

Information note

Topic SARA-R5 "00B" product version initial production

UBX-20037360 C1-Public

Author Samuele Falcomer

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1 Affected products

Product name	Ordering code	Type number	Firmware	Remarks
SARA-R500S	SARA-R500S-00B	SARA-R500S-00B-00	Modem: 02.05 Application: A00.01	
SARA-R510S	SARA-R510S-00B	SARA-R510S-00B-00	Modem: 02.05 Application: A00.01	
SARA-R510M8S	SARA-R510M8S-00B	SARA-R510M8S-00B-00	Modem: 02.05 Application: A00.01	

2 Type

- | | |
|--|--|
| <input checked="" type="checkbox"/> Product status change | <input checked="" type="checkbox"/> Documentation update |
| <input type="checkbox"/> Hardware/component change | <input type="checkbox"/> Certification information |
| <input checked="" type="checkbox"/> Firmware/software update | <input type="checkbox"/> Security advisory |
| <input checked="" type="checkbox"/> Label change | <input type="checkbox"/> Other |

3 Description

Status of the above listed products has changed from Engineering Samples (ES) to Initial Production (IP). For the details of the new features and improvements implemented in the IP version, see appendix A.

The modules label has been simplified as "SARA-R510M8S" (instead of "Model: SARA-R510M8S").

4 Schedule

First production parts availability:

Product name	Ordering code	From
SARA-R500S	SARA-R500S-00B	CW43
SARA-R510S	SARA-R510S-00B	CW42
SARA-R510M8S	SARA-R510M8S-00B	CW42

Same schedule applies to adapter boards and evaluation kits.

5 Customer impact and recommended actions

- Customers with engineering samples are recommended to update engineering sample units to initial production firmware.
- For security reasons engineering samples updated with initial production firmware shall be used only for development purposes and not in production.
- Initial production firmware version is required for new devices entering certification labs.
- Customer devices that require Verizon certification shall follow the guidelines described in Appendix C of SARA-R5 firmware update application note [10].

6 Firmware update (or Applicability)

- It is not possible to upgrade early samples and prototype units to the initial production FW.
- Engineering samples can be updated to initial production firmware by means of EasyFlash v12.08, FOAT, FOTA or uFOTA.

6.1 Firmware update packages and md5 signature

Product / delivery	Filename	md5sum
SARA-R500S		
FOTA ES to IP uFOTA ID: 902	SARA-R500S-00B-00_FW02.03_A00.01_ES__SARA-R500S-00B-00_FW02.05_A00.01_IP.upd	f006e77c97b48730310565cb86c789d8
EasyFlash	SARA-R500S-00B-00_FW02.05_A00.01_IP.dof	3b8e857d50620e26eefc325475719122
FOAT	SARA-R500S-00B-00_FW02.05_A00.01_IP.upd	55273e7f26fb47906f3b542ff22ecae6
FOTA (test IP to X) uFOTA ID: 903	SARA-R500S-00B-00_FW02.05_A00.01_IP__SARA-R500S-00B-XX_FW99.01_A00.01.upd	3fc1e535f54730c17a74f90a2dd0d351
FOTA (test X to IP) uFOTA ID: 901	SARA-R500S-00B-XX_FW99.01_A00.01__SARA-R500S-00B-00_FW02.05_A00.01_IP.upd	960ba21531a154284e01d9f85860373e
SARA-R510M8S		
FOTA ES to IP uFOTA ID: 904	SARA-R510M8S-00B-00_FW02.03_A00.01_ES__SARA-R510M8S-00B-00_FW02.05_A00.01_IP.upd	becab1323b9e5860df81148ff36e5d20
EasyFlash	SARA-R510M8S-00B-00_FW02.05_A00.01_IP.dof	b4893c09e0031946a328584ce30eefc2
FOAT	SARA-R510M8S-00B-00_FW02.05_A00.01_IP.upd	93720c05f86896de5409a119eac27645
FOTA (test IP to X) uFOTA ID: 905	SARA-R510M8S-00B-00_FW02.05_A00.01_IP__SARA-R510M8S-00B-XX_FW99.01_A00.01.upd	0c9fa9b2bc2ab3f0551a2954ebf9e72e
FOTA (test X to IP) uFOTA ID: 906	SARA-R510M8S-00B-XX_FW99.01_A00.01__SARA-R510M8S-00B-00_FW02.05_A00.01_IP.upd	caed47654f6dd1c7e61589a9a16d3a58
SARA-R510S		
FOTA ES to IP uFOTA ID: 909	SARA-R510S-00B-00_FW02.03_A00.01_ES__SARA-R510S-00B-00_FW02.05_A00.01_IP.upd	331698bcf933e7104ab3523f61037c59
EasyFlash	SARA-R510S-00B-00_FW02.05_A00.01_IP.dof	f3d49c17e1a8227fe238d2a85719c578
FOAT	SARA-R510S-00B-00_FW02.05_A00.01_IP.upd	4ed411d00fb5dd05014ab9af16baaa41
FOTA (test IP to X) uFOTA ID: 907	SARA-R510S-00B-00_FW02.05_A00.01_IP__SARA-R510S-00B-XX_FW99.01_A00.01.upd	7ea2fbf169235463b937398f8cb9ee50
FOTA (test X to IP) uFOTA ID: 908	SARA-R510S-00B-XX_FW99.01_A00.01__SARA-R510S-00B-00_FW02.05_A00.01_IP.upd	4a5edb3c154d69aad30146f8a107a669

7 Tools

- m-center v02.03.00 – Download from the u-blox.com website via this page: [m-center](#)
- EasyFlash 12.08 – Download from the u-blox.com website via this link: [EasyFlash 12-08](#)

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 IP development application note, [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](#)

Appendix

A Features added compared to engineering samples

- Design security
 - Local chip-to-chip security
- Device security
 - Change of ownership
- Access control
 - Zero touch provisioning
- FOTA / FOAT

B Restrictions as compared to specification

The current implementation of the Local C2C security feature uses AES128_CBC in the MAC then ENCRYPT mode. This combination has been recently noted as "non-secure" and is prone to security attacks. A different cypher suite is already under implementation using an AES128_CBC encryption with HMAC approach, which provides ENCRYPT then HMAC mode delivering stronger security.

C Known bugs and limitations

- [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 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 is not affecting module capability to detect a real open circuit condition.
- [u-blox ID 3804] The +UAUTHREQ command setting is not persistent upon reboot.

- [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).
- [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 2235] GNSS automatic local aiding (AT+UGPS=1,1) does not provide position information. Time information is correctly handled.
- [u-blox ID 1433] The +UUSIMSTAT: 3 URC is not displayed when PUK is blocked.
- [u-blox ID 4210] The PPP link termination does not trigger the deactivation of the PDP context.
- [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.
- [u-blox ID 4454] Date and time are lost when RESET_N is used to reset the module.
- [u-blox ID 4475] uFOTA process gets stuck if AT+COPS=2 is issued during a FW delta download.
- [u-blox ID 4506] In &K0 and UPSV:3 configuration, the status of CTS line shall not be used to monitor the module status.
- [u-blox ID 4524] In case of &K3 and +UPSV: 1 or UPSV:3 and IPR: 0, CTS remains blocked to OFF after rebooting. A fixed baud rate is thus recommended.
- [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 4515][SARA-R510M8S] GNSS data ready not working when the power saving mode is enabled.
- [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.
- [u-blox ID 4578] Manual registration (AT+COPS=1) with alphanumeric format for operator is not supported.
- [u-blox ID 4580][SARA-R510M8S][SARA-R500S] Wakeup from +CALA alarm is delayed by the time elapsed between the alarm set and the module power-off event. It is suggested to set +CALA as the last operation before power off. Exit from PSM deep sleep mode is delayed by about 2 s.
- [u-blox ID 4583] Last gasp feature supports only SMS in text format.