

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_V1104_01.203.01.203

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1. Release Content

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

Package	Version
Firmware	RM502QAEAR11A04M4G_01.203.01.203

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]	The new firmware version cannot be downgraded to versions released before RM502QAEAR11A04M4G_01.200.01.200, otherwise the module will not be able to work normally.
[4]	To extend the service life of flash, it is recommended that the total number of operations related to powering on/off the module, CFUN switching, SIM card hot swapping, dual-SIM switching, or repeated execution of NVM commands should not exceed 30 times per day.
[5]	It is not recommended to directly modify the pre-set APN profiles. Please create an APN profile after the existed CID number. Suppose you modify the APN profile of IMS, SOS, etc. with added specific attributes, these attributes are hidden after modification, causing the profile to still be unavailable.
[6]	During the FOTA upgrade process, it is necessary to ensure the stable power supply of the module. If the power is disconnected during the upgrade, there is a small probability that the flash will be damaged.
[7]	M.2 module is encapsulated without SPI, and SLIC cannot be mounted on the module.

3. Release History

3.1. Firmware Release History

Firmware Release	Description
RM502QAEAAR11A04M4G_01.203.01.203	Mass production
RM502QAEAAR11A04M4G_01.202.01.202	Mass production
RM502QAEAAR11A04M4G_01.201.01.201	Mass production
RM502QAEAAR11A04M4G_01.200.01.200	Mass production
RM502QAEAAR11A04M4G_01.006.01.006	Mass production
RM502QAEAAR11A04M4G_01.005.01.005	Mass production
RM502QAEAAR11A04M4G_01.004.01.004	Mass production
RM502QAEAAR11A04M4G_01.003.01.003	Mass production
RM502QAEAAR11A04M4G_01.002.01.002	Mass production
RM502QAEAAR11A02M4G_01.003.01.003	Mass production
RM502QAEAAR11A02M4G_01.002.01.002	Only for sample
RM502QAEAAR11A02M4G_01.001.01.001	Only for sample
RM502QAEAAR11A01M4G_01.001.01.001	Internal use only

3.2. New Features

RM502QAEAAR11A04M4G_01.203.01.203	
Item	Brief Description
GENERAL	<p>Added the following AT commands:</p> <ul style="list-style-type: none"> AT+QNWCFG="lte_mimo_info" to enable or disable the querying of LTE MIMO information. AT+QRSSI to obtain the RSSI of the current service network of the module.

RM502QAEAR11A04M4G_01.202.01.202

Item	Brief Description
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RM502QAEAR11A04M4G_01.201.01.201

Item	Brief Description
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RM502QAEAR11A04M4G_01.200.01.200

Item	Brief Description
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LwM2M	Disabled AT&T LwM2M by default.
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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.
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GENERAL	The new firmware version cannot be downgraded to previous versions, otherwise the module will not be able to work normally.
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GENERAL	<p>Added the following AT commands:</p> <ul style="list-style-type: none"> ● AT+QNWCFG="ledmode" to set the blinking mode of the network light. ● AT+QWDSCFG="operator_reserved_pco" to configure PCO. ● AT+QNWCFG="nr5g_4mimo_enable" to control 4*MIMO of NR5G bands. ● AT+QNWCFG="nitz_ons" to query PLMN long name and short name from NITZ.
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RM502QAEAR11A04M4G_01.006.01.006

Item	Brief Description
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GENERAL	Enabled 5G function of Commercial-Reliance MBN and modified the MBN date to 202210211.
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GENERAL	<p>Added the following AT commands:</p> <ul style="list-style-type: none"> ● AT+QFOTAPID to configure the Profile ID used in FOTA upgrade. ● AT+QSIMCFG="dual_slot_status" to query related parameters when dual SIM cards were inserted. ● AT+QNWCFG="cops_auto_mode" to configure whether the mode preference is controlled by AT+COPS. ● AT+QNWCFG="sysmode" to query Sysmode and Submode.
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RM502QAEAR11A04M4G_01.005.01.005

Item	Brief Description
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GENERAL	Added enhanced APN.
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Added the following AT commands:

GENERAL

- **AT+QSIMCFG="atr"** to query the answer to reset.
- **AT+QNWCFG="freq_info"** to query uplink and downlink frequencies.
- **AT+QNWCFG="msisdn"** to query MSISDN from network.
- **AT+QNWCFG="lte_pco"** to query LTE PCO information.
- **AT+QSIMCFG="esim_svn"** to obtain the eSIM SGP version number.
- **AT+QSIMCFG="slot_status"** to get the status of the SIM card slot.

RM502QAEAR11A04M4G_01.004.01.004

Item	Brief Description
GENERAL	Enabled to output QXDM log by default.

GENERAL Added **AT+QCFG="gatewayset"** to set gateway address of the module.

RM502QAEAR11A04M4G_01.003.01.003

Item	Brief Description
DFOTA	Added the function of reporting DFOTA upgrade progress on the Debug port.
Thermal Mitigation	Added AT+QTHERMAL to increase the URC reporting function of the thermal mitigation levels.
GENERAL	Added two MBNs of Telus-Do_Consumer and Telus-Do_Jasper.
GENERAL	Disabled the GEA1 algorithm by default.
GENERAL	Added AT+QSVN to obtain IMEISV.

RM502QAEAR11A04M4G_01.002.01.002

Item	Brief Description
NETWORK	Added AT+QNWCFG="nr5g_meas_info" to display 5G neighboring cell information.
NETWORK	Added AT+QNWCFG="nr5g_pref_freq_list" to configure the preference frequency list of NR5G.
NETWORK	Added AT+QNWCFG="used_algo" to obtain the current encryption algorithm and integrity algorithm.
NETWORK	Added AT+QNWCFG="nr5g_earfcn_lock" to lock NR5G EARFCN.
NETWORK	Added AT+QNWCFG="data_roaming" to control data roaming.
NETWORK	Added AT+QNWCFG="encryp_alg_support" and AT+QNWCFG="integ_alg_support" to obtain supported encryption algorithms and integrity algorithms respectively.
NETWORK	Set the default value of <mode_pref> in AT+QNWPREFCFG="mode_pref" to AUTO to support LTE and 5G NR.

NETWORK	Added AT+QNWCFG="dis_rplmn" and AT+QNWCFG="dis_rplmnact" to control RPLMN and RPLMNACT respectively.
NETWORK	Added AT+QNWCFG="lte_ambr" and AT+QNWCFG="nr5g_ambr" to obtain the AMBR information of all activated APNs under LTE and 5G NR.
SMS	Supported automatic deletion of read messages when the message space was full.
ESIM	Added eSIM LPA feature.
5G	Enabled all 5G bands.
GENERAL	Added AT+QNWCFG="wcdma_cqi" to get the CQI value.
GENERAL	Added AT+QCFG="ResetFactory" to restore factory settings.
GENERAL	Added n28 to NSA and SA of China Mobile.
GENERAL	Supported Secure Boot feature and disabled it by default.
GENERAL	Added AT+QCFG="clat" to control clat_enabled.
GENERAL	Enabled UL LTE 256QAM in ENDC for Commercial-SKT MBN.
GENERAL	Enabled TCP Keepalive.
GENERAL	Disabled SA and NSA n77 of AT&T.
GENERAL	Added AT+QESMINFO and AT+QEMMINFO to query ESM and EMM error codes.
GENERAL	Disabled 256QAM and deleted some CAs for BELL MBN.
GENERAL	Added AT+QNWCFG="dis_4mimo_enable" to control 4*MIMO under LTE bands.
GENERAL	Turned off pwm1 by default when the module was powered on.
GENERAL	Disable IMS roaming on CDMAless-Verizon.
GENERAL	Added AT+QNWCFG="lte_ambr" to obtain the AMBR information of all activated APNs under LTE.
GENERAL	Turn off n2, n25 and n66.

RM502QAEAR11A02M4G_01.003.01.003

Item	Brief Description
NETWORK	Enabled DSS by default.
RmNet	Added AT+QNETDEVSTATUS to query RmNet device status.
Thermal Mitigation	Supported configuring MDM thermal mitigation strategy through AT+QCFG="thermal5g/mdm" .

GENERAL	Added RF band bandwidth.
GENERAL	Added AT+QNWCFG="up/down" and AT+QGDNRCNT to query rate statistics and data flow statistics.
GENERAL	Modified the default value of IMS_enable of KDDI MBN to 1.
GENERAL	Deleted the subcommands of AT+QCFG="usbspeed" and AT+QCFG="netmaskset" displayed by AT+QCFG=? .
GENERAL	Added AT+QMAP="mac_bind" to obtain IPv4 and MAC addresses.
GENERAL	Added AT+QSCAN to scan the base station information without a SIM card.
SIMCARD	Added AT+QSIMCFG="disable_physim" to disable SIM card feature.

RM502QAEAR11A02M4G_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.

RM502QAEAR11A02M4G_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+QRSRQ to query the received signal value.
GENERAL	Added AT+QMAP="lan" to configure QCMAP 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.

3.3. Improved Features

RM502QAEAAR11A04M4G_01.203.01.203	
Item	Brief Description
DATA CALL	Solved the problem that the DHCP passthrough feature did not work.
NETWORK	Solved the problem that an error was reported when the length of parameter <APN> in AT+QICSGP was 63 bytes.
GENERAL	Solved the problem that no value was returned after the execution of AT+QMBNCFG="List" in some cases.
RM502QAEAAR11A04M4G_01.202.01.202	
Item	Brief Description
MBIM	Solved the problem that the registration status queried with AT+CREG/AT+CEREG/AT+CGREG/AT+C5GREG was incorrect.
NETWORK	Modified the value of <SRS_tx_pwr> in the return result of AT+QNWCFG="lte_tx_pwr" .
GENERAL	Solved the problem that URC could only be sent through the USB AT port, USB modem port and UART1 because the URC reporting ports were limited.
RM502QAEAAR11A04M4G_01.201.01.201	
Item	Brief Description
/	/
RM502QAEAAR11A04M4G_01.200.01.200	
Item	Brief Description
VOICE CALL	Solved the problem that some encoding methods were not supported for URC reporting of the USSD error codes.
GENERAL	Solved the problem that incorrect values might return by AT+QCFG="CLAT" .
GENERAL	Extended AT+QSINR to obtain the SINR value in NSA.
RM502QAEAAR11A04M4G_01.006.01.006	
Item	Brief Description
GNSS	Solved the problem that AT+QGPSCFG="glonassnmeatype" did not take effect after the module was rebooted.
NETWORK	Solved the problem that executing AT+QNWINFO under NSA could not return NSA network information.
SIMCARD	Solved the problem that the SMS center address remained the same when you switched the SIM cards to a different operator in hot-swap mode.

GENERAL	Solved the problem that the modules might not work normally when a T-Mobile IoT SIM card to register on NSA N41.
GENERAL	<p>Solved the following problems of AT+QSCAN:</p> <ul style="list-style-type: none"> ● Solved the problem that AT+QSCAN could not scan the cell information without TAC when network mode was automatically configured. ● Solved the problem that the RSRP and RSRQ values returned by AT+QSCAN in some cases were null. ● Solved the problem that only OK was returned when <mode> in AT+QSCAN was set to 3 and a non-TAC cell was searched.
GENERAL	Solved the problem that the module could not work properly after executing AT+QNWPREFCFG and then immediately executing AT+QSCAN .
GENERAL	Changed the value of NatEntryUDPTIMEOUT to 360 seconds.
GENERAL	Solved the problem that the operator information queried by AT+COPS=? was incorrect in some cases.
GENERAL	Optimized AT+QSIMLOCK to support a maximum length of 16 characters for the configured password.
GENERAL	Updated AT+QNWLOCK="common/4g" to support lock the frequency point number that is over 65535.
GENERAL	<p>Solved the following problems of AT+QENG="servingcell":</p> <ul style="list-style-type: none"> ● Solved the problem that the SINR value of 5G secondary cell under NSA queried with AT+QENG="servingcell" was incorrect. ● Solved the problem of incorrect SINR value of LTE cells queried by AT+QENG="servingcell".
GENERAL	Solved the problem that NR5G SA and NSA bands being lost after upgrading firmware version.
GENERAL	Optimized AT+QCAINFO to add restrictions and judgments on the network so that the parameters were returned after connecting to the network.
GENERAL	Solved the problem of not supporting the query of the uplink frequency of LTE under NSA with AT+QNWCFG="freq_info" .
GENERAL	Solved the problem that the return value of AT+QNWCFG="ctrl_plane_dly" was incorrect in NSA mode.
GENERAL	Extended AT+QNWCFG="ssb_beam_id" to add <serving_rx_beam> .
GENERAL	Added parameter <5G_UWB> in AT+QENDC and supported URC report.
GENERAL	Solved the problem that the MPDN rule was not deleted when the module was powered off, which affected the module configuration when it was powered on the next time.
RM502QAEAR11A04M4G_01.005.01.005	
Item	Brief Description
SMS	Solved the problem that the module did not reply ACK when it received OMA DM WAP push SMS.

NETWORK	Solved the problem of no +C5GREG: <stat> URC report when the module switched from LTE to 5G NR when AT+C5GREG=1 was executed.
NETWORK	Optimized AT+QSRP to support querying RSRP value under NR5G.
NETWORK	Extended AT+QSCAN to show registered 5G cells.
NETWORK	Extended AT+QNWCFG="rrc_state" to support URC reporting.
NETWORK	Extended AT+QSCAN to support querying more parameters under LTE.
NETWORK	<p>Solved the following problems of AT+QSCAN:</p> <ul style="list-style-type: none"> ● Solved the problem that AT+QSCAN did not display subsequent cell information when a single cell information reached 79 characters. ● Solved the problem that incorrect PLMN information was returned after executing AT+QSCAN.
NETWORK	Solved the problem that after disabling NSA, you can still query the NSA information with AT+QENG .
NETWORK	Extended AT+QCAINFO to support NSA and SA.
DFOTA	Modified the data length supported by AT commands to support long URLs in DFOTA upgrade.
GENERAL	Updated the command set and the response format of AT+QMAP .
GENERAL	Solved the probabilistic problem of frequent network disconnection and reconnection caused by frequent dial-up failures in private network.
GENERAL	Solved the problem that the AT port could not work properly after configuring to report the URC through all ports.
GENERAL	Extended AT+QGPAPN to support querying IP address and other information.
GENERAL	Modified AT+QGPAPN to adapt it to NSA.
GENERAL	Solved the problem that only one APN could be queried through AT+QGPAPN after multiple data call under SA.
GENERAL	Optimized the IMEI anti-tampering function.
GENERAL	Solved the problem that the configuration would be rewritten after configuring <enable> of AT+QCFG="pdp/duplicatechk" and then restarted the module.
GENERAL	Optimized the way AT+QENG judged NSA cells.
GENERAL	Optimized the function of URC +C5GREG .
GNSS	Solved the problem that \r was missing in NMEA sentences in PCIe environment.
SIMCARD	Solved the problem that AT+CGLA did not respond when timeout occurred when APDU was sent in some scenarios.

RM502QAEAR11A04M4G_01.004.01.004

Item

Brief Description

NETWORK	Solved the problem of AT+QNWCFG="lte_band_priority" report error when the LTE band priority was not configured.
NETWORK	Solved the problem that the cell information was not displayed in the return value after executing AT+QENG="servingcell" when the SIM card was not inserted.
NETWORK	Modified the characteristics of AT+QNWLOCK to take effect immediately and the configuration to be not saved.
NETWORK	Extended AT+QCAINFO by adding <UL_configured> , <UL_bandwidth> and <UL_EARFCN> to obtain the uplink bandwidth and EARFCN of CA.
NETWORK	Optimized AT+QENG and AT+QCAINFO to solve the problem of response error in some cases.
NETWORK	Solved the problem that the MCC and MNC returned by AT+QNETINFO="servingcell" were invalid values.
GENERAL	Optimized the compatibility of the module with the RTL8125 PHY.
GENERAL	Solved the problem of incorrect values queried by AT+QCFG="clat" .
GENERAL	Solved the problem that the APN format returned by AT+QNWCFG="lte_ambr" or AT+QNWCFG="nr5g_ambr" was x after activating the APN in x.y.z format.
GENERAL	Solved the problem that LwM2M-related URC reporting was not configured by AT+QURCCFG .
GENERAL	Solved the problem that the caller ID cannot be recognized under the German network after activating ROW MBN.
GENERAL	Solved the problem that AT+QSPN returned an error message under limited services.
GENERAL	Solved the problem that USSD functionality could not be used.
GENERAL	Solved the problem that the return value of AT+QSINR was incorrect.
GENERAL	Modified the Tx power of B38/B40/B41/B42/B43 to 26 dBm compliant to PC2.

RM502QAEAR11A04M4G_01.003.01.003

Item	Brief Description
NETWORK	Updated the PLMN list of the TS 25 operator.
NETWORK	Optimized AT+QSRP by returning -32768 to indicate an invalid value.
GENERAL	Modified the APN of the first profile of Telstra MBN to Telstra.internet.
GENERAL	Solved the problem of incorrect results queried by AT+QGDNRCNT in some cases.
GNSS	Solved the problem of no NMEA sentence output when AT+QGPS=2 was entered in the situation that the return value <plane> of AT+QGPSCFG="plane" was 0.
SIMCARD	Solved the problem that AT+CGLA could not return long data.

RM502QAEAR11A04M4G_01.002.01.002

Item	Brief Description
SMS	Solved the problem that there was no SMS push to receive messages after the SMS space was full.
NETWORK	Solved the problem of incorrect service provider name returned by AT+QSPN .
NETWORK	Optimized the WCDMA band format of <band> in AT+QNWINF to keep it consistent with the actual band name.
NETWORK	Solved the problem that the frequency band information of "TDD NR5G" and "FDD NR5G" returned by AT+QNWINF was inconsistent with the actual information.
NETWORK	Solved the problem that <MCC> and <MNC> of the LTE cells returned by AT+QSCAN under SA had no value.
NETWORK	Extended AT+QSCAN to support querying LTE cell bandwidth information and 5G cell SSB SCS information.
NETWORK	Extended AT+QSCAN to obtain or calculate the frequency of the carrier center.
NETWORK	Fixed the problem that the value of <ri> in AT+QNWCFG="nr5g_csi" was incorrect.
NETWORK	Solved the problem that the returned value of AT+QENG="neighbourcell" was incorrect.
NETWORK	Solved the problem that the return value of AT+QENG="neighbourcell" was incorrect under LTE.
NETWORK	Solved the problem of insufficient display bit width of the NR 5G cell ID queried by AT+QENG="servingcell" .
NETWORK	Solved the problem that the return value queried through AT+QNWCFG="dis_4MIMO_enable" was incorrect.
NETWORK	Modified the default value of AT+QNWCFG="dis_4MIMO_enable" to 1, and solved the problem that the configuration might not take effect.
NETWORK	Solved the problem of incorrect TX power returned by AT+QNWCFG="nr5g_tx_pwr" .
NETWORK	Modified AT+QCAINFO by replacing the value of <SINR> with <RSSNR> .
NETWORK	Solved the problem that the 5G network did not change but the URC was reported abnormally after the module deregistered and then re-registered the network.
NETWORK	Solved the problem of URC +CREG and +CEREG report error if you queried network status when the module was in weak or no signal strength.
NETWORK	Optimized AT+QNWCFG="LTE_tx_pwr" to support querying PUCCH, PRACH, SRS and PUSCH TX power.
RF RX FTM	Optimized AT+QRFTESTNR5G="RX" to support testing other level signals other than -50 dBm.
GENERAL	Solved the problem of incorrect return value of AT+QCAINFO .

GENERAL	Solved the problem of incorrect terminal capability when using third-party LPA.
GENERAL	Solved the problem that the module could not respond correctly to C-APDU requests.
GENERAL	Optimized AT+QGDNRCNT so that it could query the last recorded traffic data even when the data call was disconnected.
GENERAL	Solved the problem of URC reporting abnormally when the cell signal did not change.
GENERAL	Solved the problem of A/ would be executed once more.
GENERAL	Solved the format problem of the return values of AT+QIMSCFG="user_agent" without double quotes.
GENERAL	Solve the problem that Windows OS could not display the 5G icon after the module successfully registered the 5G NSA under Verizon.
GENERAL	Updated the version number of CDMAless_Verizon MBN to 202107291.
GENERAL	Solved the problem that AT+QCFG="ims" could not query the IMS registration status under SA network.
GENERAL	Solved the problem that the SIM card slot configuration did not take effect due to the change of the hash value.
GENERAL	Solved the problem that battery voltage read through ADC_INPUT_VPH_PWR was incorrect when the USB was inserted.
GENERAL	Solved the problem that AT+QGDNRCNT could not save the traffic statistics results to NVM.
GENERAL	Solved the problem that some ports could not report FOTA URC.
GENERAL	Extended AT+QSCAN to support querying cell ID and tracking area code.
GENERAL	Optimized AT+QMBNCFG="Select" so that it can query the currently selected MBN information.
GENERAL	Solved the problem of network access failure in some scenarios (such as roaming) after AT&T 3G sunset.
GENERAL	Solved the problem that the airplane mode could not be entered through the W_disable pin.
GENERAL	Solved the problem of <eps_mobile_identity> error in the return value of AT+QIMSCFG="qirep" .
GENERAL	Solved the probabilistic problem of return error through AT+QSRQ .
GENERAL	Modified default MTU of AT&T to 1430 and default MTU of FirstNet to 1342.
GENERAL	Solved the problem that the module could not power down normally after executing AT+QPOWD=1 .
GENERAL	Optimized +CREG/+CGREG/+CEREG/+C5GREG URC report logic to ensure that there were empty lines between URCs.
GENERAL	Solved the problem that the Windows interface abnormally showed no signal after registering for 5G SA with NDIS dial-up under Win10.

GNSS	Upgraded NMEA sentences to comply with 0183 v4.11 protocol.
GNSS	Fixed the problem of incomplete GSV sentences obtained by AT+QGPSGNMEA="GSV" .
SIMCARD	Solved the problem that there was no URC +CPIN: NOT INSERTED report when the module was powered on without inserting the SIM card.
USB	Solved the problem that USB3.1 port could not be enumerated normally in some scenarios in Linux.
USB	Extended AT+QCFG="usbspeed" and added the switch between USB3.1 Gen1 and Gen2.

RM502QAEAR11A02M4G_01.003.01.003

Item	Brief Description
NETWORK	Solved the problem that the return value of AT+QENG="neighbourcell" was too long and the module could not work normally.
NETWORK	Solved the problem of incorrect PLMN information returned by AT+QENG="servingcell" when sharing base stations.
NETWORK	Solved the problem that when the module registered to SA, <cellID> returned by AT+QENG="servingcell" was incorrect.
NETWORK	Expanded AT+QSRP to support returning the current network standard.
RF TX FTM	Updated the LTE/WCDMA Tx/Rx process to solve the problem that RX2 such as B42NB7/B3/B1 could not receive signals.
LowPower	Solved the problem that the configured AT+QSCLK did not take effect after module restarting.
LowPower	Solved the problem that it took too long for the module to go to sleep.
Thermal Mitigation	Optimized PA thermal mitigation strategy.
Thermal Mitigation	Solved the problem that the return value of AT+QTEMP was incorrect.
GENERAL	Solved the problem of incorrect upload and download rates queried by AT+QNWCFG="up/down" .
GENERAL	Optimized the format of AT+QAUDCFG="slic_IndRep" , AT+QAUDCFG="uac_cfg" and AT+QAUDCFG="uac_switch" .
GENERAL	Solved the problem that the configuration of AT+QCFG="ims" did not take effect after switching to another MBN when the module was shut down.

RM502QAEAR11A02M4G_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+QNWLOCK="common/5g" did not take effect after module restart.
GENERAL	Solved the problem of AT+QNEG displaying the wrong 5G band value in EN-DC mode.
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+QGPGNMEA 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+QCFG="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.

RM502QAEAAAR11A02M4G_01.001.01.001

Item	Brief Description
GENERAL	Solved the problem that the module could not enter flight mode after pulling low W_disable pin.
USB	Solved the problem of product name display error at the first boot-up after the module downloaded the firmware version.

3.4. Known Issues

Item	Bug Description
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NOTE

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

For Windows,

USB Driver: Quectel_LTE&5G_Windows_USB_Driver_V2.4.6.zip

Qflash Tool: QFlash_V6.0

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_V1.3.1.zip

QFirehose Tool: Quectel_LTE&5G_QFirehose_Linux&Android_V1.4.8.zip

Quectel-CM Tool: Quectel_QConnectManager_Linux_V1.6.0.12.zip

QLog Tool: Quectel_QLog_Linux&Android_V1.4.8.zip

Quectel IPQ Driver: Quectel_Linux_PCIE_MHI_Driver_V1.3.1.zip

Qualcomm IPQ Driver: spf11.1

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	/
	ESIM	RM502QAEAAR11A04M4G_01.002.01.002	/
Special Function	RF RX FTM	RM502QAEAAR11A02M4G_01.003.01.003	/
	RF TX FTM	RM502QAEAAR11A02M4G_01.003.01.003	/
	Low Power	RM502QAEAAR11A02M4G_01.002.01.002	/
	Thermal Mitigation	RM502QAEAAR11A02M4G_01.002.01.002	/
5G Function	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.

