# BC92-RB Release Notes

**NB-IoT Module Series**

Rev. BC92-RB_Firmware_Release_Notes_V0120_01.001.01.001

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# 1. Preamble

This document provides the Release Notes for BC92 firmware version **BC92RBR01A20_01.001.01.001**. It describes major changes compared to BC92 firmware version **BC92RBR01A20**.

# 2. Matters Needing Attention

| SN | Brief Description |
|---|---|
| [1] | Application should re-configure user settings which will be restored to default value (except for baudrate) after DFOTA upgrading. |
| [2] | The new firmware version cannot be downgraded to versions released before BC92RBR01A20, otherwise the module will not be able to work normally. |

# 3. New Features

| Item /Category | Brief Description | Since |
|---|---|---|
| **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. | BC92RBR01A20 |
| **GENERAL** | The new firmware version cannot be downgraded to previous versions, otherwise the module will not be able to work normally. | BC92RBR01A20 |
| **GENERAL** | Added **AT+QUESTAT** to query UE status and report URC actively when the specific PLMN was disabled. | BC92RBR01A20 |
| **GENERAL** | Added **AT+CGSN=3** to query the SVN of the module. | BC92RBR01A20 |
| **GENERAL** | Added **AT+QTEMP** command to query the real-time working temperature of the chip. | BC92RBR01A07 |
| **GENERAL** | Added **AT+CGSN=2** command to query the IMEISV information of module. | BC92RBR01A07 |
| **COAP** | Added feature of COAP and COAPS. | BC92RBR01A07 |
| **NETWORK** | Added **AT+QEMMESM** command to query the EMM/ESM cause code when module is rejected by MME. | BC92RBR01A07 |
| **HTTP** | Added feature of HTTP and HTTPS. | BC92RBR01A07 |
| **GENERAL** | Added **AT+CSODCP** command to support RRC connection release with RAI flag contained in signalling layer. | BC92RBR01A06 |

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|---|---|---|
| **GENERAL** | Added IPv6 DNS resolution support for **AT+QPING** command. | BC92RBR01A06 |
| **GENERAL** | Added **AT+QNBPOWERCLASS** command for TX power level configuration in NB-IoT mode. | BC92RBR01A06 |
| **MQTT** | Extended **AT+QMTPUB** command to support data transmitting with JSON format. | BC92RBR01A06 |
| **MQTTS** | Added feature of MQTTS. | BC92RBR01A06 |
| **NETWORK** | Added **AT+CGCLASS** command for configure the CS/PS domain registration mode. | BC92RBR01A06 |
| **TLS/DTLS** | Added feature of DTLS/TLS. | BC92RBR01A06 |
| **TCP/UDP** | Extended **AT+QISEND** command to query TCP acked and non-acked bytes in total. | BC92RBR01A06 |
| **TCP/UDP** | Extended **AT+QISEND/AT+QISENDEX** commands to support RAI configuration in UDP mode. | BC92RBR01A06 |
| **FTP** | Support FTP function. | BC92RBR01A05 |
| **QuecLocator2.0** | Support QuecLocator2.0 function (Only applicable in GSM mode). | BC92RBR01A05 |
| **TCP/UDP** | Support TCP transparent function. | BC92RBR01A05 |
| **TCP/UDP** | Added IPv6 domain support for **AT+QIOPEN** command. | BC92RBR01A05 |
| **TCP/UDP** | Added IPv6 domain support for **AT+QIDNSGIP** command. | BC92RBR01A05 |
| **TCP/UDP** | Added <incoming_num> option for **AT+QIOPEN** command to limit the maximum number of incoming clients, default is 1. | BC92RBR01A05 |
| **TCP/UDP** | Added IPv4v6 auto-adaptor support for **AT+QIOPEN** command. | BC92RBR01A05 |
| **NETWORK** | Added **AT+QCCED** command for querying serving and neighbor cell information in GSM mode. | BC92RBR01A05 |
| **OTHERS** | Added **AT+QCCLK** command to query module time in UTC + timezone format. | BC92RBR01A05 |
| **OTHERS** | **AT+QICSGP** adds IPv6 single stack configuration. | BC92RBR01A03 |
| **OTHERS** | Support APN authentication. | BC92RBR01A03 |
| **TCP/UDP** | Added IPv6 based DNS server configuration for **AT+QIDNSCFG** command. | BC92RBR01A04 |
| **DFOTA** | Added IPv6 support for **AT+QFOTADL** command. | BC92RBR01A04 |
| **MQTT** | Added IPv6 support for **AT+QMTOPEN** command. | BC92RBR01A04 |

# 4. Improved Features

| Item/Category | Brief Description | Since |
|---|---|---|
| **NETWORK** | Solved the problem that the context ID of **AT+QICSGP** could not be configured to 1. | BC92RBR01A20 _01.001.01.001 |
| **GENERAL** | Optimized the DNS processing mechanism of the dual stack SIM card to give priority to parsing with IPv4 address. | BC92RBR01A20 |
| **GENERAL** | Fixed the bug that extra "OK" prompts when executing FTP GET operation in breakpoint method. | BC92RBR01A07 |
| **GENERAL** | Fixed the bug that no "CONNECT" prompts when executing **AT+QFTPLIST** command to query the file information after failed FTP GET operation occurs in RAM mode. | BC92RBR01A07 |
| **GENERAL** | Optimized the FTP downlaoding speed in NB-IoT mode | BC92RBR01A07 |
| **NETWORK** | Fixed the bug that the returned SMS content disaordered when read by **AT+CMGR** command. | BC92RBR01A07 |
| **NTP** | Fixed the bug that the wrong URC result is returned when using **AT+QNTP** command to synchronization network time in dedicated time peroid(00:00:00-08:00:00). | BC92RBR01A07 |
| **TLS/DTLS** | Fixed the bug that the module failed to connect to Azure using MQTTS without authentication. | BC92RBR01A07 |
| **FILE** | Removed the "/ufs/" field of returned file storage path when using **AT+QFOPEN** command which is not in accordance with the description of FILE application note. | BC92RBR01A06 |
| **GENERAL** | Fixed the bug that the RTC time which can be queried by **AT+CCLK** command is not updated when EMM INFORMATION signaling is received in TAU procedure. | BC92RBR01A06 |
| **NETWORK** | Fixed the bug that the extended periodic timer is excluded in attach request signaling when PSM mode is disabled via **AT+CPSMS=0** command. | BC92RBR01A06 |
| **NETWORK** | Fixed the bug that the extended T3412 timer configured to 320H multiple increments is not take effect via **AT+CPSMS** command. | BC92RBR01A06 |
| **NETWORK** | Fixed the bug that module will low probability return wrong signal query result via **AT+QENG=0** command in RRC connected state. | BC92RBR01A06 |
| **NETWORK** | Fixed the bug that the query RSRP value is not stable via **AT+QENG=0** command in poor network coverage condition. | BC92RBR01A06 |
| **NETWORK** | Fixed the bug that module will not search NB-IoT network after location updating is rejected in GSM priority mode. | BC92RBR01A06 |
| **NETWORK** | Fixed the bug that the module will establish RRC connection automatically when waken up from deep sleep mode in IPv6 scenario. | BC92RBR01A06 |

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| **QuecLocator** | Fixed the bug that **AT+QBLSB** command will result in failure when the QuecLocator server sends Latitude and longitude information with non-accurate position params. | BC92RBR01A06 |
| **TCPUDP** | Fixed the bug that when the module acts as TCP server and after the firstly connected client disconnects or quits from the transparent mode, there is no "CONNECT" event reported any more with the subsequent client connecting with transparent mode. | BC92RBR01A06 |
| **TCPUDP** | Fixed the bug that module will probability fail to establish an TCP session after reboot due to same local port is used internally. | BC92RBR01A06 |
| **TCPUDP** | Fixed the bug that module fails to send data when wake up from deep sleep mode in UDP(IPv6) mode. | BC92RBR01A06 |
| **TCPUDP** | Fixed the bug that in IPv6 scenario, when module wakes up from deep sleep in UDP mode, module will automatically initiate RRC setup to retrieve IPv6 prefix address, while in IPv4 scenario, there is no such mechanism. | BC92RBR01A06 |
| **TCP/UDP** | Fixed the bug that when the module is acted as a server and configured to transparent mode, it is recommended that the client should delay more than 200ms after accessing the module before data interaction. Because there is a delay of about 200ms from the module receiving the client access to the transparent mode, within the 200ms, the data received from the client will be reported as URC and data is cached, then output the data after module enters the transparent mode. | BC92RBR01A06 |
| **TCP/UDP** | Fixed the bug that the DNS query result (**AT+QIDNSCFG?**) is not correct after DNS configuration by using **AT+QIDNSCFG** setting command. | BC92RBR01A05 |
| **TCP/UDP** | Fixed the bug that incomplete data is received when package size is larger than 2048 bytes in UDP mode. | BC92RBR01A05 |
| **TCP/UDP** | Fixed the bug that ERROR is reported when mass downlink data (> 2K) is received in UDP mode. | BC92RBR01A05 |
| **TCP/UDP** | Fixed the bug that the <local_port> and <remote_port> query result by ContextID using **AT+QISTATE** is not inconsistent with setting value in TCP client mode. | BC92RBR01A05 |
| **TCP/UDP** | Fixed the bug that data buffer is not cleared when session is closed while data buffer is not empty in buffer mode. | BC92RBR01A05 |
| **TCP/UDP** | Changed the maximum reading data length by **AT+QIRD** from 512 bytes to 1024 bytes. | BC92RBR01A05 |
| **TCP/UDP** | Fix the bug that the module can’t receive the downlink data from the server after sending UDP data to the server under IPv6 protocol scenario. | BC92RBR01A05 |
| **TCP/UDP** | Fix the bug that IPv6 DNS address is not properly worked in IPv4v6 and IPv6 network with **AT+QIDNSCFG** command. | BC92RBR01A05 |

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| **TCP/UDP** | Optimized **AT+QIOPEN** command, an error is returned directly when a TCP server is set up by using a non-local IP. | BC92RBR01A05 |
| **TCP/UDP** | Fixed the bug that previously created UDP session is not working when module wakes up from deep sleep mode in IPv6 scenario. | BC92RBR01A05 |
| **TCP/UDP** | Fixed the bug that ERROR is reported when the data content contains the character "\" in text format by using **AT+QISEND** command. | BC92RBR01A05 |
| **MQTT** | Fixed the bug that RI mechanism is not applicable to MQTT related URCs. | BC92RBR01A05 |
| **MQTT** | Fixed the bug that the downlink data is truncated when hex 0x00 is contained in the data content. | BC92RBR01A05 |
| **OTHERS** | Fixed the bug that module will crash when <apn>/<username> /<password> length exceeds 50 bytes by using **AT+QICSGP** command, currently limit the maximum length is 50 bytes for these parameters. | BC92RBR01A05 |
| **OTHERS** | Fixed the bug that SIM ICCID query result by **AT+QCCID** remains contain ICCID value after SIM card is dropped. | BC92RBR01A05 |
| **NETWORK** | Optimized the network searching scheme to find the best cell to camp on. | BC92RBR01A05 |
| **NETWORK** | Fixed the bug that the query result is inconsistent between **AT+CGPADDR** and **AT+CGPADDR=1**. | BC92RBR01A05 |
| **NETWORK** | Optimized the IPv6 address query result of **AT+CGPADDR** and **AT+CGDCONT** command, which is displayed only when the complete IPv6 address is obtained. | BC92RBR01A05 |
| **NETWORK** | Optimized the CEREG auto reporting mechanism and will display the searching phase (**+CEREG: 2**). | BC92RBR01A05 |
| **NETWORK** | Fixed the bug that consecutive executing **AT+COPS=2** command will block AT port for a long period of time. | BC92RBR01A05 |
| **NETWORK** | Fixed the bug that wrong query result is returned of **AT+COPS? /AT+CEREG?** after SIM card is dropped and network is deactivated. | BC92RBR01A05 |
| **NETWORK** | Fixed the bug that in GSM priority mode after the module registered to the NB-IoT network, and the module finds the GSM network again, query the network status via **AT+COPS?,** the display shows wrong information **+COPS: 0, 2, "0000".** | BC92RBR01A05 |
| **NETWORK** | Fixed the bug that dual-mode is auto-off when a GSM-Only SIM card is used and in GSM priority mode. | BC92RBR01A05 |
| **NETWORK** | Optimized **AT+CEREG** command to query the registration network status only under the NB-IoT network; **AT+CGREG** and **AT+CREG** command to query the registration network status only under the GSM network. | BC92RBR01A05 |

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| **NETWORK** | Fixed the bug that **AT+CSQ** command query result is always 0 when dedicated SIM card is inserted which only supports PS domain, not support CS domain. | BC92RBR01A04 |
| **NETWORK** | Fixed the bug that PDP context is abnormal deactivated when reselection timed out under GSM network. | BC92RBR01A04 |
| **OTHERS** | Fixed the bug that module automatically reports STNN URC when some special SIM card is inserted. | BC92RBR01A04 |
| **OTHERS** | Optimized the measurement accuracy of the supplier voltage in light sleep mode via **AT+CBC** command. | BC92RBR01A04 |
| **OTHERS** | Fixed the bug that "command no response" string result code is returned when AT command execution is timeout, now changed to "ERROR" in string format and 50 in numeric format. | BC92RBR01A04 |
| **TCP/UDP** | Fixed the bug that the TCP listen socket was abnormal closed when **AT+QICLOSE** command was executed while reporting **+QIURC: "closed"** URC which is caused by RST from server. | BC92RBR01A04 |
| **TCP/UDP** | Maximum sending length of TCP data increased to 1440 bytes. | BC92RBR01A03 |
| **TCP/UDP** | Fix the hex 00 to 20 problem in buffer mode. | BC92RBR01A03 |
| **OTHERS** | Format optimization of IPv6 display. | BC92RBR01A03 |

# 5. Known Issues

| Item/Category | Brief Description |
|---|---|
| **NETWORK** | When module is in roaming state, background searching for high priority PLMNs will be triggered, after the background searching is completed, the normal RRC flow will be affected and ultimately results in uplink/downlink business failure. |

# 6. Functions

| Basic Function | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FILE | | | | | | | | |
| Y | | | | | | | | |
| **Protocol Function** | | | | | | | | |
| TCP/ UDP | NITZ | PING | NTP | MQTT | FTP | MQTTS | TLS/DTLS | COAP |
| Y | Y | Y | Y | Y | Y | Y | Y | Y |
| COAPS | HTTP | HTTPS | | | | | | |
| Y | Y | Y | | | | | | |
| **Special Function** | | | | | | | | |
| DFOTA | PSM | Quec Locator 2.0 | | | | | | |
| Y | Y | Y | | | | | | |

**NOTE**

1. Y means the firmware supports this function.
2. N means the firmware does not support this function.
3. QuecLocator2.0 is an efficient location technology developed by Quectel. While it's not free, you need pay for it if you would like to use it.
4. Supports RAM/UFS FILE only.