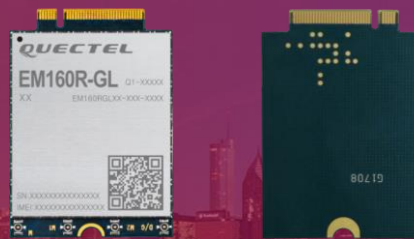


Quectel EM160R-GL

LTE-A Cat 16 M.2 Module



EM160R-GL-AP

Release Notes

LTE-A Module Series

Rev. EM160R-GL-AP_Firmware_Release_Notes_V0207_01.200.01.200

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<http://www.quectel.com/support/sales.htm>.

For technical support, or to report documentation errors, please visit:

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1. Release Content

This document provides the Release Notes for EM160R-GL-AP. The current release includes the firmware package.

Package	Version
Firmware	EM160RGLAPR02A07M4G_01.200.01.200

2. Matters Needing Attention

SN	Item
[1]	Support data only.
[2]	4Gb NAND flash and 2Gb LPDDR4X MCP are supported.
[3]	The new firmware version cannot be downgraded to previous versions, otherwise the module will not be able to work normally.

3. Release History

3.1. Firmware Release History

Firmware Release	Description
EM160RGLAPR02A07M4G_01.200.01.200	Mass production
EM160RGLAPR02A07M4G_01.001.01.001	Only for sample
EM160RGLAPR02A04M4G_01.001.01.001	Only for sample
EM160RGLAPR02A03M4G_01.001.01.001	Only for sample
EM160RGLAPR02A02M4G_01.001.01.001	Only for sample
EM160RGLAPR02A01M4G_01.001.01.001	Only for sample

3.2. New Features

EM160RGLAPR02A07M4G_01.200.01.200	
Item	Brief Description
NETWORK	Relevant technical controls have been carried out to restrict normal network registration in regions such as RUS and IRN, thus ensuring that the module can be used only for civilian applications.
GENERAL	The new firmware version cannot be downgraded to previous versions, otherwise the module will not be able to work normally.
EM160RGLAPR02A07M4G_01.001.01.001	
Item	Brief Description
GENERAL	Added AT+QNWCFG="attach_apn" to control the APN selected for network registration.
ESIM	Added AT+QSIMCFG="OS" to query the software version of Gemalto eSIM.
GENERAL	Supported to enter flight mode by pulling down W_DISABLE1 Pin.
GENERAL	Added the solution on PTCRB test case failure.

EM160RGLAPR02A04M4G_01.001.01.001

Item	Brief Description
GENERAL	Supported FCC 2-way authentication and enabled this feature by default.
LowPower	Supported D3 Cold.

EM160RGLAPR02A03M4G_01.001.01.001

Item	Brief Description
GENERAL	Added secure boot feature and disabled it by default.
GENERAL	Added AT command AT+QCFG="fcc_enable" to enable the FCC 2-way authentication function.
GENERAL	Added AT command AT+QPCIE="id" to configure PCIE ID for the fused module.
SIMCARD	Disabled the hot-plugging feature of SIM card 2 by default.

EM160RGLAPR02A02M4G_01.001.01.001

Item	Brief Description
NETWORK	Disabled roaming.
GENERAL	Added AT command AT+QLOG to save specific system log.
GENERAL	Added Commercial-DCM and Commercial-KDDI certification related NV configurations.
GENERAL	Configured Pin68 to 2x2MIMO when Pin68 was in high/float level, and 4x4MIMO when Pin68 was in low level.
GENERAL	Added limitation to LTE band 1/3/7/20/38/46 in Commercial-EE MBN.
GENERAL	Added the limitation to the bands of Verizon certification.
MBIM	Added SMS report feature in MBIM.
GENERAL	Enabled hot-plugging for SIM1 and disabled hot-plugging for SIM2.
GENERAL	Added Commercial-DCM MBN.
GENERAL	Added power difference configuration to meet Japan certification requirements.
GENERAL	Supported AT command AT+QCERTIOP to configure APN.
GENERAL	Added AT command AT+QCFG="lte4x4mimo/swmethod" to switch MIMO.
GENERAL	Added Commercial-TMO MBN.
GENERAL	Added AT command AT+QNWCFG="up/down" to query the average throughput

	rate of uplink and downlink data.
GENERAL	Added AT command AT+QRSRP to query the RSRP of every antenna.
GENERAL	Supported PCIE D3HOT mode.
GENERAL	Added Commercial-DCM and Commercial-SBM certification related requirements.
GENERAL	Supported to register to band 17 through MFBI+Band 12.
GENERAL	Added AT command AT+QESIM="Ipamode" to configure LPA mode.

3.3. Improved Features

EM160RGLAPR02A07M4G_01.200.01.200	
Item	Brief Description
LwM2M	Solved the problem that SMS message failed to be received when the module received OMADM/LwM2M WAP Push SMS messages without sending back an ACK.
EM160RGLAPR02A07M4G_01.001.01.001	
Item	Brief Description
MBIM	Solved the problem of Telecom SIM card S4/S5 UN-Pin failure.
MBIM	Solved the problem of MBIM icon YB due to memory leakage after switching between ALL PORT mode/MBIM + GPS mode.
GENERAL	Modified the maximum TX value of some bands.
GENERAL	Optimized authentication logic to solve the problem of probabilistic authentication failure after the module woke up from sleep.
GENERAL	Optimized firehose upgrade strategy to continue the upgrading process even after an upgrading failure.
EM160RGLAPR02A04M4G_01.001.01.001	
Item	Brief Description
GENERAL	Reduced the probability of module crash caused by abnormal IPA in stress test.
GENERAL	Updated ICCID and PLMN of Commercial-Sprint MBN.
GENERAL	Solved the problem that the module firmware information displayed incorrectly.
GENERAL	Solved the problem of memory leak and module dump after receiving the short

	message.
LowPower	Solved the problem that the current consumption exceeded 16 MA after the module was suspended in the flight mode without a SIM card.
NETWORK	Solved the problem of terminal DM test failure due to no information reported on the DM platform.
SIMCARD	Solved the problem that after unlocking the PIN of the SIM card in the MBIM network card, MBIM would be automatically connected after the module woke up from sleep and it was expected that the PIN needs to be unlocked again before MBIM was connected.

EM160RGLAPR02A03M4G_01.001.01.001

Item	Brief Description
NETWORK	Fixed the problem that the RSRP values of RX2 and RX3 of WCDMA and LTE returned by AT+QSRP were incorrect.
NETWORK	Solved the problem of no URC report when the module received ETWS.
GENERAL	Incorporated Qualcomm patch to solve the problem that the module did not support 4*4MIMO.
GENERAL	Configured the first APN of Commercial-Sprint MBN to r.ispsn.
NETWORK	Solved the problem that the module could not register to the network automatically after rebooting if an invalid cell was locked with AT+QNWLOCK .

EM160RGLAPR02A02M4G_01.001.01.001

Item	Brief Description
GNSS	Solved the problem that the PCIE port could not output NMEA sentence.
GENERAL	Configured FGI bit 27/28/29 in AT&T MBN to 0.
GENERAL	Solved the problem that MBN could not be selected through PLMN.
GNSS	Solved the problem that AT+QGPSCFG="outport","usbhmea" did not take effect.
GENERAL	Configured network type to MBIM by default.

3.4. Known Issues

Item	Bug Description
/	/

NOTE

Verification Environment is shown below. For more details, please contact Quectel Technical Support.

For Windows,

PCIe Driver: Quectel_EM160R-GL_Driver_Win10x64_v1.0.0.7.zip

PCIe Qflash Tool: QFlash_PCIE_V1.0.zip

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4. Functions List

Category	Item	Supported Version (Since)	Note
Basic Function	SMS	EM160RGLAPR02A01M4 G_01.001.01.001	/
	FILE	EM160RGLAPR02A01M4 G_01.001.01.001	Support UFS File
Protocol Function	NITZ	EM160RGLAPR02A01M4 G_01.001.01.001	/
Special Function	SIM Detection	EM160RGLAPR02A01M4 G_01.001.01.001	/
	MBIM	EM160RGLAPR02A01M4 G_01.001.01.001	/
	LowPower	EM160RGLAPR02A04M4 G_01.001.01.001	/
	ESIM	EM160RGLAPR02A03M4 G_01.001.01.001	/
	Win10 SMS	EM160RGLAPR02A03M4 G_01.001.01.001	/

About Quectel

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