Product Change Note

Topic **SARA-R410M-52B Product Change**
UBX-19011338

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1 Affected Products

Product Name	Order Code	Type No (Old)	Type No (New)	Remarks
SARA-R410M	SARA-R10M-52B	SARA-R410M-52B-00	SARA-R410M-52B-01	

2 Type of Change

☐ Hardware modification
☒ Firmware update
☒ Documentation update
☒ Other, Certification update

3 Description of Change

A new firmware release will be applied to the affected product in production according to the schedule below.

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

Old type number	Current firmware version	New type number	New firmware version
SARA-R410M-52B-00	L0.0.00.00.06.05 App version 02.06	SARA-R410M-52B-01	L0.0.00.00.06.08 App version 02.11

The modem and application version can be polled from the module by sending ATI and ATI9 commands. See u-blox AT commands manual [1] for details.

For full details of changes contained in this new version, see Annex A.

4 Schedule

Estimated First Shipment Date	**10 May 2019**

5 Customer Impact and Recommended Action

- Previous version may still be ordered by customers during the transition period to the new version. The transition to the new SARA-R410M-52B-01 version is required within two months of the schedule above.
- The latest firmware version is required for new devices entering certification labs.
- It is recommended to use the Initial Production modules for certification activities.
- It is possible to upgrade SARA-R410M-52B units to the new firmware version.
- Backward compatibility between new type number and its predecessor is ensured.

6 Reference Documents

[1] SARA-R4 series AT Commands Manual, u-blox Document UBX-17003787
[2] SARA-R4 series Data Sheet, u-blox Document UBX-16024152
[3] SARA-R4 series System Integration Manual, u-blox Document UBX-16029218
[4] SARA-R410M-52B – Release to Production Release Notes UBX-18045914
[5] SARA-R410M-52B-IP – Information Note UBX-18045915

Annex A

A Description of Changes

A.1 Hardware

No changes

A.2 Firmware

- Advanced the chipset supplier release version
- Changes done to enable compliance to Verizon requirements for LWM2M and uFOTA
- The product operates as LTE Cat M1-only
- The available bands are M1 Band 2, 4, 5, 12 (AT&T) and B13 (Verizon)
- Using AT+UMNOPROF, the available MNO Profiles are AT&T, Verizon
- Per Verizon requirement, B4 is disabled by default in the Verizon MNO Profile
- AT+URAT functionality is disabled by default
- AT+UBANDMASK functionality is disabled by default
- Fixes included in this release as described in Section A.4

A.3 Certification

The following certifications are achieved for the new type number:

Certification (country)	Status
FCC (US)	Complete (LTE M1 bands 2, 4, 5, 12, 13)
ISED (Canada)	Complete (LTE M1 bands 2, 4, 5, 12, 13)
AT&T	Complete (LTE M1 bands 2 ,4 ,5 12)
PTCRB	Complete (LTE M1 bands 2 ,4 ,5 12, 13)
Verizon	Complete (LTE M1 bands 4, 13)
GCF	Complete (LTE M1 bands 2 ,4 ,5 12, 13)

- PTCRB and FCC/ISED grants already achieved for SARA-R410M-52B-00 remain valid for the new product type number SARA-R410M-52B-01.
- For customer product using SARA-R410M-52B-00 and already certified by AT&T, customer should contact AT&T for verification that no regression is required.
- Documentation updates will be required with PTCRB and AT&T to reflect the new type number/firmware version.
- Verizon grant and GCF are newly achieved.

A.4 Fixes included in this release

- [u-blox id 3870]: Corrections to default TLS cipher suite list
- [u-blox id 3771]: TLS data transmission reports +USOWR:0,0 and upon retry server receives double additional data
- [u-blox id 3651]: Ciphers and file size failures : Post to AWS ELB SSL
- [u-blox id 3572]: Improvements to TIS performance
- [u-blox id 3166] MQTT does not work upon deregister and re-register, only from power on
- [u-blox id 2957]: IPv4v6 - Introduce a u-blox default MTU setting
- [u-blox id 2843]: Memory management enhancements, upgrade functions
- [u-blox id 2940]: MQTT restore to Factory Default does not reset local port
- [u-blox id 2939]: MQTT Read in Terse mode does not terminate in S3 and S4 chars
- [u-blox id 2936]: Memory management enhancements, EFS page read
- [u-blox id 2933]: Memory management enhancements, bad blocks
- [u-blox id 2922]: Polling for GNSS messages locks up the module after a while
- [u-blox id 2908]: Sending UDP message with long delay in Direct Link mode
- [u-blox id 2846]: Error when trying to send SMS with all the characters in IRA
- [u-blox id 2842]: AT Interface affects GNSS Client
- [u-blox id 2841]: Buffer dropped when receiving a 5 MB file using USODL and MUX
- [u-blox id 2840]: URDFILE partially retrieves file if RTS is toggled on UART
- [u-blox id 2839]: File retrieval fails to complete when using UFTPC=6 (Direct Link), and UART running MUX at 9600 baud rate
- [u-blox id 2830]: Module reset after a lengthy period of sending NMEA data over MUX
- [u-blox id 2829]: GPS device stops sending NMEA data when URDFILE operation is in progress at 9600 baud rate
- [u-blox id 2820]: +UFTPC commands unsuccessful randomly when SSL enabled
- [u-blox id 2816]: Enable FTP Direct Link, socket Direct Link flow control by watermark event
- [u-blox id 2807]: +UTEST=2 lower range does not reach -90dBm floor
- [u-blox id 2803]: Ring Indication does not trigger for inbound UDP, but triggers for outbound
- [u-blox id 2775]: Connecting a secure socket with non-secure server results in an OK instead of ERROR
- [u-blox id 2774]: SSL issue with validating server certificate
- [u-blox id 2495] GNSS COLD start <Not receiving +UGUBX string> after sending UBX CFG-RST message
- [u-blox id 2495] GNSS COLD start <Not receiving +UGUBX string> after sending UBX CFG-RST message
- [u-blox id 2449] The GNSS supply enable GPIO is set to ON after the module reboot.
- [u-blox id 2391] Sending data to the AT interface causes reading (SCL activity) on the I2C interface

A.5 Known Limitations

The following are known limitations:

- For PSM, the works as designed behavior is that there may be times when the Data or LTE timers may wake up the module before the expected PSM wakeup time.
- When the device is ready to go into the PSM mode it does not gracefully shutdown TCP sockets, therefore the remote end is unaware of the client socket state. The remote server

should implement a timeout or have keep alive probes enabled to check on the connection at regular intervals.

- The RxAGC value provided with the +UTEST: 2 information text response may have an approximate -3 dB inaccuracy.
- [u-blox id 3869] For MQTTS (secure) ciphering needs to be manually specified
- [u-blox id 3724] Incorrect response reading a stored SMS with all GSM 7 bit chars
- [u-blox id 3586] When eDRX is enabled, during PPP connection there is a long delay in obtaining IP address. Workaround is to disable eDRX with PPP.
- [u-blox id 3557] Connection to MQTT Microsoft Azure results in error code
- [u-blox id 3517] Higher current consumption observed after MQTT login. Suggest to keep login session short.
- [u-blox id 3466] Intermittently +UHTTP=0 can take up to ~120s to respond. Workaround by sending dummy byte to UART.
- [u-blox id 3168] When connecting to MQTT server, SSL negotiations can fail due to large TCP packets, which can be triggered by large certificate files
- [u-blox id 3142] Data being received via a UDP socket can be read in a maximum of 2 chunks by +USORF
- [u-blox id 3117] AT &K hardware flow control setting is not saved to Profile
- [u-blox id 3036] When coming subscribed MQTT messages pile up without being read, there are too many messages for the module to handle. When this pile of messages is read, not all the message characters are read out as some of the messages are "chopped off" from the output. Suggested workaround: Read messages as soon as they come in. Do not let too many messages go unread and pile up. Issue observed around 800 char and above.
- [u-blox id 2611] uTEST=2 RX and uTEST=3 not giving consistent readings unless Reset applied between test. Suggested workarounds:
    - Avoid using continuous mode for uTEST=3. Instead, use non-continuous mode.
    - After issuing uTEST=3 in continuous mode, then issue same uTEST=3 TX test but in non-continuous mode to clear a flag causing issue.
- [u-blox id 2573] Sometimes the modem reaches a state where MQTT publish and MQTT publish from file returns a success code, but the MQTT message URC is never seen from the same modem (which is also subscribed to the MQTT Topic of the message).
- [u-blox id 2494] Not getting <+UULOCIND> URC indication of +ULOC request complete while turning on GPS after requesting localization info
- [u-blox id 2324] A DUN call fails when a LWM2M data call is active. Workaround: retry the call.
- [u-blox id 2136] PKCS8 client key format is not supported for FTPS
- [u-blox id 2135] In TX test mode (AT+UTEST=3 command) the maximum output power is 17 dBm even when set to greater values.
- [u-blox id 2068] The +USORD and +USORF information text responses add extra characters. The host application should disregard any extraneous <S3> and <S4> bytes.
- [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).