-read the SIB.

System features

- [u-blox ID 1369_3] New feature: Added safe memory and power-off option CFUN=11.
- [u-blox ID 1337_3] V24 and V25ter commands improved interaction with SIM PIN status.

SMS

- [u-blox ID 1392_3] Fixed wrong interpretation of the SMS specification regarding SMS with PID equal to "Type 0 Messages".

USEC features

- [u-blox ID 1455_3] The security suite features (USEC) and related AT commands are no longer supported, while the AT+USECMODE=0 has been maintained for backward compatibility. USEC suite has no effect on the availability and use of secure internet protocols. Moreover it has no effect on device security features such as secure boot and secure updates, which are active and operate independently from USEC.

Known limitations

Internet suite

- [u-blox ID 84_3] The +UDCONF=10 AT command does not work.
- [u-blox ID 2114_2] If linger time is not set, the +USOCL AT command answers after 30 s.
- [u-blox ID 1430_3]: MQTTSN publish on subscribed topic, with different QoS (0,1,2). When applying the first publish with QoS=1, all the subsequent MQTTSN operations fail.

Monitoring services

- [u-blox ID 103_3] When the jamming level is close to the threshold level, redundant and toggled jamming indications can be issued because the jamming condition is periodically cleared. If the jamming level is high, the indications of jamming detection are more consistent.
- [u-blox ID 155_3] The AT+COPS=1 does not return a final result code if issued in airplane mode (+CFUN: 0 or 4).
- [u-blox ID 867_2] +CGEV URC are discarded in +CGEREP: 1,1 when AT commands are pending for contexts activation/deactivation. Workaround: issue AT+CGEREP=2,1.
- [u-blox ID 139_3] +CEINFO read command stuck after passing from LTE Cat. M1/NB1 to GSM.
- [u-blox ID 1447_3]: +CxREGs do not provide info when NW search is restarted by CFUN=0/1 cycles in out of service. Workaround: use AT+USCANSTAT=1 which provides correct URCs about the NW scan status.

System features

- [u-blox ID 1293_2] UDP packets are not sent when the last gasp feature is triggered on 2G RAT. A PDP context shall be activated before.

SMS

- [u-blox ID 1200-3] The AT+CMGL command, if there is an error, replies with a generic "Error" instead of "CMS Error".

File system

- [u-blox ID 325_3] Maximum user file system size shall be limited to 640 kB.

Positioning

- [u-blox ID 153_3] With a multi-hypothesis response (<response_type>=2), the +UULOC URC is not correctly formatted.