Quectel BC68-GV

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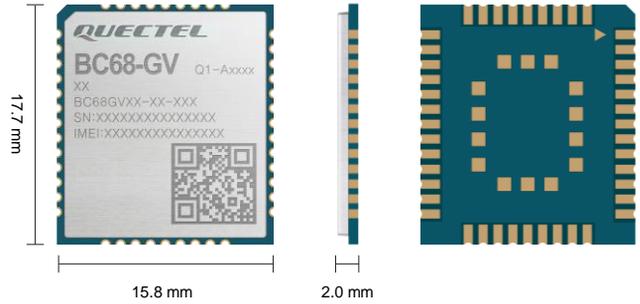
17.7 mm

15.8 mm   2.0 mm

BC68-GV is a high-performance NB-IoT module which supports multiple frequency bands of B1/ B3/ B5/ B8/ B20/ B28/ B18*/ B26* with extremely low power consumption, integrated BLE 5.0. With an ultra-compact form factor of 17.7 mm × 15.8 mm × 2.0 mm, it is a perfect choice for size sensitive applications. Designed to be compatible with Quectel GSM/GPRS M66 module and NB-IoT BC68/BC66 module, it provides a flexible and scalable platform for migrating from GSM/GPRS to NB-IoT networks.

BC68-GV adopts 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 BC68-GV 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, BC68-GV 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 client-side demands.

Key Features

- ✔ Compact-sized multi-band NB-IoT module
- ✔ Ultra-low power consumption
- ✔ Super high sensitivity
- ✔ Low voltage power supply: 2.1–4.2 V
- ✔ Integrated BLE 5.0
- ✔ eSIM reserved
- ✔ LCC package to make it easy for large volume manufacturing
- ✔ Abundant embedded Internet service protocols
- ✔ QuecOpen®* supported to save the MCU
- ✔ Compatible with Quectel GSM/GPRS M66 and NB-IoT BC68/ BC66, easy for product migration

Compact Size

Multi-Band NB-IoT

B1/B3/B5/B8/B20/ B28/B18*/B26*

LCC Package

Multiple Serial Ports

Extended Temperature Range: -40 °C to +85 °C

Quectel Enhanced AT Commands

BLE 5.0

Embedded Internet Service Protocols

Version: 1.2 | Status: Released

LTE Cat NB2	BC68-GV
Region/Operator	Global
General Features	
Pins	58
Package	LCC
Dimensions (mm)	17.7 × 15.8 × 2.0
Weight (g)	1.0 ±0.2
Temperature Range	
Operating Temperature	-35 °C to +75 °C
Extended Temperature	-40 °C to +85 °C
Frequency Bands	
LTE-FDD	B1/B3/B5/B8/B20/B28/B18*/B26*
Certifications	
Carrier	**Europe:** Vodafone*/Deutsche Telekom*/Telefónica* **South Korea:** KT*/LGU+* **Japan:** SoftBank* **Australia:** Telstra* **New Zealand:** Spark*
Regulatory	**Global:** GCF* **Europe:** CE **Brazil:** Anatel* **South Korea:** KC* **Taiwan, China:** NCC **Australia/New Zealand:** RCM **Russia:** FAC* **Thailand:** NBTC* **Singapore:** IMDA*
Others	ATEX*
Data Rate (Max.)	
LTE-FDD (kbps) [1]	**Single-Tone:** 25.2 (DL) / 15.625 (UL) **Multi-Tone:** 25.2 (DL) / 54 (UL) **Extended TBS/2 HARQ:** 125 (DL) / 150 (UL)
Interfaces	
USIM	× 1
UART	× 2 (QuecOpen®* Version: × 3)
RI	× 1
ADC	× 2 (QuecOpen®* Version: × 3)
RESET_N	× 1
NETLIGHT	× 1
WAKEUP_OUT	× 1
Antenna	× 1
SPI* [2]	× 2
I2C* [2]	Max. × 3
PWM* [2]	× 2
GPIO* [2]	Configurable
SMS	
Short Message Service (Point-to-point MO and MT)	PDU Mode

Note:

1. [1]: Predicted data rate. The actual data rate is to be tested.

2. [2]: Only supported by QuecOpen® version.

3. *: Under development/planning.

LTE Cat NB2	BC68-GV
Enhanced Features	
DFOTA: Delta Firmware Upgrade Over-The-Air	●
RAI: Release Assistance Indication	●
ECID: Enhanced Cell ID	●
OTDOA: Observed Time Difference of Arrival	●
eSIM: Embedded SIM [1]	○
BLE 5.0	●
Software Features	
Protocol Stack	IPv4/IPv6/UDP/TCP/Non-IP/CoAP/LwM2M/DTLS/MQTT/HTTP*/DNS/TLS*/MQTTS*
Firmware Upgrading Method	UART/DFOTA/DOFTA over BLE
AT Command	3GPP TS 27.007 3GPP TS 27.005 Quectel Enhanced AT Commands
Electrical Characteristics	
Power Supply	2.1–4.2 V, typical 3.0 V or 3.6 V
GPIO Voltage	3.0 V
Maximum Output Power	23 dBm ±2 dB
Sensitivity	-129 dBm ±1 dB
Power Consumption (Typical)	2 µA [2] @ PSM 0.15 mA @ Idle Mode, DRX = 2.56 s, ECL0 310 mA @ Tx, 23 dBm (B1) 300 mA @ Tx, 23 dBm (B3) 250 mA @ Tx, 23 dBm (B5/B8/B20/28) 50 mA @ Tx, 0 dBm (B1) 45 mA @ Tx, 0 dBm (B3) 35 mA @ Tx, 0 dBm (B5/B8/B20/B28) 23 mA @ Rx

Note:

1. [1]: eSIM is reserved but not included by default.

2. [2]: Reference data provided by baseband chip platform.

3. *: Under development/planning.

4. ●: Supported; ○: Optional.

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