

BG95M5 Release Notes

LPWA Products

Rev. BG95M5_Firmware_Release_Notes_V0203_A0.303.A0.303

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1 Preamble

This document provides the Release Notes for BG95M5 firmware version **BG95M5LAR02A03** (Configuration version **A0.303.A0.303**). It describes major changes compared to BG95M5 firmware version **BG95M5LAR02A03** (Configuration version **A0.301.A0.301**).

Before:

ATI

Quectel

BG95-M5

Revision: BG95M5LAR02A03

After:

ATI

Quectel

BG95-M5

Revision: BG95M5LAR02A03

AT+QGMR

BG95M5LAR02A03_A0.303.A0.303

2 Matters Needing Attention

Please strictly adhere to the following matters needing attention.

SN	Brief Description
[1]	Not support Cat-M1 CE Mode B.
[2]	The new firmware version cannot be downgraded to versions released before BG95M5LAR02A03_01.200.01.200, otherwise the module will not be able to work normally.
[3]	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, repeated execution of NVM commands, or backing up the file system should not exceed 30 times per day.
[4]	For important files (such as certificates, QuecOpen application, key profiles, etc.) stored in file system of the module, you must do backup operations (via AT+QPRTPARA=1 and AT+QPRTPARA=11) during device factory production or after those files are updated and added by your application.
[5]	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.
[6]	The current firmware version supports Secure Boot and Secure Debugging, and the Quectel signature is included in the security firmware versions by default. Whether Secure Boot is enabled by default when the firmware version is shipped from the factory depends on the OC you select. Secure Debugging is disabled by default and you can enable it with AT commands as required.
[7]	It is not recommended to use non-mass production firmware versions for mass production. If necessary, please contact Quectel Technical Support for evaluation to mitigate risks.
[8]	Please perform thorough acceptance testing of firmware versions, covering both normal and abnormal scenarios. Please also confirm that the firmware version used in production matches the one that has been tested and accepted.
[9]	Please use only the features supported by the module as specified in the product specification and avoid using any unsupported features. For special requirements, please contact Quectel Technical Support for evaluation to mitigate risks.
[10]	When performing firmware flashing, ensure that the target firmware version matches the module hardware. Incompatibility may lead to various issues, such as degraded RF performance.
[11]	It is strongly recommended to integrate FOTA functionality.
[12]	It is not recommended to remove any pre-implemented components or interfaces in Quectel modules. If necessary, please contact Quectel Technical Support for evaluation to mitigate risks.

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|------|--|
| [13] | Please strictly follow Quectel technical documentation when modifying partitions. If necessary, please contact Quectel Technical Support for evaluation. |
| [14] | Do not modify the contents of the DFOTA upgrade package, recompress it after decompression, or perform other similar operations, because these may lead to upgrade failure. Renaming the DFOTA package is currently supported. |

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3 New Features

3.1 New Features of Modem Protocol

Item/Category	Brief description	Since
NETWORK	Added AT+QNWCFG="freq_save" to configure whether to automatically save priority frequencies during network registration.	R02A03_A0.206.A0.206
NETWORK	Added AT+QNWCFG="causeinfo" to obtain network rejection causes.	R02A03_01.204.01.204
NETWORK	Added AT+QNWCFG="rodisallw" to disable roaming.	R02A03_01.201.01.201
NETWORK	Added AT+QCOPS to scan for available networks, with or without a card.	R02A03_01.201.01.201
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.	R02A03_01.200.01.200
NETWORK	Added AT+QNWCFG="hplmnsearch_cfg" to control whether the module performs HPLMN search in roaming network.	R02A03_01.008.01.008
NETWORK	Added AT+QCFG="pa_info" to get the physical PA device model, MID and PID.	R02A03_01.008.01.008
NETWORK	Added AT+QSFN to obtain the time aligned to the LTE SFN in span of 0–10240000us.	R02A03_01.007.01.007
NETWORK	Added support 3GPP command AT+CEMODE .	R02A03_01.005.01.005
NETWORK	Added support command AT+QNWCFG="esmcause" .	R02A03_01.005.01.005
NETWORK	Added command AT+QNWCFG="3gpp_rel_control" to configure NB/CATM 3GPP release version.	R02A03_01.004.01.004
NETWORK	Added command AT+QNWCFG="nb_feature_ctrl" to configure NB features.	R02A03_01.004.01.004
NETWORK	Added command AT+QNWCFG="catm_feature_ctrl" to configure CATM features.	R02A03_01.004.01.004
NETWORK	Added command AT+QNWCFG="pci_lock" to restrict module registration to a specified cell.	R02A03_01.004.01.004
NETWORK	Added the AT command AT+QNWCFG="hplmnsearch_ctrl" to configure whether the HPLMN searching timer is enabled.	R02A02_01.003.01.003
NETWORK	Added AT command AT+QCFG="bandrestore" to restore module band configuration to its default.	R02A02_01.003.01.003
SIM	Added support AT+QCFG="sim/onchip" command.	R02A02_01.002.01.002

NETWORK	Added support for LTE Antenna RF Tuner function.	R02A02_01. 002.01.002
NETWORK	Added command AT+QCFG="timer",3402 for get T3402 configuration.	R02A03_01. 001.01.001
NETWORK	Added command AT+QNWCFG="cfun_init_mode" to configure the CFUN mode when the module power on.	R02A03_01. 001.01.001

3.2 New Features of Modem APP

Item/Category	Brief description	Since
LwM2M	Added AT+QLWCFG="disable_locate" to control whether GNSS positioning is enabled (LwM2M Object 6).	R02A03_A0. 303.A0.303
TCP/IP	Added AT+QICFG="tcp/accept",<accept> to limit the number of client connections when the module acts as a single TCP server. 1.When the module acts as a single TCP server, it limits the number of connections to the peer client. 2. When the module acts as a multi-channel TCP server and TCP client, it indicates the number of currently open TCP connections. The number of connections to the peer client includes the connections between the TCP client and other TCP servers.	R02A03_A0. 303.A0.303
LwM2M	Added AT+QLWCFG="urc" to control whether LwM2M related URC is reported.	R02A03_A0. 300.A0.300
Security	Added AT+QREDDAVN? to query the version number certified by REDDA.	R02A03_A0. 300.A0.300
Security	Added Secure DFOTA feature to support Radio Equipment Directive Delegated Act of European Union Cybersecurity (Secure Boot, Secure Communication and Secure Debugging were supported in previous firmware versions).	R02A03_A0. 300.A0.300
SIM	Added support for Orange MBN to meet certification requirements.	R02A03_A0. 300.A0.300
GENERAL	Added a limit on the number of file system restores to prevent frequent restore operations in abnormal scenarios from affecting Flash lifespan.	R02A03_A0. 300.A0.300
Security	Added Secure Boot and Secure Debugging.	R02A03_A0. 206.A0.206
SSL	Added new cipher suites and TLS_PSK_WITH_AES_256_CCM_8(0XC0A9) TLS_PSK_WITH_AES_128_GCM_SHA256(0X00A8).	R02A03_A0. 206.A0.206
TCP/IP	Added AT+QICFG="dcdmode" to control whether the DCD is pulled up when the module exits TCP transparent transmission mode.	R02A03_A0. 206.A0.206
CoAP	Added AT+QCOAPCFG="dataformat" to configure the sending data format.	R02A03_01. 204.01.204
CoAP	Added error code -13 to indicate DNS busy error during CoAP connection.	R02A03_01. 204.01.204

CoAP	Added error code -12 to distinguish CoAPs timeout situations.	R02A03_01. 204.01.204
LwM2M	Disabled auto-registration for LwM2M under AT&T network.	R02A03_01. 204.01.204
RF	Added AT+QCFG="rf/tuner_cfg" to set the mapping between RF tuner and RF bands.	R02A03_01. 204.01.204
UART	Added the flow control function when the main serial port was used as the common serial port in the QuecOpen application.	R02A03_01. 204.01.204
UART	Added <code>QT_UART_TX_Transmit_State_Get()</code> to query the transmission status of UART_TX.	R02A03_01. 204.01.204
GENERAL	Added AT+QCFG="urc/ri/level" to configure the default level of RI.	R02A03_01. 204.01.204
GNSS	Added <code><gps_mode></code> in AT+QCFG="timeupdate" to control whether to enable automatic time update via GNSS.	R02A03_01. 201.01.201
LED	Added AT+QCFG="ledmode",4 to configure LED timer.	R02A03_01. 201.01.201
LwM2M	Added AT+QLWCFG="disable_lwm2m" to control whether to enable LwM2M function.	R02A03_01. 201.01.201
QuecOpen®	<code>qapi_QT_FOTA_Download_Start()</code> and <code>qapi_QT_FOTA_DL_Process()</code> supported downloading DFOTA packages via FTP.	R02A03_01. 201.01.201
QuecOpen®	Added <code>qapi_QT_DAM_Crash_Info_Delete()</code> to delete the file storing DAM crash information in DAM unload mode.	R02A03_01. 201.01.201
SMS	Added AT+QSMSCONCAS (only supported sending SMS message in text mode) to send long SMS message at one time, and the maximum number of long SMS message characters input from the serial port was: 153*10 (GSM 7-bit), 134*5 (8 bit), 67*5 (UCS2).	R02A03_01. 201.01.201
TCP/IP	Added AT+QICFG="timestamp",1 to configure timestamp option of TCP.	R02A03_01. 201.01.201
TCP/IP	Added AT+QICFG="ip_filter",<ip4_addr>,<subnetmask> to receive all IP data in the IP segment to which the IP address in the command belongs, and not to receive the data from other IP segments.	R02A03_01. 201.01.201
GENERAL	Added AT+QCCLK to get the current time accurate to milliseconds.	R02A03_01. 201.01.201
CoAP	Added CoAP observe feature.	R02A03_01. 200.01.200
CoAP	Supported CoAP block-wise feature.	R02A03_01. 200.01.200
PSM	Added AT+QCFG="psm_rtc_adjust_ctrl" to control whether to enable autocalibration when the module was in the PSM state.	R02A03_01. 200.01.200
QuecOpen®	Added QAPIs to query the thread object information.	R02A03_01. 200.01.200
QuecOpen®	Added QAPI to control the output of GNSS NMEA sentences.	R02A03_01. 200.01.200

QuecOpen®	Supported to obtain the DAM application crash information.	R02A03_01. 200.01.200
QuecOpen®	Added PMIC watchdog mechanism.	R02A03_01. 200.01.200
GENERAL	The new firmware version cannot be downgraded to previous versions, otherwise the module will not be able to work normally.	R02A03_01. 200.01.200
GENERAL	Added the function of preventing mis-burning for the module.	R02A03_01. 200.01.200
GENERAL	Added qapi_Status_t qapi_QT_Chip_Temp_Read and optimized AT+QTEMP to get the chip internal temperature.	R02A03_01. 008.01.008
FTP	Added the processing logic of FTP state machine for 425 error code.	R02A03_01. 008.01.008
FTM	Added TX command AT+QRFTESTPWR .	R02A03_01. 008.01.008
DFOTA	Added qapi_QT_Check_FOTA_Package to verify the integrality of DFOTA package.	R02A03_01. 008.01.008
TCP	Added AT+QICFG="tcp/inactivetm" to control the TCP inactivity time.	R02A03_01. 008.01.008
TCP	Added AT+QICFG="ipv6prior" to configure whether to preferentially activate IPv6 data call in ipv4v6 dual-mode.	R02A03_01. 007.01.007
NITZ	Added AT+QCFG="timesave"[,<mode>] to control whether to save the timestamp information issued by NITZ.	R02A03_01. 007.01.007
TCP/IP	Added AT+QICFG="asyncmode" to configure whether AT+QIACT activated PDN asynchronously.	R02A03_01. 007.01.007
DFOTA	Supported DAM APP synchronous upgrade.	R02A03_01. 007.01.007
DFOTA	Added AT+QFOTADL=12 to query the space size that can be used to save delta packages.	R02A03_01. 007.01.007
CMUX	Added AT+QCFG="cmux/signal" to detect the data reception through the RI/DCD pin level jitter in PPP over CMUX mode.	R02A03_01. 006.01.006
QuecOpen®	Added new QAPI to support configuring whether module automatically downloads XTRA file.	R02A03_01. 005.01.005
DFOTA	Added support DFOTA download thru FTP(s).	R02A03_01. 005.01.005
USB	Added new command AT+QCFGEXT="usbnet" to support configure module support ECM port or the 2 nd USB AT port.	R02A03_01. 005.01.005
DFOTA	Added new command AT+QCFGEXT="SNI" to support configure SNI function during DFOTA HTTP download progress.	R02A03_01. 005.01.005
MQTT	Added support MQTTSN topic can be wakeup by PSM.	R02A03_01. 005.01.005
SSL	Added support new encryption suites and TLS_PSK_WITH_AES_128_CCM_8(0XC0A8 TLS_PSK_WITH_AES_128_CBC_SHA256(0X00AE).	R02A03_01. 005.01.005
GENERAL	Added support 2Mbps transfer rate on main UART AT port.	R02A03_01.

		005.01.005
GENERAL	Added configuration support for FirstNet-ATT.	R02A03_01. 004.01.004
GNSS	Added AT+QGPSCFG="xtra_autodownload" command to control whether GNSS automatically downloads XTRA files.	R02A03_01. 004.01.004
GNSS	Added AT+QGPSCFG="gpsweek" command.	R02A03_01. 004.01.004
GNSS	Added command AT+QGPSCFG="xtra_urc" to configure whether to report the related URC in the automatic download process of XTRA files.	R02A03_01. 004.01.004
MQTT-SN	Added support MQTT-SN functionality.	R02A03_01. 004.01.004
NITZ	Added command AT+QCFG="timeupdate" to configure whether the local time of the module is automatically updated according to the network time.	R02A03_01. 004.01.004
PSM	Added command AT+QPSMAUXCFG to optimize the configuration of PSM function.	R02A03_01. 004.01.004
QCTEMP	Added AT+QCTEMP command used for high temperature alarm detection.	R02A03_01. 004.01.004
QuecOpen®	Added new QAPI qapi_QT_Tick_To_Time_V2 for converting 64-bit tick values to a specific unit of time.	R02A03_01. 004.01.004
SMS	Added support for handling CMS error code 42/47.	R02A03_01. 004.01.004
SSL	Added command AT+QSSLRECV=<cliendID>,0 to query the length of received read/unread data.	R02A03_01. 004.01.004
SSL	Added AT+QSSLCFG configuration to enable renegotiation function.	R02A03_01. 004.01.004
SSL	Added SNI functionality to SSL for MQTT.	R02A03_01. 004.01.004
SSL	Added command AT+QSSLCRYPT used for AES encryption/decryption and MD5 calculation.	R02A03_01. 004.01.004
DFOTA	Added command AT+QFOTADL="<file_name>,<type>" to support copy DFOTA data package from file system to NAND storage partition.	R02A03_01. 002.01.002
GENERAL	Added command AT+QCFG="dbgctl" to enable or disable QXDM log output or not.	R02A03_01. 002.01.002
GENERAL	Added command AT+QCFGEXT="USBNET" to configure enable/disable ECM function.	R02A03_01. 002.01.002
GENERAL	Added command AT+QCFGEXT="chip_id" to get the chip serial number.	R02A03_01. 002.01.002
GENERAL	Added command AT+QPOWD=2 to support fast power down module.	R02A03_01. 002.01.002
HTTP	Added commands AT+QHHTTPPUT/QHHTTPPUTFILE to support HTTP put function.	R02A03_01. 002.01.002

Jamming Detection	Added support GNSS jamming detection.	R02A03_01.002.01.002
QuecOpen®	Added QAPI to support XTRA operation.	R02A03_01.002.01.002
QuecOpen®	Added QAPI to support access DFOTA storage partition.	R02A03_01.002.01.002
QuecOpen®	Added QAPI to support multiple SPI slaver operation.	R02A03_01.002.01.002
QuecOpen®	Added QAPI to support access DAM_CFG partition.	R02A03_01.002.01.002
QuecOpen®	Added QAPI qapi_QT_Get_SecBoot_Status to get the secure boot function enabled or not.	R02A03_01.002.01.002
QuecOpen®	Added QAPI qapi_Status_t qapi_QT_Chip_Serial_Num_Get to get the chip serial number.	R02A03_01.002.01.002
GENERAL	Added Fast powered down function.	R02A03_01.001.01.001
QuecOpen®	Added QAPI to support SMS list operation.	R02A03_01.001.01.001
GNSS	Added support configure GNSS power on mode as cold/warm/hot start.	R02A02_01.003.01.003
QuecOpen®	Added QAPI for SMS solution.	R02A02_01.002.01.002
QuecOpen®	Added QAPI to support GNSS XTRA related operation.	R02A02_01.002.01.002
GENERAL	Added AT+QCELLSCAN to support get the neighbor cell information.	R02A02_01.002.01.002
MQTT	Added AT+QMTPUBEX to support publish JSON format data.	R02A02_01.002.01.002
QuecOpen®	Added support load QuecOpen application from NAND DAM partition.	R02A02_01.001.01.001
GNSS	Added AT+QGPSCFG="gpsdop" to support get the position accuracy data.	R02A02_01.001.01.001
FTM	Added support GSM FTM RX function.	R02A02_01.001.01.001
QuecOpen®	Added QAPI for DFOTA solution.	R02A02_01.001.01.001

4 Improved Features

4.1 Improved Features of Modem Protocol

Item/Category	Brief description	Since
NETWORK	Fixed a DNS resolution failure that occurred when switching to a correct domain after multiple attempts to resolve invalid domains.	R02A03_A0.303.A0.303
NETWORK	Added a parameter for AT+QNWCFG="plmnrat sort_cfg",2 , which sorts PLMNs first by RAT, then by signal strength.	R02A03_A0.303.A0.303
NETWORK	Added AT+QNWCFG="cops_auto_cfg" , which is disabled by default. When it is enabled (set to 1), after executing AT+COPS=4,2,<plmn> and successfully attaching to the specified PLMN, the COPS mode will revert to "0" instead of remaining at "1".	R02A03_A0.303.A0.303
NETWORK	Supported on-site private networks via Verizon SIM.	R02A03_A0.303.A0.303
NETWORK	Increased the maximum configurable timeout of AT+QCFG="irat/timer" from 300 to 10,000 minutes.	R02A03_A0.301.A0.301
NETWORK	Fixed the problem that the module was disconnected from the network after entering the idle state upon RRC release following successful network registration in a weak-signal scenario.	R02A03_A0.300.A0.300
NETWORK	Optimized the network searching logic of the module in roaming scenarios.	R02A03_A0.300.A0.300
NETWORK	Optimized AT+QCFG="urc/ri/level" .	R02A03_A0.300.A0.300
NETWORK	Added a comma to separate the primary DNS and secondary DNS addresses in the AT+CGDCONTRDP response under IPv6-only mode.	R02A03_A0.300.A0.300
NETWORK	Fixed the problem that the username and password could not be set to null by AT+QICSGP .	R02A03_A0.300.A0.300
NETWORK	Fixed the problem that +CEREG: 3 was not reported when certain attach requests were rejected.	R02A03_A0.300.A0.300
NETWORK	Fixed the problem where AT+QNWCFG="freq_save" did not take effect in certain scenarios.	R02A03_A0.300.A0.300
NETWORK	Fixed the problem that the SINR value queried by AT+QENG="servingcell" was inconsistent with the description in the QuecCell application note released by Quectel.	R02A03_A0.300.A0.300
NETWORK	Supported the adaptive APN authentication.	R02A03_A0.300.A0.300
NETWORK	Fixed the problem where the device failed to update the cell identity correctly in certain scenarios.	R02A03_A0.300.A0.300

NETWORK	Fixed the problem that the module continued to search for GSM network when executing AT+QCOPS=0 , even though it was locked to LTE network.	R02A03_A0.300.A0.300
NETWORK	Fixed the problem that the UE did not send an Authentication Failure response when the network sent an Authentication Request with the separation bit set in AMF.	R02A03_A0.300.A0.300
NETWORK	Incorporated several network-related behavior optimizations to fix some stability problems.	R02A03_A0.300.A0.300
NETWORK	Optimized data interaction stability under NB network.	R02A03_A0.206.A0.206
NETWORK	Optimized the module stability under NB network.	R02A03_A0.206.A0.206
NETWORK	Fixed the problem that MMGSDI created default cache for EF GSM KC GPRS when it was not present on card.	R02A03_A0.206.A0.206
NETWORK	Fixed the problem that CELL ID and TAC were not reported by executing AT+CREG? when AT+CREG=2 .	R02A03_01.204.01.204
NETWORK	Disabled GEA1/GEA2 and enabled GEA3/GEA4 by default under GSM.	R02A03_01.204.01.204
NETWORK	Fixed the test failure on GEA1 certification case.	R02A03_01.201.01.201
NETWORK	Fixed the problem that the CEREG URC was not reported when the module changed from the network registration state to the network disconnection state and then to the network searching state.	R02A03_01.201.01.201
NETWORK	Disabled GEA1 by default.	R02A03_01.201.01.201
NETWORK	Fixed the problem that UE could not restore the attached configuration file to the data PDN after OTA provisioning except for Korean network.	R02A03_01.200.01.200
NETWORK	Optimized <i>qapi_QT_Real_Time_Clock_Set()</i> to fix the problem that the time zone configuration did not take effect.	R02A03_01.200.01.200
NETWORK	Fixed the problem that SFN feature could not be disabled by AT+QSFN=0,0,1 once SFN feature was enabled.	R02A03_01.008.01.008
NETWORK	Fixed the bug that the module cannot be waken up after entering PSM between eDRX.	R02A03_01.007.01.007
NETWORK	Corrected the range of <timeout> in AT+QCELLSCAN .	R02A03_01.006.01.006
NETWORK	Fixed the bug that the UICC SIM card could not be detected after the hot-swap function was enabled.	R02A03_01.006.01.006
NETWORK	Fixed the bug that AT+QENG="neighbourcell" always returning error when profile is deactivated by AT+CGATT=0 .	R02A03_01.005.01.005
NETWORK	Merged Qualcomm CR#2962986 to fix the bug that time cannot be synced with NITZ	R02A03_01.005.01.005
NETWORK	Added support new RF PA drivers.	R02A03_01.005.01.005

NETWORK	Added support handing reject cause#35 as well as #11.	R02A03_01. 005.01.005
NETWORK	Fixed the bug that AT+QCSCON command returned incorrect RRC connection status occasionally.	R02A03_01. 004.01.004
NETWORK	Optimized AT+QCSQ command to support configure whether URC is automatically reported.	R02A03_01. 004.01.004
SIM	Added Qualcomm CR#2890754 to fix the bug that failed to update the SIM profile when TCP connection was established.	R02A03_01. 004.01.004
NETWORK	Optimized RF driver to solve GSM switch spectrum anomaly issue.	R02A03_01. 002.01.002
SMS	Added to support CMS Error code 42/47.	R02A03_01. 002.01.002
NETWORK	Fixed the bug that RRC was released but AT+QENG="SERVINGCELL" returned an incorrect RRC status.	R02A03_01. 001.01.001
NETWORK	Fixed the bug that AT+CGDCONT could mistakenly delete active PDP connections	R02A02_01. 003.01.003
SIM	Fixed the bug that AT+QPINC occasionally returned error.	R02A02_01. 002.01.002
NETWORK	Optimized AT+QCFG="band"/"nwscanmode"/"iotopmode"/"nwscanseq" commands match different project configurations.	R02A02_01. 002.01.002
NETWORK	Fixed the bug that AT+QNWINFO returning incorrect network information.	R02A02_01. 002.01.002
GENERAL	Optimized GSM RF Antenna tuner function.	R02A02_01. 002.01.002
PSM	Fixed the bug that where the module could not access PSM properly after the SIM card was unlocked	R02A02_01. 001.01.001

4.2 Improved Features of Modem APP

Item/Category	Brief description	Since
ATC	Fixed the problem where executing AT+QNWCFG="plmnrat sort_cfg",1 could cause the module to become stuck on the RPLMN network.	R02A03_A0. 303.A0.303
DFOTA	Optimized the execution constraints of certain DFOTA commands to ensure no abnormal interruptions during the DFOTA download process.	R02A03_A0. 303.A0.303
DFOTA	Fixed the problem that the entire DFOTA package was downloaded at once in the special scenario of segmented downloads.	R02A03_A0. 303.A0.303
LwM2M	Integrated optimizations for Verizon LwM2M certification test cases.	R02A03_A0. 303.A0.303

LwM2M	LwM2M is enabled by default on Verizon SIM cards.	R02A03_A0.303.A0.303
QuecOpen®	Optimized the default I/O register state during GPIO interrupt initialization to enhance functional robustness.	R02A03_A0.303.A0.303
QuecOpen®	Added length validation and restrictions for QuecOpen image filenames to enhance overall solution stability.	R02A03_A0.303.A0.303
SIM	Updated the PLMN list for TS25 operator networks.	R02A03_A0.303.A0.303
SIM	Solved the problem that uninitialized variables caused incorrect APN generation during BIP testing.	R02A03_A0.303.A0.303
TCP/IP	Fixed the problem that data could not be sent in certain scenarios.	R02A03_A0.303.A0.303
TCP/IP	Fixed the abnormal problems of the following test scenarios: 1. When the module is used as a TCP server or UDP server, data transmission with the client fails after the TCP server or UDP server is opened and closed 100 times in a row. 2. When the module is used as a UDP client, the open operation fails after the UDP client is opened and closed 100 times in a row.	R02A03_A0.303.A0.303
TCP/IP	Fixed the problem that executing AT+QPING failed during the first boot after the firmware upgrade.	R02A03_A0.303.A0.303
GENERAL	Fixed the problem that dumps were not captured after the module malfunctioned and rebooted during automatic filesystem recovery triggered by filesystem corruption.	R02A03_A0.303.A0.303
GENERAL	Enhanced module stability.	R02A03_A0.303.A0.303
QuecOpen®	Optimized UART transmit interrupt timing to enhance the stability of UART reception and transmission functions.	R02A03_A0.301.A0.301
GENERAL	Fixed the problem that the USB modem port's behavior in reporting virtual RI signals did not meet expectations.	R02A03_A0.301.A0.301
GENERAL	Fixed the problem that the behavior of RI signal transitions did not meet expectations.	R02A03_A0.301.A0.301
DFOTA	Optimized the memory allocation logic for DFOTA download in the memory exhaustion scenario to improve the stability of the DFOTA function.	R02A03_A0.300.A0.300
DFOTA	Optimized the DFOTA download process to enhance the stability of the DFOTA function.	R02A03_A0.300.A0.300
DFOTA	Optimized the URC reporting function during DFOTA upgrade to enhance the robustness of the DFOTA upgrade function.	R02A03_A0.300.A0.300
DFOTA	Optimized the memory footprint of the ATC processing thread to enhance functional robustness.	R02A03_A0.300.A0.300
FTM	Fixed the problem that the <ul_offset> in AT+QRFTEST could be set to a value beyond the range specified in the FTM document released by Quectel.	R02A03_A0.300.A0.300

FTP	Fixed the problem of data download failure in certain FTP scenarios.	R02A03_A0.300.A0.300
GNSS	Optimized XTRA status acquisition and XTRA automatic download functions.	R02A03_A0.300.A0.300
GPIO	Fixed the problem that the default state of the GPIO did not meet expectations after PWM resources were released.	R02A03_A0.300.A0.300
MQTT	Extended AT+QMTCFG="timeout" to modify timer_unit.	R02A03_A0.300.A0.300
PING	Optimized the memory release logic for PING function to enhance its robustness.	R02A03_A0.300.A0.300
PING	Solved the problem of abnormal URC reporting after Ping failure.	R02A03_A0.300.A0.300
QuecOpen®	Fixed the problem of watchdog timeout caused by intermittent UART initialization failure during module startup.	R02A03_A0.300.A0.300
QuecOpen®	Optimized the stability problem when sending and receiving large amounts of data through UART to enhance the overall stability of data transmission and reception.	R02A03_A0.300.A0.300
QuecOpen®	Optimized the parameter saving logic for <i>qapi_QT_URC_Port_Set()</i> .	R02A03_A0.300.A0.300
Security	Enabled the Secure DFOTA function to verify the delta package (diff images) between the source and target firmware before the DFOTA upgrade. The delta package should be correctly signed with the Quectel public key in Quectel signature server.	R02A03_A0.300.A0.300
SIM	Optimized the module's logic for reading the profile of the SIM card to enhance the robustness of modem function.	R02A03_A0.300.A0.300
SMS	Fixed the problem that the SMS center number was not updated after CFUN 0/1 switching.	R02A03_A0.300.A0.300
USB	Optimized the current consumption in USB Suspend mode to enhance the robustness of USB function.	R02A03_A0.300.A0.300
USB	Optimized the stability of the module printing logs via USB.	R02A03_A0.300.A0.300
GENERAL	AT+CGSN supports querying both SN and IMEI.	R02A03_A0.300.A0.300
GENERAL	Optimized the SBL image upgrade process to enhance the stability of SBL image upgrade.	R02A03_A0.300.A0.300
GENERAL	Removed support on AT+QLBS related commands.	R02A03_A0.300.A0.300
CMUX	Optimized the CMUX feature to enhance the stability of CMUX feature when it was frequently turned on or off.	R02A03_A0.206.A0.206
DFOTA	Optimized the return format of AT+QCFGEXT="fota_http_header" to make it consistent with the description in the AT commands manual released by Quectel.	R02A03_A0.206.A0.206
DFOTA	Optimized UART configuration in DFOTA status to address the behavior that the URC could not be reported in the specific status	R02A03_A0.206.A0.206

	during DFOTA upgrade.	
DFOTA	Optimized URC reporting logic when the DFOTA package failed to be downloaded in HTTP mode.	R02A03_A0.206.A0.206
FILE	Added stricter access restrictions to files in the security directory of file system.	R02A03_A0.206.A0.206
FTP	Optimized FTP download compatibility.	R02A03_A0.206.A0.206
GNSS	Optimized GNSS signal parsing algorithm to enhance GNSS positioning stability.	R02A03_A0.206.A0.206
GPIO	Optimized the function multiplexing logic of I2C pin to enhance the stability of GPIO and I2C functions.	R02A03_A0.206.A0.206
HTTP	Fixed the problem that error code 702 was reported probabilistically with HTTP POST.	R02A03_A0.206.A0.206
MQTT	Optimized the stability of MQTT in buffer mode.	R02A03_A0.206.A0.206
QuecOpen®	Optimized the default level state of pin after PWM release.	R02A03_A0.206.A0.206
QuecOpen®	Optimized <i>qapi_QT_NW_Rat_Scan_Pre_Get()</i> to make the default value queried consistent with the actual value.	R02A03_A0.206.A0.206
USB	Optimized the logic of USB port reporting URC so that USB port could report URC normally when the module was powered on.	R02A03_A0.206.A0.206
GENERAL	Optimized the file system restore process to enhance the stability of the backup and restore function.	R02A03_A0.206.A0.206
GENERAL	Optimized the PMIC configuration to enhance the stability of module startup-related functions.	R02A03_A0.206.A0.206
GENERAL	Removed support on AT+QLBS and AT+QIOT related commands.	R02A03_A0.206.A0.206
ATC	Fixed the problem that AT+QCFG="ledmode" did not support setting parameters to 0.	R02A03_01.204.01.204
CMUX	Fixed the problem that the software flow control for CMUX did not take effect and the processing logic of flow control signal was inconsistent with the protocol.	R02A03_01.204.01.204
ECM	Fixed the problem that DNS response construction by DNS proxy server was not copying the DNS hostname properly with ECM mode.	R02A03_01.204.01.204
FTP	Fixed the problem that the module could not work normally during FTPS stress test.	R02A03_01.204.01.204
GNSS	Fixed the problem that XTRA state failed to be read with low probability.	R02A03_01.204.01.204
HTTP	Fixed the probabilistic problem that content length was not reported after the successful execution of AT+QHHTTPGET .	R02A03_01.204.01.204
MQTT	Fixed the probabilistic problem that ERROR was directly reported after AT+QMTPUB was executed again with the same msgid when an error occurred in AT+QMTPUB in the case of QoS being 2.	R02A03_01.204.01.204

PPP	Optimized the module stability in UART+PPP scenario.	R02A03_01. 204.01.204
QuecOpen®	Added mnc_len in qapi_QT_NW_LTE_Meas_Info_t to indicate the length of MNC.	R02A03_01. 204.01.204
QuecOpen®	Added the function of checking input parameters for qapi_QT_MP_AP_Interaction_Reg() to enhance interface security.	R02A03_01. 204.01.204
QuecOpen®	Optimized the time to load the QuecOpen application after the module was powered on.	R02A03_01. 204.01.204
QuecOpen®	Optimized the memory usage of the AT Pipe feature to enhance the robustness of the AT Pipe feature.	R02A03_01. 204.01.204
QuecOpen®	Optimized the logic of qapi_QT_NW_PDP_Cfg_Set() to support setting the APN name to null.	R02A03_01. 204.01.204
SMS	Fixed the problem that the return value of qapi_QT_SMS_Get_Service_Ready_Status() was incorrect before SMS was ready.	R02A03_01. 204.01.204
USB	Fixed the problem that the USB disabled status queried by qapi_QT_USB_Switch_Get() was inconsistent with expectations after disabling USB with qapi_QT_USB_Switch_Set().	R02A03_01. 204.01.204
GENERAL	Synchronized the fix solution of CVE vulnerability.	R02A03_01. 204.01.204
GENERAL	Added the restore point to improve the robustness of file system restore function.	R02A03_01. 204.01.204
GENERAL	Optimized the backup processing logic of file system to enhance the robustness of the file system backup and restore function.	R02A03_01. 204.01.204
CoAP	Fixed the problem that the ETag option in the CoAP protocol was in the string format.	R02A03_01. 201.01.201
DFOTA	Fixed the problem that DFOTA upgrade might fail by uploading DFOTA package data through the main serial port when there were bad blocks in the flash partition used to store DFOTA package data.	R02A03_01. 201.01.201
DFOTA	Optimized the DFOTA differential algorithm to reduce the size of the DFOTA package.	R02A03_01. 201.01.201
DFOTA	Optimized the internal algorithm to reduce the size of the DFOTA package.	R02A03_01. 201.01.201
DFOTA	Optimized DFOTA download logic to be compatible with the HTTP server that did not support the Range field.	R02A03_01. 201.01.201
DFOTA	Fixed the problem that certain DFOTA servers took a long time for downloading with HTTP, and the default delay ack time is 100 ms.	R02A03_01. 201.01.201
DFOTA	Solved the low probabilistic problem of no response when DFOTA download was executed repeatedly.	R02A03_01. 201.01.201
FTP	Fixed the problem of error reporting when AT+QFTPLIST was executed under IPv6 network.	R02A03_01. 201.01.201
FTP	Fixed the problem that the module kept getting stuck after CONNECT was reported by executing AT+QFTPGET.	R02A03_01. 201.01.201

HTTP	Fixed the problem that the module could not work normally after executing AT+QHTTPREAD due to the empty content length when the HTTP server returned the response code 204.	R02A03_01. 201.01.201
LwM2M	Fixed the problem that the module could not work normally after the LwM2M application was awakened by SMS message and received a normal SMS message again.	R02A03_01. 201.01.201
MQTT	Fixed the probabilistic problem that the module could not work normally caused by continuous sending of MQTT data under weak network.	R02A03_01. 201.01.201
MQTT	Fixed the problem that the DISCONNECT packet sent by AT+QMTSNCLOSE had no retransmission mechanism.	R02A03_01. 201.01.201
PSM	Fixed the problem that the module probabilistically delayed entering PSM when the T3324 was set less than 10 s.	R02A03_01. 201.01.201
QuecOpen®	Fixed the probabilistic failure on QuecOpen application to read and write the data in DAM_CFG partition.	R02A03_01. 201.01.201
QuecOpen®	Fixed the problem that the size of the DFOTA package queried by <i>qapi_QT_FOTA_Get_Package_Info()</i> was incorrect.	R02A03_01. 201.01.201
TCP/IP	Fixed the problem of abnormal IP display when the module worked as a TCP server to connect the client more than 20 times accumulatively.	R02A03_01. 201.01.201
TCP/IP	Fixed the problem that "+++" was simultaneously sent when the "+++" was input in USB Modem port to exit from transparent transmission mode.	R02A03_01. 201.01.201
GENERAL	Modified the crash mode in the module initialization stage from sahara mode to reset mode.	R02A03_01. 201.01.201
SIM	Optimized SIM initialization judgment logic when EPSNSC file of SIM card was abnormal.	R02A03_01. 201.01.201
DFOTA	Fixed the problem that there was no corresponding processing method when some HTTP servers returned the response code 206 in the DFOTA download process.	R02A03_01. 200.01.200
FILE	Fixed the problem of inconsistent size of the data written by AT+QFWRITE .	R02A03_01. 200.01.200
GNSS	Solved the problem that the time of the Age of differential data field in the GNS sentence was incorrect.	R02A03_01. 200.01.200
HTTP	Solved the problem that the module would switch to transparent transmission mode unexpectedly after executing AT+QHTTPPUTFILE and accessing the HTTP(s) server if the request header customization was enabled.	R02A03_01. 200.01.200
HTTP	Fixed the problem that the module disconnected HTTP connection early when the data packets sent by the HTTP server contained HTTP header information without content-length.	R02A03_01. 200.01.200
MQTT	AT+QMTCFG supported configuring the parameters in JSON format.	R02A03_01. 200.01.200

MQTT	Fixed the problem that the module was abnormally rebooted once the server was disconnected when the MQTT client continually sent data to the server with 4096 bytes in the weak NB-IoT network.	R02A03_01. 200.01.200
MQTT	Fixed the problem that the data sent by the server was not reported due to MQTT packet splicing.	R02A03_01. 200.01.200
MQTT	Optimized the logic of MQTT disconnection when MQTT Client sent MQTT DISCONNECT package, and currently the specified URC was reported according to the server's behavior.	R02A03_01. 200.01.200
MQTT	Fixed the problem that the connection state returned by executing AT+QMTCONN? was still connected after the connection request by executing AT+QMTCONN was rejected.	R02A03_01. 200.01.200
POWER	Solved the problem that there was an abnormal level of 0.5 V on STAU pin in the booting process.	R02A03_01. 200.01.200
POWER	Solved the problem that sometimes the URC of POWERED DOWN was not reported when the module was powered down with AT+QPOWD=1 .	R02A03_01. 200.01.200
POWER	Solved the probabilistic problem of high power consumption after the module exited sleep mode from QSCLK.	R02A03_01. 200.01.200
QuecOpen®	Optimized the UART receiving mechanism to solve the probabilistic problem of incomplete received data.	R02A03_01. 200.01.200
TCP/UDP	Fixed the problem that NO CARRIER was reported before the data was completely spit out because the close event was triggered when the data was spit out in TCP transparent transmission mode.	R02A03_01. 200.01.200
UART	Fixed the problem that the module would work abnormally when the UART Debug Port frequently reported URC.	R02A03_01. 200.01.200
USB	Fixed the bug of module memory exhaustion caused by URC data cached in the USB buffer because the URC was frequently reported by the module when the USB was not connected.	R02A03_01. 200.01.200
GENERAL	Fixed the bug that the RPM did not work normally caused by long wake-up time of modem.	R02A03_01. 200.01.200
GENERAL	Fixed the problem that the USB NMEA port could not output NMEA sentences after GNSS was turned on when the USB was configured to Modem or ECM mode through AT+QCFGEXT="usbnet" .	R02A03_01. 200.01.200
GENERAL	Fixed the limitation that "\ "" could not be separately input in the AT command.	R02A03_01. 200.01.200
GENERAL	Optimized the backup and restore.	R02A03_01. 200.01.200
SSL	Supported the translation of IPv4-embedded IPv6 addresses for SSL session under KT network.	R02A03_01. 008.01.008
FTP	Supported SSL check host feature to prevent the certificate validity check failure on SSL client using multi-domain certificate.	R02A03_01. 008.01.008
DNS	Fixed the bug that URC was not reported for TCP service when network was disconnected during DNS resolution.	R02A03_01. 008.01.008

LwM2M	Fixed the bug that the module did not work normally in the process of LwM2M repeatedly triggering factory reset.	R02A03_01.008.01.008
TCP/IP	Fixed the bug that URC was not reported for data service when AT+QIDEACT was executed to disconnect the network during DNS resolution.	R02A03_01.008.01.008
DNS	Fixed the bug that the module did not work normally caused by Service Reject in the process of DNS resolution.	R02A03_01.008.01.008
SSL	Updated the version of Modem SSL lib to mbedtls 2.28.0.	R02A03_01.008.01.008
FTP	Fixed the problem that FTP client failed to login to some servers that only required usernames.	R02A03_01.008.01.008
LwM2M	Fixed the problem that URC report was incorrect when the LwM2M server sent data to the module through /19/1/0.	R02A03_01.008.01.008
CoAP	Fixed the problem of memory leaks caused by repeatedly opening and closing the CoAP connection in the process of CoAP stress test.	R02A03_01.008.01.008
TCP	Supported the URC +QIURC: "closed" reporting when the server actively disconnected the TCP connection if there was data in the TCP receive buffer under buffer access mode.	R02A03_01.007.01.007
TCP/IP	Fixed the bug of no URC report if the failure occurred caused by the network exception when TCPIP application protocol performed DNS parsing.	R02A03_01.007.01.007
GNSS	Fixed the probabilistic bug that after executing AT+QGPSCFG="autogps",1 , the first packet of NMEA sentences was garbled after booting.	R02A03_01.007.01.007
FILE	Supported the access control of HTTP/FTP client to other directories except UFS.	R02A03_01.007.01.007
ECM	Fixed the bug that data could not be routed and forwarded when ECM was connected under roaming network.	R02A03_01.006.01.006
FTP	Fixed the FTP request failure caused by spaces in FTP commands QUIT, STOU, ABOR and SYST.	R02A03_01.006.01.006
FTP	Fixed the data connection failure caused by FTP client using an incorrect port.	R02A03_01.006.01.006
GNSS	Fixed the probabilistic bug that GNSS UART failed to output GNSS NMEA sentences.	R02A03_01.006.01.006
FOTA	Fixed the bug that the imported CA certificate and client certificate could not be deleted in some scenarios of the DFOTA over HTTPS application.	R02A03_01.006.01.006
CoAP	Fixed the bug that the \n contained in the downlink data was automatically converted to \r\n.	R02A03_01.006.01.006
CoAP	Supported CoAP over IPv6.	R02A03_01.006.01.006
TCP	Fixed the memory leak caused by entering the illegal characters when executing AT+QISENDEX .	R02A03_01.006.01.006

SSL	Fixed the bug that under SSL multiplexing, if any connection was closed, other connections would be abnormal.	R02A03_01.006.01.006
QuecOpen®	Fixed the bug that error code 506 was reported when downloading a DFOTA package over HTTP, which caused by a large amount of data was in a single packet.	R02A03_01.006.01.006
QuecOpen®	Fixed the bug that an error occurred when <i>qapi_QT_Get_File_Hash()</i> conducted MD5 calculation on the file containing null characters.	R02A03_01.006.01.006
DTLS	Fixed the bug that connection cannot be disconnected when issue AT+QSSLCLOSE	R02A03_01.005.01.005
DFOTA	Added support user-defined HTTP headers of DFOTA HTTP download	R02A03_01.005.01.005
CoAP	Fixed the bug that in CoAP over TLS session where TLS context was not properly released.	R02A03_01.005.01.005
GENERAL	Merged Qualcomm CR#2968381 to fix the bug that CCLK time not correct after module back from OOS status.	R02A03_01.005.01.005
GENERAL	Optimized that module USB DM port can be loaded automatically if the module enters into crash DUMP mode	R02A03_01.005.01.005
QuecOpen®	Merged Qualcomm CR#2974502 to fix the bug that incorrect time display after 49.7 days of continuous operation of the device.	R02A03_01.005.01.005
QuecOpen®	Fixed the bug that <i>qapi_time_get</i> returning incorrect time after module restart.	R02A03_01.005.01.005
DFOTA	Fixed the bug that error 506 would be reported when AT+QFOTADL=1 and the DFOTA package size is 2048 integer multiples +4 bytes.	R02A03_01.005.01.005
QuecOpen®	Fixed the bug that AP_READY cannot be controlled correctly in QuecOpen application.	R02A03_01.005.01.005
CoAP	Fixed the bug that CRC validation failure for COAP downloaded FOTA file.	R02A03_01.004.01.004
DFOTA	Optimized AT+QFOTADL command to download the server files to the Apps file system.	R02A03_01.004.01.004
DFOTA	Optimized command AT+QFOTADL to support breakpoint download and resume function.	R02A03_01.004.01.004
DNS	Merge the CR#2895096 to fix the bug that modem crash issue during test DNS query in DT lab.	R02A03_01.004.01.004
DTLS	Fixed the bug that no URC was reported during the configured timeout when DTLS couldn't connect.	R02A03_01.004.01.004
FOTA	Optimized the FOTA upgrade strategy to solve the potential bug of insufficient memory causing the data stream cannot be properly parsed.	R02A03_01.004.01.004
FOTA	Optimized FOTA upgrade strategy to solve the problem that FOTA download fails due to the failure of DNS resolution in the scenario where AP-side data services already exist.	R02A03_01.004.01.004
FTM	Optimized LTE FTM TX sending logic to fix the bug that TX power of some LTE bands did not conform to the expected setting.	R02A03_01.004.01.004

GNSS	Fixed the bug that with AT+QGPSLOC=2 configuration, the module couldn't display some special latitude/longitude information correctly.	R02A03_01.004.01.004
GNSS	Fixed the bug that AT+QGPSXTRATIME command returned incorrect time, missing the leap seconds.	R02A03_01.004.01.004
GNSS	Fixed the bug that COG was not calculated correctly.	R02A03_01.004.01.004
GPIO	Optimized the number of GPIO interrupt support to 5.	R02A03_01.004.01.004
HTTP	Fixed the bug that after sending POST request when HTTP body data type is configured to 3 (multipart/form-data), AT+QHTTTPREAD always returns 705 error code.	R02A03_01.004.01.004
HTTP	Adjusted the maximum length of HTTP URL from 700 to 3000 bytes.	R02A03_01.004.01.004
Jamming Detection	Fixed the bug that related URC might be lost after removing the interference source in GSM network.	R02A03_01.004.01.004
MQTT	Fixed the bug in AT+QMTPUBEX command that if there are multiple pairs of curly braces in payload, data transmission will fail.	R02A03_01.004.01.004
NITZ	Added Qualcomm CR#2918361 to fix the bug that AT+CCLK probability returned an incorrect time after the module recovered from a network outage.	R02A03_01.004.01.004
PSM	Fixed the bug that when the module entered PSM but there is no PSM POWER DOWN URC reported.	R02A03_01.004.01.004
QuecOpen®	Optimized that customer must invoke the QAPI QAPI_QT_MAIN_UART_ENABLE_SET firstly if want to configure the main AT port as a general UART port in a QuecOpen Application.	R02A03_01.004.01.004
QuecOpen®	Fixed the bug that source file cannot be deleted probabilistically after QuecOpen application was updated.	R02A03_01.004.01.004
QuecOpen®	Fixed the bug that TCP long connection consumption is high under QuecOpen.	R02A03_01.004.01.004
SSL	Fixed the bug that when SSL certificate file size exceeds 32K bytes would lead to connection establishment failure.	R02A03_01.004.01.004
GNSS	Optimized GNSS by using the AT+QGPSLOC command to configure whether location information is output in URC.	R02A02_01.003.01.003
GNSS	Disabled GTP function by default.	R02A02_01.003.01.003
QuecOpen®	Fixed the bug that ADC cannot be closed completely by QAPI.	R02A02_01.003.01.003
TCP/IP	Optimized AT+QICFG="recvind" used to configure to enable/disable the length of output data in URC information.	R02A02_01.003.01.003
GENERAL	Fixed the bug that AT+CPSMS?/AT+QPSMEXTCFG?/AT+QPSMCFG? returned the result which don't match the description in the guidance document.	R02A02_01.003.01.003
GENERAL	Optimized that change the USB descriptor as Quectel.	R02A02_01.003.01.003

GENERAL	Fixed the bug that AT+CTZU command probability returned an incorrect time.	R02A02_01.003.01.003
GENERAL	Optimized AT command AT+QCELLSCAN to add timeout protect mechanism.	R02A02_01.003.01.003
CoAP	Added Qualcomm CR#2829284 to fix “CoAP Crash during send failure due to double free of CoAP packet” issue.	R02A03_01.002.01.002
CMUX	Fixed the bug that upload file failure via CMUX port 3 or 4.	R02A03_01.002.01.002
DFOTA	Fixed the bug that failed to download DFOTA package from some HTTP servers that do not support HTTP head method.	R02A03_01.002.01.002
GENERAL	Fixed the bug that several pins’ power level cannot hold default configuration during downloading progress.	R02A03_01.002.01.002
GENERAL	Fixed the bug the firmware upgrade failure via QFLASH firehose mode.	R02A03_01.002.01.002
GENERAL	Fixed the bug that part of the data was truncated and lost when sending data with “\0” characters in transparent mode after enabling AUX AT port (via AT+QDIAGPORT).	R02A03_01.002.01.002
GENERAL	Fixed the bug that USB failed to load successfully on the Raspberry Pi evaluation board.	R02A03_01.002.01.002
GENERAL	Fixed the bug that GPIO_07 changed abnormally when module starting up.	R02A03_01.002.01.002
GENERAL	Fixed the bug that power level of debugging UART pins were always out of control during the firmware download progress.	R02A03_01.002.01.002
GNSS	Fixed the bug that AT+QGPSGNMEA="GSV" returned error occasionally if configure AT+QGPSCFG="autogps",1 .	R02A03_01.002.01.002
GNSS	Fixed the bug that leap second time injection error causes GNSS location failure.	R02A03_01.002.01.002
GNSS	Added QCOM CR2748699 to fix GNSS load failure issue.	R02A03_01.002.01.002
MQTT	Fixed the bug that encountered concatenated package in MQTT downlink data.	R02A03_01.002.01.002
MQTT	Fixed the bug that module would fail to connect to a normal server after connecting to a closed server several times in a row.	R02A03_01.002.01.002
MQTT	Fixed the bug abnormal power consumption encountered after close the MQTT connection.	R02A03_01.002.01.002
QuecOpen®	Fixed the bug that QuecOpen SSL QAPI cannot work normally after enable secure boot function.	R02A03_01.002.01.002
QuecOpen®	Optimized module only “*.mbn” format QuecOpen application can be loaded if secure boot enabled.	R02A03_01.002.01.002
QuecOpen®	Fixed the bug that encountered memory leak while frequent opening/closing of UART serial port.	R02A03_01.002.01.002
QuecOpen®	Optimized internal object pool to 140K Bytes.	R02A03_01.002.01.002

TCP/IP	Fixed the bug that TCP handshake failure if the "shift.cnt" of the "TCP Window Scale Option" in TCP SYNC frame is 14.	R02A03_01.002.01.002
GENERAL	Fixed the bug that when the voltage is lower than 3.2V, the voltage percentage queried by the AT+CBC command is always 100%.	R02A02_01.002.01.002
NIDD	Fixed the bug that module occasionally crashed when using AT+QCFGEXT="nipdr" to receive hexadecimal data.	R02A02_01.002.01.002
GENERAL	Optimized that unexpected abnormal power consumption during idle mode.	R02A02_01.002.01.002
FTP	Fixed the bug that module returned error when using AT+QFTPGET to get files with file names longer than 254 characters.	R02A02_01.002.01.002
LwM2M	Fixed the bug that abnormal operation on GPIO26 after enabling LwM2M function.	R02A02_01.001.01.001
FTM	Fixed the bug that module cannot switch from GSM TX FTM to LTE TX FTM.	R02A02_01.001.01.001
GENERAL	Removed the unexpected URC output while module entering into PSM.	R02A02_01.001.01.001
TCP/IP	Fixed the bug that AT+QAUGDCNT returned incorrect result.	R02A02_01.001.01.001
TCP/IP	Fixed the bug that AT+QIDNSGIP returned incorrect IP address under IPV6 supported network.	R02A02_01.001.01.001
GENERAL	Fixed the bug that "APP RDY" loss issue.	R02A03_01.001.01.001
GNSS	Fixed the bug that module stopped positioning early during GNSS positioning.	R02A03_01.001.01.001
GNSS	Fixed the bug that the GNSS NMEA sentence had only 5 decimal places but should have been 6 decimal places.	R02A03_01.001.01.001
QuecOpen®	Fixed the bug that QAPI of ATC Pipe send out data was incomplete when it encountered '\0'.	R02A03_01.001.01.001
LwM2M	Optimized LwM2M AT commands.	R02A03_01.001.01.001
SSL	Fixed the bug that data loss during SSL retransmission.	R02A03_01.001.01.001
CoAP	Fixed the bug that module crashed occasionally with send CON type data.	R02A03_01.001.01.001
PING	Fixed the bug that URC results were not returned for a period of time after AT+QPING was executed continuously.	R02A03_01.001.01.001

5 Known Issues

NA.

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6 Functions

Basic Function

SMS	Voice Call	Data Call	Fax	USSD	PHB	STK	CMUX	Dual UART
Y	N	Y	N	N	N	N	Y	N
FILE	Triple UART							
Y	N							

Protocol Function

TCP/UDP	PPP	FTP	HTTP	NITZ	PING	HTTPS	TCP SSL	FTPS
Y	Y	Y	Y	Y	Y	Y	Y	Y
MQTT	LwM2M							
Y	Y							

Special Function

GNSS	DFOTA	PSM	Quec Open®	Jamming Detection	Security ¹⁾	eSIM ²⁾
Y	Y	Y	Y	Y	Y	Y

NOTE

1. Y means the firmware supports this function.
2. N means the firmware does not support this function.
3. ¹⁾ Supports Secure Boot and Secure Debugging and Secure DFOTA.
4. ²⁾ BG95M5LAR02A02_01.001.01.001 supports SGP.02.