BG96 Release Notes

LPWA Module Series

Rev. BG96_Firmware_Release_Notes_V0207.01.014.01.014

Date: 2019-06-15

1. Preamble

This document provides the Release Notes for BG96 firmware version **BG96MAR02A07M1G_01.014.01.014**. It describes major changes compared to BG96 firmware version **BG96MAR02A07M1G_01.011.01.011**. All changes are on the APP side, and do not affect protocols of the Modem. We maintain the A07 version number unchanged. Do upgrade on the APP side. For a detailed listing of all changes, please refer to the BG96 AT Command Set.

Before：
ATI
Quectel
BG96
Revision: BG96MAR02A07M1G

After：
ATI
Quectel
BG96
Revision: BG96MAR02A07M1G

AT+QGMR
BG96MAR02A07M1G_01.014.01.014   //Added new AT to query the full version information;

AT+QAPPVER
+QAPPVER: 01.014.01.014   //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 Command **AT+QGMR** to query the full version information, including the protocol version number and application version number of modem.	R02A07_01. 007.01.007
GENERAL	Added AT Command **AT+QCFG="airplanecontrol"** to enable/disable airplane mode.	R02A07_01. 007.01.007

GENERAL	Added AT Command **AT+QCFG="gpio"** for configuration of some GPIOs.	R02A07_01.007.01.007
LwM2M	Added AT Command **AT+QLWM2M="psk"** to enable automatic generation of PSK data.	R02A07_01.007.01.007
GENERAL	Added USB suspend function.	R02A07_01.007.01.007
GENERAL	Added AT Command **AT+QICFG="recvind"** to control whether to append the received data length in the URC.	R02A07_01.008.01.008
GENERAL	Added AT Command **AT+QCFG="simeffect"**.	R02A07_01.008.01.008
GENERAL	Added AT Command **AT+CSIM**.	R02A07_01.008.01.008
GENERAL	Added AT Command **AT+QAPPVER**.	R02A07_01.008.01.008
GENERAL	Added AT Command **AT+QCFGEXT="fota_apn"** to set APN for FOTA thread.	R02A07_01.009.01.009
GENERAL	Fixed the bug that wrong order of power down URCs reporting when module power off.	R02A07_01.009.01.009
CMUX	Fixed the bug that CMUX works abnormally when set the CMUX frame size over 127.	R02A07_01.009.01.009
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_01.009.01.009
SSL	Added AT Command **AT+QSSLCFG="sni"** to support SNI feature.	R02A07_01.009.01.009
NETWORK	Added support for IPV6.	R02A07_01.010.01.010
QuecOpen	Added QAPI to support disable the power off function of the power key.	R02A07_01.010.01.010
FILE	Added AT command to support access AP file system.	R02A07_01.010.01.010
QuecOpen	Added QAPI to support get random number which generated by hardware.	R02A07_01.010.01.010
LwM2M	Added AT Command **AT+QLWM2M="carrier_cfg"** to access carrier_cfg configure file. & AT+QLWM2M="lwm2m_cfg"	R02A07_01.010.01.010
LwM2M	Added AT Command **AT+QLWM2M="lwm2m_cfg"** to access lwm2m_cfg configure file.	R02A07_01.010.01.010
TCP/IP	Added AT command **AT+QICFG="tcp/keepalive"**	R02A07_01.014.01.014
SSL	Added **AT+QSSLCFG="checkhost"** to configure the host name validation.	R02A07_01.014.01.014
GENERAL	Added **AT+QCFG="mmcause"** to get the rejet reason when module try to attach on GSM.	R02A07_01.014.01.014

NETWORK	Added **AT+QICFG="ipv6prior"** to select IPv4 or IPv6 as default PDN type.	R02A07_01. 014.01.014
FILE	Added security file folder function.	R02A07_01. 014.01.014

3. Improved Features

3.1 Improved Features of Modem Protocol

No update.

3.2 Improved Features of Modem APP

Item/Category	Brief description	Since
MQTT	Optimized **AT+QMTPUB** to enable specifying the load length.	R02A07_01.0 07.01.007
GENERAL	Fixed the bug that DTR pin has no internal pull up when module powers on.	R02A07_01.0 07.01.007
GENERAL	Fixed the bug that DCD pin cannot be controlled by **AT&C** command.	R02A07_01.0 07.01.007
MQTT	Fixed the bug that data transmission sometime fails when sending data with a long time interval.	R02A07_01.0 07.01.007
GENERAL	Optimized the file system performance.	R02A07_01.0 07.01.007
GENERAL	Optimized **AT+QCFGEXT="nipdr"** to support display the returned data in hexadecimal format.	R02A07_01.0 08.01.008
GENERAL	Optimized **AT+QLWM2M** commands.	R02A07_01.0 08.01.008
GENERAL	Fixed the bug that incorrect format when execute **AT+QPSMCFG=?**/**AT+QPSMEXTCFG=?**.	R02A07_01.0 08.01.008
TCP/IP	Fixed the bug that TCP handshake failed when set TCP window scale option with 14.	R02A07_01.0 08.01.008
LwM2M	Fixed the bug that reporting firmware version number includes compiling timestamp when client connects to server.	R02A07_01.0 09.01.009
LwM2M	Fixed the bug that reporting Error#506 when module starts FOTA progress.	R02A07_01.0 09.01.009
LwM2M	Added URCs for prompt DFOTA package download start and completely of In-Band.	R02A07_01.0 09.01.009
LwM2M	Fixed the bug that in case of server has an invalid/mismatch DFOTA package, LwM2M client cannot perform the firmware	R02A07_01.0 09.01.009

	package download when execute motive case#11.01 repeatedly.	
FILE	Fixed the bug that cannot use **"+++"** exit from data mode when downloading file over 1MB from module.	R02A07_01.0 09.01.009
GENERAL	Fixed the bug that incorrect response returned when execute **AT+QENG="servingcell"**.	R02A07_01.0 09.01.009
GENERAL	Fixed the bug that **AT+CFUN=1,1** cannot be executed after set module enter into FTM mode.	R02A07_01.0 07.01.007
CMUX	Fixed the bug that CMUX works abnormally when set the CMUX frame size over 127.	R02A07_01.0 09.01.009
GENERAL	Optimized for the **AT+QFOTADL** to support the URL longer than 100 characters, up to 1000 characters.	R02A07_01.0 10.01.010
SSL	Fixed the bug that get partial data but always returning all data when execute **AT+QSSLRECV**.	R02A07_01.0 10.01.010
GNSS	Optimized for **AT+QGPSCFG** to support configure the baud rate of the UART NMEA port.	R02A07_01.0 10.01.010
SMS	Fixed the bug that unexpected URC "+CMTI: -1" reported when module received WAP push type message.	R02A07_01.0 10.01.010
FTP	Optimized hostname processing mechanism.	R02A07_01.0 10.01.010
QuecOpen	Fixed the bug that IIC working abnormal in QuecOpen solution.	R02A07_01.0 10.01.010
FILE	Fixed the bug that file system abnormal if delete the file which still in downloading.	R02A07_01.0 10.01.010
FTM	Fixed the bug that **AT+QRXFTM** returns an abnormal query value.	R02A07_01.0 10.01.010
LwM2M	Fixed the bug that **AT+QLWM2M="device_object"** cannot configure correctly occasionally.	R02A07_01.0 10.01.010
NETWORK	Fixed the bug that when change module to another RAT, "No service" returned by **AT+QNWINFO** occasionally.	R02A07_01.0 10.01.010
SMS	Fixed the bug that "+CMS ERROR code 500" reported when execute **AT+CMGS**.	R02A07_01.0 10.01.010
NETWORK	Fixed the bug that module reports incorrect **CEREG** status with service domain configure with CS & PS.	R02A07_01.0 11.01.011
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_01.0 11.01.011
GNSS	Fixed the bug that module cannot output NMEA data to USB NMEA port occasionally.	R02A07_01.0 11.01.011
GNSS	Fixed the bug that incorrect location status after GNSS lost its location.	R02A07_01.0 11.01.011
FTM	Fixed the bug that incorrect result returned of **QRXFTM** when module is tested under Band 13.	R02A07_01.0 11.01.011
TCP/IP	Optimized for IPV6 support.	R02A07_01.0 11.01.011

GENERAL	Fixed the bug that module blocked after execute **AT+CGACT=1,1** under Cat-M1 network.	R02A07_01.0 11.01.011
PING	Fixed the bug that remove network after executing the **AT+QPING**, there is no URC reported.	R02A07_01.0 11.01.011
NETWORK	Fixed the bug that module cannot register to network after manually deactivating MBN.	R02A07_01.0 11.01.011
DFOTA	Optimized for support HTTP URL access with username and password.	R02A07_01.0 14.01.014
GENERAL	Fixed the bug that there is always error returns when querying IMSI number immediately after RDY is reported.	R02A07_01.0 14.01.014
GENERAL	Fixed the bug that data is easily lost when being output via UART port quickly.	R02A07_01.0 14.01.014
FILE	Fixed the bug that there is error returns occasionally when using **AT+QFDEL** to delete file.	R02A07_01.0 14.01.014
MQTT	Fixed the bug that the MQTT data output is missing when MQTT downstream contains '\0' characters.	R02A07_01.0 14.01.014
GENERAL	Optimized module stability at high temperature with 85 degree Celsius.	R02A07_01.0 14.01.014
LwM2M	Supported 3/0/30000 for Verizon Motive test requirement.	R02A07_01.0 14.01.014
LwM2M	Added Qualcomm CR2192472 to resolve bootstrapping connection failure issue.	R02A07_01.0 14.01.014
GENERAL	Fixed the bug that **AT+CBC** results showed incorrect power percentages	R02A07_01.0 14.01.014

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.
3. [1] Supports UFS FILE only.
4. [2] Supports FTPS-Implicit SSL only.

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 ATI firmware version.

Firmware Version	Customized Firmware Version
BG96MAR02A07M1G	BG96MAR02A07M1G_01.008.01.008
	BG96MAR02A07M1G_01.009.01.009
	BG96MAR02A07M1G_01.010.01.010
	BG96MAR02A07M1G_01.011.01.011
	BG96MAR02A07M1G_01.014.01.014