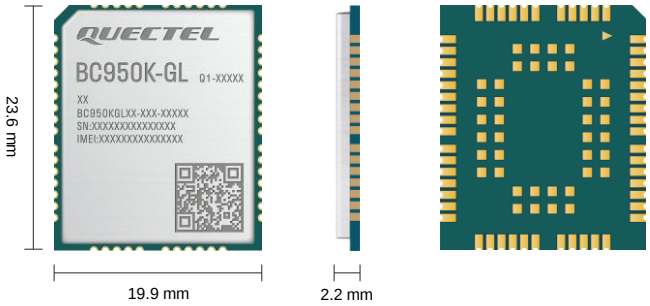
Quectel BC950K-GL

Multi-band LTE Cat NB2 Module with Ultra-Low Power Consumption



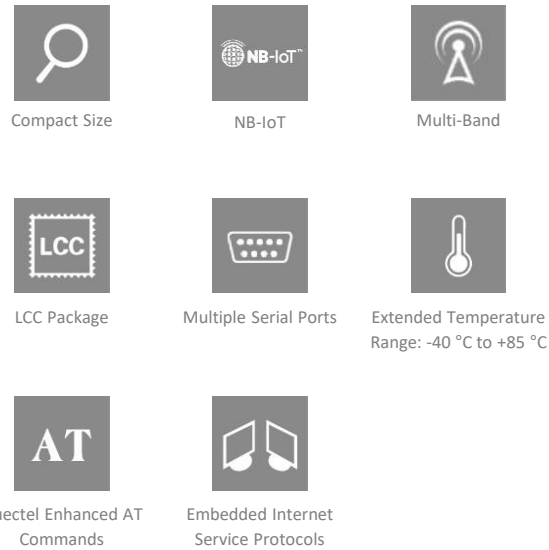
BC950K-GL is a high-performance NB-IoT module which supports multiple frequency bands of B1/ 2/ 3/ 4/ 5/ 8/ 12/ 13/ 17/ 18/ 19/ 20/ 25/ 28/ 66/ 70/ 85 with extremely low power consumption. With an ultra-compact form factor of 23.6 mm × 19.9 mm × 2.2 mm, it is a perfect choice for size-sensitive applications. Designed to be package compatible with Quectel GSM/ GPRS M95 R2.0 and NB-IoT BC95-G modules which can be replaceable only with slight modifications, easy for product migration, it provides a flexible and scalable platform for migrating from GSM/ GPRS to NB-IoT networks.

BC950K-GL adopts the surface mount technology, which makes it an ideal solution for durable and rugged designs. The low profile and small size of the LCC package allow BC950K-GL to be easily embedded into space-constrained applications and provide reliable connectivity with the applications. This kind of package is ideally suited for large-scale manufacturing which has strict requirements for cost and efficiency.

Due to compact form factor, ultra-low power consumption and extended temperature range, BC950K-GL is one of the best choices for a wide range of IoT applications, such as smart metering, bike sharing, smart parking, smart city, security and asset tracking, home appliances, agricultural and environmental monitoring, etc. It is able to provide a complete range of SMS and data transmission services to meet different demands.

Key Features

- Compact-sized, multi-band NB-IoT module
- Ultra-low power consumption
- Super high sensitivity
- Low voltage power supply: 2.2–4.3 V
- eSIM reserved with 5 x 6 mm package
- LCC package to make it easy for large volume manufacturing
- Abundant embedded Internet service protocols
- QuecOpen®* supported to save an MCU
- Package compatible with Quectel GSM/ GPRS M95 R2.0 and NB-IoT BC95-G modules



Version: 1.0 | Status: Released

Quectel BC950K-GL

LTE Cat NB2	BC950K-GL
Region/Operator	Global
General Features	
Pins	94
Package	LCC, LGA
Dimensions (mm)	23.6 × 19.9 × 2.2
Weight (g)	1.6 ±0.2
Temperature Range	
Operating Temperature	-35 °C to +75 °C
Extended Temperature	-40 °C to +85 °C
Frequency Bands	
LTE-FDD	B1/ 2/ 3/ 4/ 5/ 8/ 12/ 13/ 17/ 18/ 19/ 20/ 25/ 28/ 66/ 70/ 85
Certifications	
Carrier	**Europe:** Vodafone*/ Deutsche Telekom*/ Telefónica* **France:** Orange* **South Korea:** KT*/ LGU+* **Australia:** Telstra*/ Optus*
Regulatory	**Global:** GCF* **Europe:** CE* **Brazil:** Anatel* **South Korea:** KC* **Australia/ New Zealand:** RCM* **Thailand:** NBTC* **Singapore:** IMDA* **South Africa:** ICASA*
Others	ATEX*
Data Rate (Max.)	
LTE-FDD (kbps) ①	**Single-Tone (max):** 25.5 kbps (DL) / 16.7 kbps (UL) **Multi-tone (max):** 127 kbps (DL) / 158.5 kbps (UL)
Interfaces	
USIM	× 1
UART	× 2 (QuecOpen®* Version, × 3, only one port for debug)
RI	× 1
ADC	× 1 (QuecOpen®* Version, ×4)
RESET_N	× 1
NETLIGHT	× 1
PSM_EINT	× 1 (QuecOpen®* Version, × 5)
Antenna	× 1
BOOT	× 1
GRFC*	× 2
SPI* ②	× 1 (for QuecOpen®* only, Multiplexed with other pins)
I2C* ②	× 1 (for QuecOpen®* only, Multiplexed with other pins)
PWM* ②	× 1 (for QuecOpen® *only, Multiplexed with other pins)
GPIO* ②	Configurable (for QuecOpen®* only, Multiplexed with other pins)
SMS	
Short Message Service (Point-to-point MO and MT)	Text Mode

Notes:

1. ①: Predicted data rate. The actual data rate is to be tested.
2. ②: Only supported by QuecOpen® solution.
3. *: Under development/ planning.

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Quectel BC950K-GL

LTE Cat NB2	BC950K-GL
Enhanced Features	
DFOTA: Delta Firmware Upgrade Over-The-Air	●
RAI: Release Assistance Indication	●
eSIM: Embedded SIM①	●
Software Features	
Protocol Stack	UDP/ TCP/ PING/ SNTP/ LwM2M/ SSL/ MQTT/ MQTTS*/ TLS*
Firmware Upgrading Method	UART/ DFOTA
AT Command	*3GPP TS 27.007* *3GPP TS 27.005* Quectel Enhanced AT Commands
Electrical Characteristics	
Power Supply	2.2–4.3 V, typical 3.6 V②
GPIO Voltage	3.0 V
Maximum Output Power	23 dBm ±2 dB
Sensitivity	-129 dBm ±1 dB
Power Consumption (Typical)	0.8 μA③ @ PSM 0.11 mA③ @ Idle Mode, DRX = 2.56 s, ECL0

Notes:

1. ①: eSIM is reserved but not included by default.
2. ②: 3GPP performance for QCX212 chipset is guaranteed from VBAT supply 3.0–4.3 V.
3. ③: Reference data provided by baseband chip platform.
4. *: Under development/ planning.
5. ●: Supported.

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