

# BC68 Release Notes

## LPWA Module Series

Rev. BC68\_Firmware\_Release\_Notes\_V0110

Date: 2019-07-02



## 1. Preamble

This document provides the Release Notes for BC68 firmware version **BC68JAR01A10**. It describes major changes compared to BC68 firmware version **BC68JAR01A09**. For a detailed listing of all changes, refer to the BC68 AT Command Set.

## 2. New Features

Item /Category	Brief Description	Since
<b>NETWORK</b>	Added the function of In-Band, Guard-band and Stand-alone.	R01A01
<b>NETWORK</b>	Added the function of control plane data.	R01A01
<b>NETWORK</b>	Added the function of paging.	R01A01
<b>DFOTA</b>	Added differential Firmware Upgrade Over-The-Air (DFOTA).	R01A01
<b>NETWORK</b>	Added the function of Cell Reselection.	R01A01
<b>NETWORK</b>	Added the function of Single-tone 3.75KHZ.	R01A01
<b>NETWORK</b>	Added the function of Single-tone 15KHZ.	R01A01
<b>NETWORK</b>	Added the function of Multi-tone.	R01A01
<b>C-DRX</b>	Added the function of C-DRX.	R01A01
<b>NONIP</b>	Added the function of Non-IP.	R01A01
<b>SMS</b>	Added the function of SMS.	R01A01
<b>PSM</b>	Added the function of PSM.	R01A01
<b>eDRX</b>	Added the function of eDRX .	R01A01
<b>GENERAL</b>	Added the function of NETLIGHT, the function is closed by default. Using <b>AT+QLEDMODE=1</b> can open the function.	R01A02
<b>UART</b>	Supported baud rate 230400/460800.	R01A03
<b>TCP</b>	Added the function of TCP data transmission.	R01A03
<b>GENERAL</b>	Added the function of indication to user when UL data send out in air interface.	R01A03
<b>GENERAL</b>	Added the function of BIP.	R01A03
<b>NETWORK</b>	Added the function of background PLMN Search.	R01A03

<b>GENERAL</b>	Added the function of data transmission over IPv6.	R01A03
<b>DTLS</b>	Added the function of updating DTLS PSK by remote.	R01A03
<b>DFOTA</b>	Added the function of updating KV by FOTA.	R01A03
<b>CoAP</b>	Added AT commands which are also supported by BC95 ( <b>AT+NMGS/NMGR/NNMI/NSMI/NQMGR/NQMGS/NMSTATUS</b> ).	R01A03
<b>GENERAL</b>	Added the function of show SSB version in response of <b>AT+CGMR</b> .	R01A03
<b>GENERAL</b>	Added <b>AT+CGAUTH</b> command to set APN with user name and password.	R01A05
<b>GENERAL</b>	Added <b>AT+NCSEARFCN</b> command to clear the stored EARFCN.	R01A05
<b>NETWORK</b>	Added <b>AT+CGCONTRDP</b> command to get DNS sever address.	R01A05
<b>NETWORK</b>	Added <b>AT+NIPINFO</b> command to report IP address information.	R01A05
<b>GENERAL</b>	Added <b>AT+NQPODCP</b> command to query the pending originating data list via the control plane.	R01A05
<b>NETWORK</b>	Added <b>AT+NCPCDPR</b> command to configure PDP context dynamic parameter items to read.	R01A05
<b>NETWORK</b>	Added <b>AT+CNMPSD</b> command to indicate that no application on the MT is expected to exchange data.	R01A05
<b>TCP</b>	Added <b>+NSOCLI</b> URC to notify that socket has been closed.	R01A05
<b>GENERAL</b>	Added configure options of <b>AT+NCONFIG</b> command.	R01A05
<b>NETWORK</b>	Added Rel-14 Release Assistant Indication.	R01A05
<b>NETWORK</b>	Supported Rel-13 Multi-PRB.	R01A05
<b>NETWORK</b>	Supported Rel-14 Power Class 14dBm.	R01A05
<b>NETWORK</b>	Supported to send and receive data on Multi-PDN.	R01A05
<b>NETWORK</b>	Provided an interface to handle the timeout of getting IPv6 prefix during attach process, the timer for waiting IPv6 prefix can be set by <b>+NCONFIG:IPV6_GET_PREFIX_TIME</b> .	R01A05
<b>DTLS</b>	Added <b>AT+QRESETDTLS</b> command to set whether the DTLS connection needs to reestablished by the terminal.	R01A05
<b>DTLS</b>	Added <b>AT+QDTLSSTAT</b> command to query DTLS status.	R01A05
<b>GENERAL</b>	Added <b>AT+QDNS</b> command to trigger the DNS domain name resolution.	R01A05
<b>TCP/UDP</b>	Added <b>AT+NSONMI</b> command to set the format of unsolicited message to notify that data has been received on a socket.	R01A07
<b>MQTT</b>	Added AT commands to implement basic MQTT functionality ( <b>AT+QMTCFG/QMTENAUTH/QMTOPEN/QMTCLOSE/QMTCON</b>	R01A07

	N/QMTDISC/QMTSUB/QMTUNS/QMTPUB).	
GENERAL	Added <b>AT+QCHIPINFO</b> command to get chip temperature and voltage of module.	R01A07
CoAP	Added AT commands to implement basic CoAP functionality ( <b>AT+QCOAPCREATE/QCOAPDEL/QCOAPOPTION/QCOAPHEAD/QCOAPADDRESS/QCOAPSEND/QCOAPDATASTATUS/QCOAPCFG</b> ).	R01A08
GENERAL	Added <b>AT+CPIN</b> command to support enter PIN.	R01A08
GENERAL	Added <b>AT+CPINR</b> command to read of the number of remaining PIN.	R01A08
GENERAL	Added a configure option of <b>AT+NCONFIG</b> command for PCO setting. The firmware attach with ePCO by default.	R01A08
NITZ	Added <b>AT+NITZ</b> command to set time update mode.	R01A08
DFOTA	Supported that upgrade package is downloaded using block size of 1024 bytes, which is compatible with the previous block size of 512 bytes.	R01A08
DFOTA	Added <b>AT+QCRITICALDATA</b> command to terminate FOTA upgrades when urgent alarm data needs to be sent.	R01A08
LwM2M	Supported that resources 4/0/0, 4/0/1, 4/0/4, and 4/0/11 are readable.	R01A08
LwM2M	Added <b>AT+QCFG="LWM2M/Lifetime"</b> command to configure lifetime functionality of LwM2M.	R01A08
GENERAL	Added <b>AT+QIDNSCFG</b> command to configure the DNS server address.	R01A08
MQTT	Added new feature for <b>AT+QMTPUB</b> command to support sending specific length data.	R01A09
CoAP	Added new feature for <b>AT+COAPSEND</b> command to support sending specific length data and hex string format data.	R01A09
GENERAL	Added new feature for <b>AT+QDNS</b> command to obtain the DNS domain name resolution result directly from the network when the mode is equal to 2 for DNS domain name resolution.	R01A10
LwM2M	Added <b>AT+QCFG="LWM2M/EndpointName"</b> command to configure the Endpoint Name of LwM2M.	R01A10
LwM2M	Supported instance 19/1 for LwM2M.	R01A10
CoAP	Added new feature for <b>AT+QCOAPOPTION</b> command to support setting the custom option.	R01A10

### 3. Improved Features

Item /Category	Brief Description	Since
CoAP	Modified the indication for receiving downlink CoAP data, in order to be compatible with the AT command of BC95( <b>+NNMI</b> :<length>,<data>).	R01A03
GENERAL	Optimized the function of NETLIGHT.	R01A03
GENERAL	Optimized the response of the <b>AT+NBAND</b> command.	R01A03
GENERAL	Optimized RF performance.	R01A04
GENERAL	Optimized cell search process under inter frequency network.	R01A05
LwM2M	Changed LwM2M send and receive data to use the socket interface. LwM2M initialization will occupy a socket number.	R01A05
DTLS	Modified <b>AT+QSECSWT</b> command to delete old parameter <renegotiationtime> and add <NAT type>.	R01A05
GENERAL	Added error code: 528(configuration conflicts), 529(FOTA is updating), 530(Not the AT command allocated socket).	R01A05
CoAP	Updated parameters of <b>AT+NMGS</b> and <b>AT+NSMI</b> commands.	R01A05
LwM2M	Added RELEASE_AFTER_REPLY RAI flag for using <b>AT+QLWULDATAEX</b> to send Non-confirmable(NON) messages.	R01A07
SMS	Modified the format of the result returned by the <b>AT+CMGC</b> and <b>AT+CMGS</b> commands.	R01A07
GENERAL	Optimized the power consumption when the UE in IDLE of <b>DRX/eDRX</b> .	R01A07
NITZ	Fixed a problem where the read time is not accurate when the local time zone did not exist.	R01A07
TCP	Optimized the response of URC when UE establish TCP connection with remote server, UE can't notice the connection has been closed when the server close the connection initiative.	R01A07
GENERAL	Modified the result of the <b>AT+NCPCDPR=?</b> command.	R01A07
PSM	Optimized the wakeup time from PSM after 1-2 days.	R01A07
GENERAL	Removed SNR limitation of 20dB reported in the log.	R01A07
GENERAL	Supported to pull down the RI pin when reboot happened.	R01A08
GENERAL	Fixed the problem of HPLMN background search failure caused by entering PSM Mode.	R01A08
GENERAL	Supported to query band currently being used with <b>AT+NUESTATS</b> command.	R01A08

<b>GENERAL</b>	Optimized the cell reselection performance in inter-frequency network environment.	R01A08
<b>PSM</b>	Fixed the problem that setting the PSM related parameters does not take effect when radio is off.	R01A08
<b>GENERAL</b>	Fixed the problem that module cannot enter deep sleep when the USIM card is removed.	R01A08
<b>GENERAL</b>	Fixed the problem that module may always search an invalid PLMN even the PLMN has been rejected.	R01A08
<b>GENERAL</b>	Fixed the ERROR 523 problem caused by UART RX pin being pulled down before the first AT command was sent.	R01A08
<b>GENERAL</b>	Optimized the RPLMN file writing mechanism of USIM card to reduce the time of module attachment network.	R01A08
<b>eDRX</b>	Modified the default mode of eDRX to enable.	R01A08
<b>PING</b>	Fixed the problem that <b>AT+NPING</b> command can't ping long IPV6 address.	R01A08
<b>LwM2M</b>	Fixed the bug that module output messages with repeat message ID when IoT platform send CON message to module under poor network environment.	R01A08
<b>GENERAL</b>	Supported to show the APN received from NW with <b>AT+CGCONTRDP</b> command.	R01A08
<b>NITZ</b>	Supported to set time and date with <b>AT+CCLK</b> command.	R01A08
<b>MQTT</b>	Modified the output mode of <b>AT+QMTENAUTH</b> command execute result to URC mode.	R01A09
<b>MQTT</b>	Fixed the bug that the data output was abnormal when special characters were received.	R01A09
<b>MQTT</b>	Supported to show the MQTT related commands in response of <b>AT+CLAC</b> command.	R01A09
<b>CoAP</b>	Optimized data process mechanism for frequent CoAP communication.	R01A09
<b>MQTT</b>	Optimized the format of response of <b>AT+QMTPUB</b> test command.	R01A09
<b>CoAP</b>	Fixed the bug that when sending data in ">" mode, command echo function does not work normally.	R01A09
<b>SMS</b>	Supported SMS when MME does not include additional update result IEI in periodic tracking area updating procedure.	R01A10
<b>NETWORK</b>	Fixed the problem that when the back-off timer is near expiry, sending <b>AT+CFUN=0</b> or <b>AT+NRB</b> command, the back-off remaining timer will be set to max value probably.	R01A10

## 4. Functions

### Basic Function

SMS

Y

### Protocol Function

NITZ	PING	CoAP <sup>3)</sup>	NONIP	TCP/UDP <sup>1)</sup>	MQTT <sup>2)</sup>	LwM2M
Y	Y	Y	Y	Y	Y	Y

### Special Function

DFOTA	PSM
Y	Y

### NOTES

1. Y means the firmware supports this function.
2. N means the firmware does not support this function.
3. <sup>1)</sup> TCP function supports from R01A03.
4. <sup>2)</sup> MQTT function supports from R01A07.
5. <sup>3)</sup> Supports new feature of Quectel basic CoAP function from R01A08.