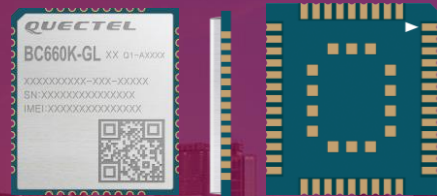


Quectel BC660K-GL

Compact NB-IoT Module with
Ultra-low Power Consumption



BC660K-GL-AA

Release Notes

NB-IoT Module Series

Version: BC660K-GL-AA_Firmware_Release_Notes_V0105_

01.201.01.201

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1. Release Content

This document provides the Release Notes for BC660K-GL-AA. The current release includes the following firmware package.

Package	Version
Firmware	BC660KGLAAR01A05_01.201.01.201

2. Matters Needing Attention

SN	Item
[1]	Multiple PDN contexts are not recommended to use for some known issues. The default PDN context (CID 0) can be used for normal data service.
[2]	Application is recommended to disable sleep mode via AT+QSCLK=0 command after reboot or deep sleep wakeup, and execute AT+QSCLK=1 command to enable sleep mode while data service has been completed.
[3]	Application should re-configure user settings after DFOTA or QFLASH downloading.
[4]	The User Plane mode is not recommended to use for some known issues.
[5]	Application is recommended to execute the AT+QCFG="OOScheme" command to select the desired OOS Scheme. Module will not actively search network when entered into OOS in default mode (mode 4).
[6]	Power saving mode of the SIM card is enabled by default. Disabling power saving mode of the SIM card will lead to higher power consumption.
[7]	Removed the features of LwM2M and CoAP.

3. Release History

3.1. Firmware Release History

Firmware Version	Description
BC660KGLAAR01A05_01.201.01.201	Mass Production
BC660KGLAAR01A05_01.200.01.200	Mass Production
BC660KGLAAR01A02_01.001.01.001	Engineering Sample Version
BC660KGLAAR01A03_01.001.01.001	Commercial Sample Version
BC660KGLAAR01A03_01.002.01.002	Mass Production Version
BC660KGLAAR01A04_01.001.01.001	Mass Production (II) Version
BC660KGLAAR01A04_01.002.01.002	Mass Production (III) Version
BC660KGLAAR01A05_01.001.01.001	Mass Production (IV) Version
BC660KGLAAR01A05_01.002.01.002	Mass Production (V) Version

3.2. New Features

BC660KGLAAR01A05_01.201.01.201	
Item	Brief Description
/	/
BC660KGLAAR01A05_01.200.01.200	
Item	Brief Description
GRFC	Supported GRFC.
TCP	Added the configuration of viewmode in TCPIP.
GENERAL	Added the following AT commands: <ul style="list-style-type: none"> ● AT+QUESTAT to query UE status and report URC actively when the specific PLMN was disabled.

- **AT+QCFG="simpsm"** to control the PSM of SIM card.

GENERAL Supported GTP.

GENERAL Supported Time Sync.

BC660KGLAAR01A05_01.002.01.002

Item Brief Description

NETWORK Prohibited the configuration of APN password and authentication mode if APN username was not set.

TCP Supported **AT+QISEND** sending 1024 bytes HEX string.

UDP Set the maximum length of UDP URC in HEX to 1024 bytes.

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.

BC660KGLAAR01A05_01.001.01.001

Item Brief Description

COAP/COAPS Added feature of CoAP and CoAPS.

LwM2M Added configurable support for OMA object-instance-resource (3/0/0,3/0/1,3/0/2,3/0/3,3/0/16,3/0/18,3/0/19) for **AT+QLWCFG="CR"** command.

LwM2M Added automatic registration configuration option for **AT+QLWCFG="auto_reg"** command.

LwM2M Added registration persistence across reboots configuration option for **AT+QLWCFG="per_regstatus_feat"** command.

LwM2M Added CON type data response timeout value and maximum number of retransmissions configuration option for **AT+QLWCFG="retransmit"** command.

MQTT Added SHA-384 hash algorithm as required by the Azure platform.

NETWORK Modified the maximum length of the <username> and <password> parameters supported by **AT+QCGDEFCONT** command from 19 bytes to 81 bytes.

NETWORK Added **AT+QCFG="activeTimer"** command to control whether to use the value of the active timer.

NETWORK Extended reset mode for **AT+CFUN=1,1** command to reset module.

NETWORK Modified the maximum length of the <username> and <password> parameters supported by **AT+CGAUTH** command from 19 bytes to 81 bytes.

TCP/UDP Added buffer mode for TCP and UDP.

DFOTA Added feature of UART DFOTA.

HTTP/HTTPS Added feature of HTTP and HTTPS.

BC660KGLAAR01A04_01.002.01.002

Item	Brief Description
NETWORK	Extended mode 4 (default mode) for AT+QCFG="OOScheme" command to control the module will not actively search for network when entering OOS with low power consumption consideration. Execute AT+QPLMNS command can trigger the module to continue the network searching process in OOS state.
GENERAL	Added AT+QRELLOCK command to release the sleep lock of AT layer immediately. The default sleep lock time of AT layer is 10s.
LwM2M	Added feature of LwM2M.

BC660KGLAAR01A04_01.001.01.001

Item	Brief Description
NETWORK	Added AT+QOOSAIND command to disable or enable OOSA URC indication.
NETWORK	Added AT+QPSC command to configure power saving control parameters.
NETWORK	Added AT+CIPCA command to configure initial PDP context activation behavior.
NETWORK	Added AT+CSODCP command to send originating data via control plane.
NETWORK	Added AT+CRTDCP command to report terminating data via control plane.
NETWORK	Added AT+CGAUTH command to configure authentication parameters for PDP context.
NETWORK	Added AT+QCFG="SimBip" command to disable or enable the BIP function.
NETWORK	Added AT+QENG=2 command to display the total working duration of Radio Tx/Rx.
TLS/DTLS	Added feature of TLS and DTLS.
MQTTS	Added feature of MQTTS.

BC660KGLAAR01A03_01.002.01.002

Item	Brief Description
GENERAL	Remove Band 14 support compared to CS version.
GENERAL	Added AT+QLEDMODE command to support feature of NETLIGHT.
GENERAL	Added AT+QIPERF command which can be used for throughput testing.
NETWORK	Added AT+QCFG="NcellMeas" command to disable or enable the neighbor cell measurement.
NETWORK	Added AT+QPSMS command to set and query T3324/T3412 timer value in seconds.

TCP Added feature of TCP LISTENER.

MQTT Added feature of MQTT.

BC660KGLAAR01A03_01.001.01.001

Item Brief Description

NETWORK Added **AT+QNBIOTRAI** command to release the RRC connection quickly which will switch the modem status from connected to idle mode.

NETWORK Added **AT+QR14FEATURE** command to query current status of R14 which is supported by network side.

NETWORK Added FPLMN information display in **AT+QENG=3** command.

GENERAL Added **AT+QCFG="GPIO"** command to control and query the state of dedicated GPIO pins.

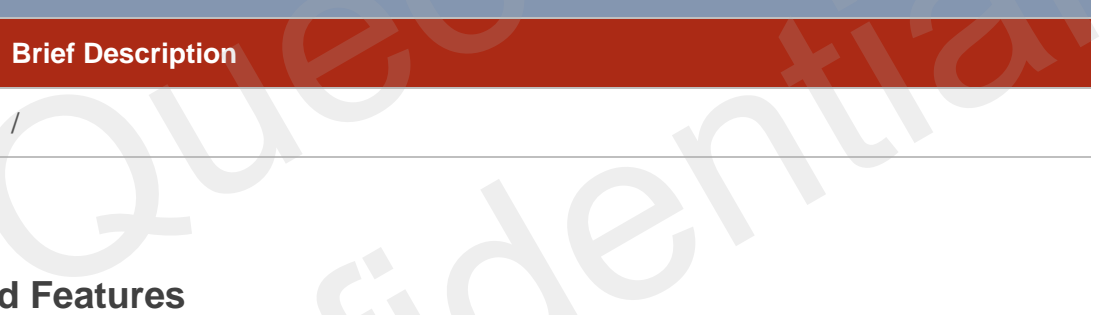
GENERAL Added **AT+QADC** command to sampling the voltage of dedicated ADC pin.

UDP Added feature of UDP SERVICE.

BC660KGLAAR01A02_01.001.01.001

Item Brief Description

/



3.3. Improved Features

BC660KGLAAR01A05_01.201.01.201

Item Brief Description

MQTTS Extended the maximum buffer length limit sent and received over MQTT(S).

BC660KGLAAR01A05_01.200.01.200

Item Brief Description

NETWORK Fixed the bug that the module will receive MT ping when device is in sleep state.

BC660KGLAAR01A05_01.002.01.002

Item Brief Description

COAP Fixed the bug that +QCOAP URC could not display the data in HEX.

GENERAL Fixed the low-probability bug that the module was restarted in the specific scenario.

BC660KGLAAR01A05_01.001.01.001

Item	Brief Description
LwM2M	Fixed the bug that module could not be successfully registered to the lwm2m server in the IPv6 network.
LwM2M	Fixed the bug that the firmware state(5/0/3) resource was not reset when the lwm2m server wrote an empty string to the packet URI(5/0/1) resource.
LwM2M	Fixed the bug that the module could not be registered to lwm2m server in the roaming network state
LwM2M	Fixed the bug that module using the DTLS resumption mode when bootstrap process is enabled.
NETWORK	Fixed the bug that module takes long time to camp on in the roaming network.
NETWORK	Fixed the bug that the NSLPI parameter of AT+CGDCONT command does not take effect.
NETWORK	Fixed the bug that the AT+QSIMSLEEP and AT+CSIM command could not be executed when the SIM card file was lost.
GENERAL	Modified the default setting of STK function from enabled to disabled to prevent module could not enter deep sleep mode after PSM with STK enable SIM due to no polling off event is sent.
GENERAL	Fixed the bug that the power consumption of module is abnormal after using ADC function.
DFOTA	Fixed the bug module could not be successfully download delta packet when connect the IPv6 DFOTA server in the IPv6 network.

BC660KGLAAR01A04_01.002.01.002

Item	Brief Description
TCP/UDP	Modified the parameter <contextID> value range supported by AT+QISTATE command from 0-11 to 0-10.
TCP/UDP	Fixed the bug that UDP uplink still reports "SEND OK" result when DNS resolution has been failed already after the module wakes up from deep sleep mode.
MQTT	Fixed the bug that the module failed to connect to the Azure IoT platform by using the unauthenticated encryption mode.
NETWORK	Fixed the bug that the values of T3324 and T3412 can still be queried after attach procedure is rejected by network when the CEREG mode is configured as 4 or 5.
NETWORK	Modified the parameter <cid> value range supported by AT+CGPADDR command from 0-11 to 0-10.
GENERAL	Optimized DFOTA update agent (add MD5 check) to match the change of DIFF-TOOL.

BC660KGLAAR01A04_01.001.01.001

Item	Brief Description
GENERAL	Fixed the bug that module will low probability unable to enter deep sleep state after modem has entered PSM state.
GENERAL	Fixed the bug that module reboots continuously when using some operator SIMs, such as KT(Korea) and starHUB(Singapore).
NETWORK	Fixed the bug that module will low probability reboot after entering idle mode when board EARFCN of BAND 4 is locked and registered.
NETWORK	Fixed the bug that an extra space exists within the returned response of <state> parameter by AT+QPLMNS? command
UDP	Fixed the bug that the previously closed UDP service context still can be quired after the module wakes up from deep sleep state.
MQTT	Modified the <msg_len> range supported by AT+QMTPUB in hex mode from 0-1460B to 0-730B.

BC660KGLAAR01A03_01.002.01.002

Item	Brief Description
NETWORK	Modify the <cid> range supported by AT+CGDCONT from 0-11 to 0-10.
TCP/UDP	Optimize the DNS priority handling for some typical scenario. (AT+QIDNSCFG/network contributed/deep sleep wakeup).

BC660KGLAAR01A03_01.001.01.001

Item	Brief Description
GENERAL	Optimized the wakeup event process which is triggered by PSM_EINT, after module is waked up by PSM_EINT from deep sleep mode, sleep lock timer is started and the duration is according to the configuration of AT+QCFG="slplocktimes" command.
GENERAL	Optimized the accuracy of URC RI hopping mechanism.
NETWORK	Fixed the bug that the IP address is still kept when the module has entered the OOS state.
TCP/UDP	Fixed the bug that the inputted data is still sent after the data mode has been exited with ESC character.
TCP/UDP	Fixed the bug that the DNS configuration via AT+QIDNSCFG command is lost after the module wakes up from deep sleep.
TCP/UDP	Fixed the bug that the returned IPv6 DNS address is misplacement when executing AT+QIDNSCFG=0 command in IPv6 only scenario.

BC660KGLAAR01A02_01.001.01.001

Item	Brief Description
/	/

3.4. Known Issues

Item	Bug Description
[1]	Due to memory resource limitations, HTTPS two-way authentication is currently not supported.

NOTE

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

For Windows,

USB Driver: CDM21228_Setup.zip

QFlash Tool: QFlash_V5.7_EN

QLOG Tool: EPAT_V1.3.96.159

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4. Functions List

Category	Item	Supported Version(Since)	Note
Basic Function	/	/	/
	TCP/UDP	BC660KGLAAR01A02_01.001.01.001	BC660KGLAAR01A03_01.001.01.001 added feature of UDP SERVICE; BC660KGLAAR01A03_01.002.01.002 added feature of TCP LISTENER. BC660KGLAAR01A05_01.001.01.001 added buffer mode for TCP and UDP.
	NITZ	BC660KGLAAR01A02_01.001.01.001	/
Protocol Function	PING	BC660KGLAAR01A02_01.001.01.001	/
	NTP	BC660KGLAAR01A02_01.001.01.001	/
	MQTT	BC660KGLAAR01A03_01.002.01.002	/
	MQTTS	BC660KGLAAR01A04_01.001.01.001	/
	SSL/TLS	BC660KGLAAR01A04_01.001.01.001	/
	HTTP/HTTPS	BC660KGLAAR01A05_01.001.01.001	HTTPS two-way authentication is currently not supported.
	DFOTA	BC660KGLAAR01A02_01.001.01.001	BC660KGLAAR01A05_01.001.01.001 added feature of UART DFOTA.
Special Function	PSM	BC660KGLAAR01A02_01.001.01.001	/
	GRFC	BC660KGLAAR01A05_01.002.01.002	/

About Quectel

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