Quectel BG950S-GL

Ultra-Compact
LTE Cat M1/ NB2 Module

23.6 mm

BG950S-GL Q1-XXXXX
XX
BG950SGLXX-XXX-XXXXX
SN:XXXXXXXXXXXXXX
IMEI:XXXXXXXXXXXXXX

19.9 mm   2.2 mm
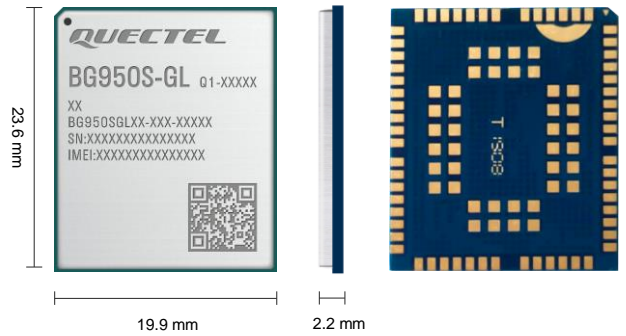
BG950S-GL, a 5G-ready ultra-compact LPWA module, is compliant with 3GPP Release 14, which is to support 3GPP Release 15-17 easily by software upgrade. The module supports LTE Cat M1/ NB2 bands, SRD (Short Range Device) communication in Sub-1 GHz and 2.4 GHz bands, and integrated SIM (iSIM). Besides, it features ultra-low power consumption implemented by Sony ALT1350 processor and integrated RAM and Flash, which help reduce the current consumption to rather low levels in various modes, including PSM, eDRX, etc. It is further integrated with a GNSS engine that supports GPS and GLONASS satellite systems.

With an ultra-compact SMT form factor of 23.6 mm × 19.9 mm × 2.2 mm and a high integration level, the module enables integrators and developers to design applications easily leveraging its low power consumption and compact structure design. The BG950S-GL's advanced LGA package allows for fully automated manufacturing necessary for large-scale applications.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities extend the applicability of the module to a wide range of M2M applications, such as wireless POS, smart metering, tracking, wearable devices, and many more.

Key Features

- ✔ Extremely compact LTE Cat M1/ NB2 module with ultra-low power consumption
- ✔ SRD (Short Range Device) radio with mesh capabilities
- ✔ Integrated RAM and Flash
- ✔ Super slim profile in LGA package
- ✔ Support integrated SIM (iSIM)
- ✔ Embedded with abundant Internet service protocols
- ✔ Support DFOTA
- ✔ A rich set of external interfaces (including RF control interfaces) that ensure convenient applications
- ✔ Fast time-to-market: reference designs, evaluation tools and timely technical support minimizing time and efforts in design and development
- ✔ Robust mounting and interfaces

LTE Cat M1 & Cat NB2

LGA Package
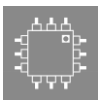
iSIM

Abundant Protocols Embedded

DFOTA

Compact Size

Ultra-Low Power Consumption

Quectel Enhanced AT Commands

Integrated RAM and Flash

Version: 1.1 | Status: Released

LPWA Module	BG950S-GL		
Region/ Operator	Global		
Dimensions (mm)	23.6 × 19.9 × 2.2		
Package	LGA		
Weight (g)	TBD		
Temperature Range			
Operating Temperature	-35 °C to +75 °C		
Extended Temperature	-40 °C to +85 °C		
Frequency Bands			
LTE-FDD	Cat M1: B1/ 2/ 3/ 4/ 5/ 8/ 12/ 13/ 18/ 19/ 20/ 25/ 26/ 27/ 28/ 66/ 71		
	Cat NB2: B1/ 2/ 3/ 4/ 5/ 8/ 12/ 13/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 66/ 71/ 85		
Data Rate (Max.)			
LTE (kbps)　　　Rel-14	Cat M1*: 588 (DL)/ 1119 (UL)		
	Cat NB2*: 127 (DL)/ 158 (UL)		
Certifications			
Carrier	**Europe:** Vodafone*/ Deutsche Telekom* **America:** AT&T*/ T-Mobile*/ Verizon* **South Korea:** KT*/ LGU+*/ KC* **Australia**: Telstra* **Canada:** Rogers*/ Telus* **Japan**: KDDI*/ NTT DOCOMO*		
Regulatory	**Global:** GCF* **Europe:** CE* **North America:** PTCRB* **America:** FCC* **Canada:** IC* **South Korea:** KC* **Japan:** JATE*/ TELEC* **Australia/New Zealand:** RCM*		
Others	RoHS		
Interfaces			
UART	× 2		
ADC*	× 2		
(U)SIM	× 1 (Supports 1.8 V only)		
GPIO*	× 9		
GRFC*	× 2		
NET_STATUS	× 1 (Indicate the module's network activity status)		
STATUS	× 1 (Indicate the module's operation status)		
Antenna	× 2 (Main Antenna: × 1; GNSS Antenna*: × 2)		
SMS			
Short Message Service*	Point-to-Point MO and MT SMS cell broadcast Text and PDU mode SMS storage: ME by default		
Enhanced Features			
GNSS*	GPS/ GLONASS		
DFOTA*	●		
QuecOpen®	-		
iSIM*	●		
SRD*	●		
Software Features			
3GPP	3GPP E-UTRA Release 14		
AT Commands	*3GPP TS 27.007* *3GPP TS 27.005* Quectel Enhanced AT Commands		
Protocols	TCP/ PPP*/ UDP/ SSL*/ MQTT/ FTP(S)*/ HTTP(S)/ LwM2M*/ IPv4/ IPv6*/ TLS*/ DTLS*/ PING*/ CoAP/ NITZ*		
Firmware Upgrade	UART/ DFOTA*		
Electrical Features			
Output Power (Max.)	23 dBm ±2 dB		
Supply Voltage Range	VBAT_BB/ VBAT_RF: 2.2–4.35 V, typ. 3.3 V		
Power Consumption (Typical)	**Power Saving Mode:** 1.35 µA **Rock Bottom:** 1.6 µA @ CFUN=0, QSCLK=3 4.0 µA @ CFUN=0, QSCLK=2 **Idle Mode:** 11.6 mA @ Cat NB, DRX = 1.28 s 11.3 mA @ Cat M1, DRX = 1.28 s 11.1 mA @ e-I-DRX = 81.92 s; PTW = 2.56 s; DRX = 1.28 s	**Sleep Mode @ QSCLK=2:** Cat M1: 0.6 mA @ DRX = 1.28 s 18 µA @ e-I-DRX = 40.96 s; PTW = 1.28 s; DRX = 1.28 s 12 µA @ e-I-DRX = 81.92 s; PTW = 1.28 s; DRX = 1.28 s Cat NB: 0.9 mA @ DRX = 1.28 s 0.3 mA @ DRX = 10.24 s 50 µA @ e-I-DRX = 40.96 s; PTW = 2.56 s; DRX = 1.28 s	**Active Mode (GNSS disabled):** Cat M1: 138 mA @ 23 dbm Cat NB1: 172 mA @ 23 dbm

Note:
*: Under development/ in progress.　　　●: Supported.　　　-: Not supported.

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