Product change note

Topic	**SARA-R500S-00B SARA-R510S-00B, SARA-R510M8S-00B firmware update**
	UBX-20053099 C1-Public
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1   Affected products

Product name	Ordering code	Type number (old)	Firmware (old)	Type number (new)	Firmware (new)
SARA-R500S	SARA-R500S-00B	SARA-R500S-00B-00	02.05, A00.01	SARA-R500S-00B-01	02.06, A00.01
SARA-R510S	SARA-R510S-00B	SARA-R510S-00B-00	02.05, A00.01	SARA-R510S-00B-01	02.06, A00.01
SARA-R510M8S	SARA-R510M8S-00B	SARA-R510M8S-00B-00	02.05, A00.01	SARA-R510M8S-00B-01	02.06, A00.01

2   Type

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

3   Description

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

- LwM2M client aligned to VZW LwM2M DTLS requirement
- C2C related improvements
    - The C2C encryption mechanism now requires 2 keys. One for AES128 encryption and the other for HMAC_SHA256_T128 authentication tag
    - The C2C feature provides a C2C key through pairing and rekeying process. This key is provided only once in the lifetime of the module. The MCU should be able to confirm this key before it is configured and sealed
- CTS related improvements
    - [u-blox ID 4524] CTS state is now valid also during the autobaud rate detection when target resumes
    - [u-blox ID 4506] A new function which tracks the status of the CTS, DSR, RI, DCD (output) lines now ensures the validity of the signals also when in &K0 and +UPSV: 3
- uFOTA related improvement
    - URC to track upgrade process is now extended to FOTA process (+UFWPREVAL, +UUFWINSTALL)

4 Schedule

Product type number (new)	Estimated first shipment date[1]
SARA-500S-00B-01	2020 CW52
SARA-R510S-00B-01	2021 CW4
SARA-R510M8S-00B-01	2021 CW4

5 Customer impact and recommended action

- It is recommended to use this PCN FW version on new devices starting certification activities.
- It is possible to upgrade SARA-R5 00B-00 (02.05, A00.01) units to the new PCN firmware version. ES units shall be first upgraded to SARA-R5 00B-00 FW (02.05, A00.01).
- Backward compatibility between new type number and its predecessor is ensured.
- EVK units may be shipped with the 02.05, A00.01 FW version during the inventory depletion period. Customers should check the FW of the EVKs and in case upgrade it to the PCN FW version 02.06, A00.01.

6 Firmware update

- SARA-R5 00B-00 (02.05, A00.01) units can be updated to this PCN firmware by means of EasyFlash v12.08, FOAT, FOTA or uFOTA.
- The root of trust firmware shall be also updated when upgrading an ES unit to IP firmware via +USECFW command.

6.1 Firmware update packages and md5 signature

Product / delivery	Filename	md5sum
SARA-R500S		
FOTA 02.05 to 02.06 uFOTA ID: 1153	SARA-R500S-00B-00-IP-0205A0001-004K00_SARA-R500S-00B-01-P2-0206A0001-004K00.upd	bece42051f445d8e11c30c778475bf35
EasyFlash	SARA-R500S-00B-01-P2-0206A0001-004K00.dof	bfcce5f59fdd2209da901f6fb201f066
FOAT	SARA-R500S-00B-01-P2-0206A0001-004K00.upd	fff08f8993af127bccd36af4a4301218
FOTA test 02.06 to 99.01 uFOTA ID: 1154	SARA-R500S-00B-01-P2-0206A0001-004K00_SARA-R500S-00B-01-P2-9901A0001-004K00.upd	01e909a5a4565fda8445663545f4c426
FOTA test 99.01 to 02.06 uFOTA ID: 1055	SARA-R500S-00B-01-P2-9901A0001-004K00_SARA-R500S-00B-01-P2-0206A0001-004K00.upd	df59564a8621d2e638486ddcc2b90b68

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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.

Product / delivery	Filename	md5sum
SARA-R510M8S		
FOTA 02.05 to 02.06 uFOTA ID: 1056	SARA-R510M8S-00B-00-IP-0205A0001- 006K00_SARA-R510M8S-00B-01-P2-0206A0001- 006K00.upd	3fff623c94a98dbfd84651ddcbb8f08f
EasyFlash	SARA-R510M8S-00B-01-P2-0206A0001-006K00.dof	603f84af99cf26e3599fa828f852dc4b
FOAT	SARA-R510M8S-00B-01-P2-0206A0001-006K00.upd	b6c5c340924434a8c90f6057b10c4429
FOTA test 02.06 to 99.01 uFOTA ID: 1057	SARA-R510M8S-00B-01-P2-0206A0001- 006K00_SARA-R510M8S-00B-01-P2-9901A0001- 006K00.upd	43a501ecd21307bfb4b938a203e060ea
FOTA test 99.01 to 02.06 uFOTA ID: 1058	SARA-R510M8S-00B-01-P2-9901A0001- 006K00_SARA-R510M8S-00B-01-P2-0206A0001- 006K00.upd	a15a47e836965a2349c9f30583422750
SARA-R510S		
FOTA 02.05 to 02.06 uFOTA ID: 1059	SARA-R510S-00B-00-IP-0205A0001-005K00_SARA- R510S-00B-01-P2-0206A0001-005K00.upd	e6a23b9db34a56340e2b3963033de0ca
EasyFlash	SARA-R510S-00B-01-P2-0206A0001-005K00.dof	ddd5df280bf21e91b6ceb29fdae3743b
FOAT	SARA-R510S-00B-01-P2-0206A0001-005K00.upd	c8e29426b7243f163fb5f0714fb40365
FOTA test 02.06 to 99.01 uFOTA ID: 1060	SARA-R510S-00B-01-P2-0206A0001-005K00_SARA- R510S-00B-01-P2-9901A0001-005K00.upd	05ca09b05df249470775c8a57ef6ca1d
FOTA test 99.01 to 02.06 uFOTA ID: 1061	SARA-R510S-00B-01-P2-9901A0001-005K00_SARA- R510S-00B-01-P2-0206A0001-005K00.upd	0c2de500a66751514fa289a43f3723b1

7   Tools

- m-center v02.04.00 – Download from the u-blox.com website via this page: m-center
- EasyFlash 12.10 – Download from the u-blox.com website via this link: EasyFlash 12-10

8   Related documentation

[1]   SARA-R5 series AT commands manual, UBX-19047455
[2]   SARA-R5 series data sheet, UBX-19016638
[3]   SARA-R5 series system integration manual, UBX-19041356
[4]   EVK-R5 user guide, UBX-19042592
[5]   SARA-R5 application development guide, UBX-20009652
[6]   SARA-R5 Internet applications development guide, UBX-20032566
[7]   Security suite application note, UBX-20013561
[8]   SARA-R5 GNSS implementation application note, UBX-20012413
[9]   LwM2M objects and commands application note, UBX-18068860
[10] SARA-R5 firmware update application note, UBX-20033314
[11] SARA-R5 IP information note, UBX-20037360

Appendix

A Known bugs and limitations

Antenna detection

- [u-blox ID 1187] The +UANTR AT command fails to detect a load resistor as open circuit when its value is above the maximum limit of 53 kΩ. This does not affect module capability to detect a real open circuit condition.

Connectivity

- [u-blox ID 1645] The CONNECT result code is not returned after entering data mode via ATO.
- [u-blox ID 2553] The DCD line is wrongly set to OFF during the online command mode (OLCM).
- [u-blox ID 4565] ATO does not respond if NO CARRIER final result code is received during OLCM. Suggestion: ATO shall be given only if the module is in OLCM.

Firmware update

- [u-blox ID 4475] uFOTA process gets stuck if AT+COPS=2 is issued during a FW delta download.

Internet suite

- [u-blox ID 4237] The AT+UMQTT=6 output (read all unread MQTT messages) may be truncated when unread messages content is higher than 1 kB. It is suggested to read messages one by one with AT+UMQTTC=6,1.
- [u-blox ID 4320] PUT request using SSL fails with file of size between 270 kB and 550 kB.

Last gasp

- [u-blox ID 4583] Last gasp feature supports only SMS in text format.

Registration/Network services

- [u-blox ID 4509] If the module is deregistered from network (+COPS: 2), AT+CGACT=1,1 does not respond. Workaround: make sure that +COPS: 0 or +COPS: 1 are set before to issue the AT+CGACT=1 command.
- [u-blox ID 4578] Manual registration (AT+COPS=1) with alphanumeric format for operator is not supported.

Positioning

- [u-blox ID 2235] GNSS automatic local aiding (AT+UGPS=1,1) does not provide position information. Time information is correctly handled.
- [u-blox ID 4515] [u-blox ID 4995] GNSS data ready not working when the power saving mode is enabled.

PS data call

- [u-blox ID 3804] The +UAUTHREQ AT command setting is not persistent upon reboot.
- [u-blox ID 4210] The PPP link termination does not trigger the deactivation of the PDP context.

PSM

- [u-blox ID 3642] A module reboot is needed to apply +UPSV: 2 (power saving controlled by UART RTS line) when the UART interface is used in 4-wire configuration.
- [u-blox ID 3708] The module is not able to enter the deep sleep mode if UART with hardware flow control is enabled, RTS is OFF and some data is ready to be sent (e.g. URC).

SIM management

- [u-blox ID 1433] The +UUSIMSTAT: 3 URC is not displayed when the PUK is blocked.

System time

- [u-blox ID 4580] [SARA-R510M8S] [SARA-R500S] Wake-up from +CALA alarm is delayed by the time elapsed between the alarm set and the module power-off event. It is suggested to set the +CALA AT command as the last operation before the module power-off. Exit from PSM deep sleep mode is delayed by about 2 s.
- [u-blox ID 4454] Date and time are lost when RESET_N is used to reset the module.