

BG96 Release Notes

LPWA Module Series

Rev. BG96_Firmware_Release_Notes_V0210.01.013.01.013

Date: 2019-06-11



1. Preamble

This document provides the Release Notes for BG96 firmware version **BG96MAR02A10M1G_01.013.01.013**. It describes major changes compared to BG96 firmware version **BG96MAR02A07M1G_01.011.01.011**. For a detailed listing of all changes, please refer to the BG96 AT Command Set.

Previous firmware:

ATI

Quectel

BG96

Revision: BG96MAR02A07M1G

Upgraded firmware:

ATI

Quectel

BG96

Revision: BG96MAR02A10M1G

AT+QGMR

BG96MAR02A10M1G_01.013.01.013 //Added new AT to query the full version information.

AT+QAPPVER

+QAPPVER: 01.013.01.013 //Added new AT to query the application version information.

2. New Features

2.1 New Features of Modem Protocol

No update.

2.2 New Features of Modem APP

Item/Category	Brief Description	Since
GENERAL	Added AT+QGMR to query the full version information, including the protocol version number and application version number of modem.	R02A07_01.0 07.01.007
GENERAL	Added AT+QCFG="airplanecontrol" to enable/disable airplane mode.	R02A07_01.0 07.01.007

GENERAL	Added AT+QCFG="gpio" for configuration of some GPIOs.	R02A07_01.0 07.01.007
LwM2M	Added AT+QLWM2M="psk" to enable automatic generation of PSK data.	R02A07_01.0 07.01.007
GENERAL	Added USB suspend function.	R02A07_01.0 07.01.007
GENERAL	Added AT+QICFG="recvind" to control whether to append the received data length in the URC.	R02A07_01.0 08.01.008
GENERAL	Added AT+QCFG="simeffect" .	R02A07_01.0 08.01.008
GENERAL	Added AT+CSIM .	R02A07_01.0 08.01.008
GENERAL	Added AT+QAPPVER .	R02A07_01.0 08.01.008
GENERAL	Added AT+QCFGEXT="fota_apn" to set APN for FOTA thread.	R02A07_01.0 09.01.009
GENERAL	Fix the bug that wrong order of power down URCs reporting when module power off.	R02A07_01.0 09.01.009
CMUX	Fixed the bug that CMUX works abnormally when set the CMUX frame size over 127.	R02A07_01.0 09.01.009
GENERAL	Added AT Command AT+QCFGEXT="disusb" to enable/disable USB port function.	R02A07_01. 009.01. 009
GENERAL	Added URC " APP RDY " for prompt ATFWD command ready.	R02A07_01.0 09.01.009
SSL	Added AT+QSSLCFG="sni" to support SNI feature.	R02A07_01.0 09.01.009
NETWORK	Added support for IPv6.	R02A07_01.0 10.01.010
Quecopen	Added QAPI to disable the power-off function of the PWRKEY.	R02A07_01.0 10.01.010
FILE	Added AT command to access AP file system.	R02A07_01.0 10.01.010
Quecopen	Added QAPI to get random number that generated by hardware.	R02A07_01.0 10.01.010
LwM2M	Added AT+QLWM2M="carrier_cfg" to access carrier_cfg configuration file.	R02A07_01.0 10.01.010
LwM2M	Added AT+QLWM2M="lwm2m_cfg" to access lwm2m_cfg configuration file.	R02A07_01.0 10.01.010
TCP/IP	Supported keep-alive function.	R02A10_01.0 13.01.013
FILE	Added security file folder function.	R02A10_01.0 13.01.013
NETWORK	Added AT+QICFG="ipv6prior" to select IPv4 or IPv6 as default	R02A10_01.0

	PDN type.	13.01.013
NETWORK	Added AT+QCFG="bip/auth" to configure the authentication type during BIP process.	R02A10_01.0 13.01.013
SSL	Added AT+QSSLCFG="checkhost" to configure the host name validation.	R02A10_01.0 13.01.013

3. Optimized Features

3.1 Optimized Features of Modem Protocol

No update.

3.2 Optimized Features of Modem APP

Item/Category	Brief Description	Since
MQTT	Optimized AT+QMTPUB to enable specifying the load length.	R02A07_01.00 7.01.007
GENERAL	Fixed the bug that DTR pin has no internal pull up when module powers on.	R02A07_01.00 7.01.007
GENERAL	Fixed the bug that DCD pin cannot be controlled by AT&C command.	R02A07_01.00 7.01.007
MQTT	Fixed the bug that data transmission fails sometimes when sending data with a long time interval.	R02A07_01.00 7.01.007
GENERAL	Optimized the file system performance.	R02A07_01.00 7.01.007
GENERAL	Optimized AT+QCFGEXT="nipdr" to support display the returned data in hexadecimal format.	R02A07_01.00 8.01.008
GENERAL	Optimized AT+QLWM2M commands.	R02A07_01.00 8.01.008
GENERAL	Fixed the bug that incorrect format when execute AT+QPSMCFG=?/AT+QPSMEXTCFG=? .	R02A07_01.00 8.01.008
TCP/IP	Fixed the bug that TCP handshake failed when set TCP window scale option with 14.	R02A07_01.00 8.01.008
LwM2M	Fixed the bug that reporting firmware version number includes compiling timestamp when client connects to server.	R02A07_01.00 9.01.009
LwM2M	Fixed the bug that reporting Error#506 when module starts FOTA progress.	R02A07_01.00 9.01.009
LwM2M	Added URCs for prompt DFOTA package download start and completely of In-Band.	R02A07_01.00 9.01.009

LwM2M	Fixed the bug that in case of server has an invalid/mismatch DFOTA package, LwM2M client cannot perform the firmware package download when execute motive case#11.01 repeatedly.	R02A07_01.00 9.01.009
FILE	Fixed the bug that cannot use "+++" exit from data mode when downloading file over 1MB from module.	R02A07_01.00 9.01.009
GENERAL	Fixed the bug that incorrect response returned when execute AT+QENG="servingcell" .	R02A07_01.00 9.01.009
GENERAL	Fixed the bug that AT+CFUN=1,1 cannot be executed after set module enter into FTM mode.	R02A07_01.00 7.01.007
CMUX	Fixed the bug that CMUX works abnormally when set the CMUX frame size over 127.	R02A07_01.00 9.01.009
GENERAL	Optimized AT+QFOTADL to support the URL longer than 100 characters, up to 1000 characters.	R02A07_01.01 0.01.010
SSL	Fixed the bug that get partial data but always returning all data when execute AT+QSSLRECV .	R02A07_01.01 0.01.010
GNSS	Optimized AT+QGPSCFG to support configure the baud rate of the UART NMEA port.	R02A07_01.01 0.01.010
SMS	Fixed the bug that unexpected URC "+CMTI: -1" reported when module received WAP push type message.	R02A07_01.01 0.01.010
FTP	Optimized hostname processing mechanism.	R02A07_01.01 0.01.010
Quecopen	Fixed the bug that IIC working abnormal in Quecopen solution.	R02A07_01.01 0.01.010
FILE	Fixed the bug that file system abnormal if delete the file which still in downloading.	R02A07_01.01 0.01.010
FTM	Fixed the bug that AT+QRXFTM returns an abnormal query value.	R02A07_01.01 0.01.010
LwM2M	Fixed the bug that AT+QLWM2M="device_object" cannot configure correctly occasionally.	R02A07_01.01 0.01.010
NETWORK	Fixed the bug that when change module to another RAT, "No service" returned by AT+QNWINFO occasionally.	R02A07_01.01 0.01.010
SMS	Fixed the bug that "+CMS ERROR code 500" reported when execute AT+CMGS .	R02A07_01.01 0.01.010
NETWORK	Fixed the bug that module reports incorrect CEREG status with service domain configure with CS & PS.	R02A07_01.01 1.01.011
MQTT	Fixed the bug that module received a large amount of data in GSM mode and could not output to the serial port occasionally.	R02A07_01.01 1.01.011
GNSS	Fixed the bug that module cannot output NMEA data to USB NMEA port occasionally.	R02A07_01.01 1.01.011
GNSS	Fixed the bug that incorrect location status after GNSS lost its location.	R02A07_01.01 1.01.011
FTM	Fixed the bug that incorrect result returned of QRXFTM when module is tested under Band 13.	R02A07_01.01 1.01.011

TCP/IP	Optimized IPv6 support.	R02A07_01.01 1.01.011
GENERAL	Fixed the bug that module blocked after execute AT+CGACT=1,1 under Cat-M1 network.	R02A07_01.01 1.01.011
PING	Fixed the bug that remove network after executing the AT+QPING , there is no URC reported.	R02A07_01.01 1.01.011
NETWORK	Fixed the bug that module cannot register to network after manually deactivating MBN.	R02A07_01.01 1.01.011
DFOTA	Optimized the HTTP FOTA download scheme to support parse username and password in the URL.	R02A10_01.01 3.01.013
GENERAL	Fixed the bug that there is always error returns when querying IMSI number immediately after RDY is reported.	R02A10_01.01 3.01.013
GENERAL	Fixed the bug that data is easily lost when being output via UART port quickly.	R02A10_01.01 3.01.013
FILE	Fixed the bug that there is error returns occasionally when using AT+QFDEL to delete file.	R02A10_01.01 3.01.013
MQTT	Fixed the bug that the MQTT data output is missing when MQTT downstream contains '\0' characters.	R02A10_01.01 3.01.013
GENERAL	Optimized high temperature performance.	R02A10_01.01 3.01.013
SSL	Optimized SSL function.	R02A10_01.01 3.01.013
GNSS	Fixed the bug that QGPSLOC still could get NMEA sentences after GNSS lost fix.	R02A10_01.01 3.01.013

4. Functions

Basic Function

SMS	Voice Call	Data Call	Fax	USSD	PHB	STK	CMUX	Dual UART
Y	N	N	N	Y	N	N	Y	N
FILE ¹⁾	Triple UART							
Y	N							

Protocol Function

TCP/UDP	PPP	FTP	HTTP	NITZ	PING	HTTPS	TCP SSL	FTPS ²⁾
Y	Y	Y	Y	Y	Y	Y	Y	Y
MQTT	LwM2M							
Y	Y							

Special Function

GNSS	PSM	DFOTA						
Y	Y	Y						

NOTES

1. Y means the firmware supports this function.
2. N means the firmware does not support this function.
- ¹⁾ means only UFS FILE is supported.
- ²⁾ means only FTPS-implicit SSL is supported.

5. Carrier Certification Status

Firmware Version	Full Firmware Version	AT&T	Verizon	T-Mobile	Sprint	Telus	SoftBank	KDDI	DOCOMO	SKT	Telstra	Vodafone	Telefonica	Deutsche Telekom
BG96MAR02A05M1G	BG96MAR02A05M1G					✓								✓
BG96MAR02A06M1G	BG96MAR02A06M1G										✓			
BG96MAR02A07M1G ³⁾	BG96MAR02A07M1G_01.007.01.007	✓	✓					✓				✓		
BG96MAR02A08M1G	BG96MAR02A08M1G_01.009.01.009									✓			✓	
BG96MAR02A08M1GA	BG96MAR02A08M1GA										✓			
BG96MAR02A09M1G	BG96MAR02A09M1G_01.011.01.011			✓										
BG96MAR02A10M1G	BG96MAR02A10M1G_01.013.01.013		✓											

NOTE

³⁾ Other customized application versions also share the certifications of AT1 firmware version.

Firmware Version	Customized Firmware Version
BG96MAR02A07M1G	BG96MAR02A07M1G_01.008.01.008
	BG96MAR02A07M1G_01.009.01.009
	BG96MAR02A07M1G_01.010.01.010
	BG96MAR02A07M1G_01.013.01.013