

Quectel RM502Q-AE

IoT/eMBB-Optimized
5G Sub-6 GHz M.2 Module



RM502Q-AE-AA

Release Notes

5G Module Series

Rev. RM502Q-AE-AA_Firmware_Release_Notes_V1102_01.002.01.002

Date: 2020-12-15

Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local office. For more information, please visit:

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

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

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

Or email to support@quectel.com.

Disclaimer

While Quectel has made efforts to assure the accuracy of this document, unless otherwise provided by valid agreement, Quectel assumes no liability resulting from any inaccuracies or omissions in this document, or from use of the information obtained herein. Quectel reserves the right to make changes to any contents described herein and reserves the right to revise this document and to make changes from time to time in content hereof with no obligation to notify any person of revisions or changes. Before using any updated software, please read this statement carefully. By accessing or using the said software you irrevocably and unconditionally accept and confirm that you agree to be bound by this statement. In the event you disagree with any provision hereof and would not like to be bound by this statement you shall cease use of the said software immediately.

Duty of Confidentiality

The Receiving Party shall keep confidential all documentation and information provided by Quectel, except when the specific permission has been granted by Quectel. The Receiving Party shall not access or use Quectel's documentation and information for any purpose except as expressly provided herein. Furthermore, the Receiving Party shall not disclose any of the Quectel's documentation and information to any third party without the prior written consent by Quectel. For any noncompliance to the above requirements, unauthorized use, or other illegal or malicious use of the documentation and information, Quectel will reserve the right to take legal action.

Copyright

The information contained here is proprietary technical information of Quectel Wireless Solutions Co., Ltd. Transmitting, reproducing, disseminating and editing this document as well as using the content without permission are forbidden. Offenders will be held liable for payment of damages. All rights are reserved in the event of a patent grant or registration of a utility model or design.

Copyright © Quectel Wireless Solutions Co., Ltd. 2020. All rights reserved.

Contents

Contents	2
1. Release Content.....	3
2. Matters Needing Attention	3
3. Release History	4
3.1. Firmware Release History	4
3.2. New Features	4
3.3. Improved Features	5
3.4. Known Issues	6
4. Functions List.....	8

1. Release Content

This document provides the Release Notes for RM502Q-AE-AA. The current release includes the firmware package.

Package	Version
Firmware	RM502QAEAAR11A02M4G_01.002.01.002

2. Matters Needing Attention

SN	Item
[1]	SA MBIM dialing is supported in Windows 10 1903 and above versions.
[2]	5G CA and VoNR are not supported.

3. Release History

3.1. Firmware Release History

Firmware Release	Description
RM502QAEAAAR11A01M4G_01.001.01.001	Internal use only
RM502QAEAAAR11A02M4G_01.001.01.001	Only for sample
RM502QAEAAAR11A02M4G_01.002.01.002	Only for sample

3.2. New Features

RM502QAEAAAR11A02M4G_01.001.01.001

Item	Brief Description
GENERAL	Added the feature of flashing fool-proofing that the versions of a different module are not allowed to be upgraded in the module.
GENERAL	Added AT+QSINR and AT+QSRQ to query the received signal value.
GENERAL	Added AT+QMAP="lan" to configure QCMAPI LAN IP.
NETWORK	Added AT+QNWPREFCFG="nr5g_disable_mode" to disable NR5G configuration.
GENERAL	Configured the module to data only. Added Telus_DataOnly MBN version 20200911.

RM502QAEAAAR11A02M4G_01.002.01.002

Item	Brief Description
NETWORK	Added 513/624 channel and B3C_n78.
NETWORK	Added AT+QNWCFG="dss_enable" to control the DSS function.
NETWORK	Added AT+QNWCFG="lte_cell_id" and AT+QNWCFG="nr5g_cell_id" to obtain ECI/NCI related parameters.
USB	Added AT+QCFG="usbspeed" to switch between USB 2.0 and USB 3.0 interface protocols.
Thermal Mitigation	Set the Level 2 temperature threshold of thermal mitigation mechanism to

105 °C.

5G	Added AT+QNWCFG="nr5g_cdrx" to control 5G_CDRX.
GENERAL	Added AT+QETH="eth_at" to support SMD switching between Modem port and Ethernet port.

3.3. Improved Features

RM502QAEALAR11A02M4G_01.001.01.001

Item	Brief Description
GENERAL	Modified NV73890 from 0 to 1 to solve the problem that the LTE throughput rate was not up to standard.
GENERAL	Solved the problem that the module could not enter flight mode after pulling low W_DIS pin.
USB	Solved the problem of product name display error at the first boot-up after the module downloaded the firmware version.

RM502QAEALAR11A02M4G_01.002.01.002

Item	Brief Description
GENERAL	Extended AT+CPOL to check whether the SIM card supported NR5G.
NETWORK	Solved the problem that the module could not work normally when executing AT+QIMSACT=0 .
NETWORK	Solve the problem that the return value of AT+CREG after setting AT+CGATT=0 was wrong after inserting the SIM card of China Mobile or China Telecom.
NETWORK	Maintained the default value of <SINR> of AT+QENG="servingcell" to -32768 when NSA network was in idle state.
NETWORK	Solved the problem that when AT+QGPAPN=1 was executed under real network, the module would not work normally under certain environment.
LowPower	Solved the problem that there was no URC report when the module received SMS in sleep mode.
5G	Solved the problem that AT+QNWLLOCK="common/5g" did not take effect after module restart.
GENERAL	Solved the problem that the band value returned by AT+QENG in EN-DC mode was incorrect.
GENERAL	Solved the problem that there was no URC +QIND: SMS DONE report at module restart.
GNSS	Solved the problem of returning historical residual information when executing AT+QGPSGNMEA for the first time.

LowPower	Solved the problem that when you executed AT+CFUN=0/AT+CFUN=4 , the module entered slow clock but the current consumption value unexpectedly maintained at 28 mA.
LowPower	Solved the problem that when you executed AT+CFUN=1 , the module could not enter slow clock in linux and the current consumption continues to be 2-300 mA.
PCIe	Solved the problem that after configuring to PCIe mode by executing AT+QC FG="data_interface",1,0 ,QMI and AT port did not respond after booting the module with IPQ4019.
PCIe	Solved the problem that the port could not be loaded after switching to IPQ4019 if you executed AT+QCFG="data_interface",1,0 to configure PCIe and IPQ8074 could be loaded normally.

3.4. Known Issues

Item	Bug Description
NETWORK	In NSA base network, after fixing to LTE mode, AT+QENG="neighbourcell" does not return neighboring cell information.
DFOTA	When you perform DFOTA upgrade with IPQ 4019, URC +QIND: "FOTA","START" is not reported.
GENERAL	When network URC automatic report is enabled, URC is reported when CSQ is not changed; and no URC +CREG: and +CGREG: is reported.
LowPower	After executing AT+QSCLK=1,1 to enter slow clock and then rebooting the module, the module could not enter slow clock again.
PCIE	After executing AT+QCFG="data_interface",1,0 the USB AT port cannot work normally probabilistically after the module enables ADB.

NOTE

Verification Environment is shown below. For more details, please contact Quectel technical support.

For Windows,

USB Driver: Quectel_LTE&5G_Windows_USB_Driver_V2.2.4.zip

Qflash Tool: QFlash_V4.18

QLog Tool: QWinLog_V1.6.1.zip

For Linux,

QMI_WWAN Driver: Quectel_Linux&Android_QMI_WWAN_Driver_V1.2.0.12.zip

GobiNet Driver: Quectel_Linux&Android_GobiNet_Driver_V1.6.1.zip

PCIE Driver: Quectel_Linux_PCIE_MHI_Driver_V1.3.0.11.zip

QFirehose Tool: Quectel_LTE&5G_QFirehose_Linux&Android_V1.3.2.zip

Quectel-CM Tool: Quectel_QConnectManager_Linux_V1.6.0.12.zip

QLog Tool: Quectel_QLog_Linux&Android_V1.4.7.zip

Quectel IPQ Driver: Quectel_Linux_PCIE_MHI_Driver_V1.3.0.15.zip

Qualcomm IPQ Driver: spf11.1

Quectel
Confidential

4. Functions List

Category	Item	Supported Version(Since)	Note
Basic Function	SMS	RM502QAEAAR11A02M4G_01.001.01.001	/
	NETWORK	RM502QAEAAR11A02M4G_01.001.01.001	/
Protocol Function	QMI	RM502QAEAAR11A02M4G_01.001.01.001	/
Interface Function	USB	RM502QAEAAR11A02M4G_01.001.01.001	/
	MBIM	RM502QAEAAR11A02M4G_01.001.01.001	/
	RmNet	RM502QAEAAR11A02M4G_01.001.01.001	/
	PCIE	RM502QAEAAR11A02M4G_01.001.01.001	/
Locate Function	AGPS	RM502QAEAAR11A02M4G_01.002.01.002	
Upgrade Function	DFOTA	RM502QAEAAR11A02M4G_01.002.01.002	
SIM Function	(U)SIM Detection	RM502QAEAAR11A02M4G_01.001.01.001	/
	RF RX FTM	/	Not support currently
Special Function	RF TX FTM	/	Not support currently
	LowPower	RM502QAEAAR11A02M4G_01.002.01.002	
5G Function	Thermal Mitigation	RM502QAEAAR11A02M4G_01.002.01.002	
	5G	RM502QAEAAR11A02M4G_01.001.01.001	/

About Quectel

Quectel Wireless Solutions is the leading global supplier of cellular and GNSS modules, with a broad product portfolio covering the most recent wireless technologies of 5G, LTE/LTE-A, NB-IoT/LTE-M, UMTS/HSPA(+), GSM/GPRS and GNSS. As a professional IoT (Internet of Things) technology developer and cellular module supplier, Quectel is able to provide one-stop services for IoT cellular modules. Quectel products have been widely applied in IoT/M2M fields including smart payment, telematics and transport, smart energy, smart cities, security, wireless gateways, industry, healthcare, agriculture, and environment monitoring.

