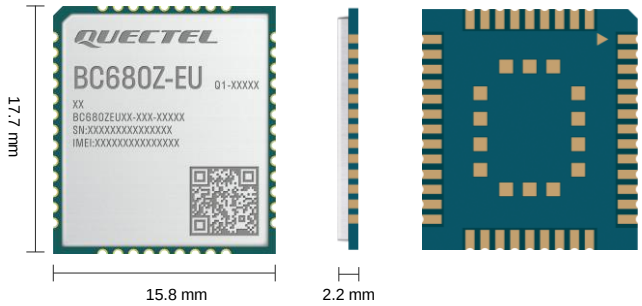
Quectel BC680Z-EU

Compact LTE Cat NB2 Module with Ultra-low Power Consumption



BC680Z-EU is a high-performance LTE Cat NB2 module which supports multiple frequency bands of B3/ 5/ 8/ 20/ 28 with extremely low power consumption. With an ultra-compact form factor of 17.7 mm × 15.8 mm × 2.2 mm, it is a perfect choice for size-sensitive applications, which helps reduce product size and optimize product cost. Designed to be compatible with Quectel NB-IoT BC68 series module in form and size, it will help customers to facilitate designing and upgrading products more rapidly and flexibly.

Designed in an LCC + LGA form factor, BC680Z-EU can achieve rapid production of modules through standard SMT equipment and provide customers with reliable connection methods. It is especially suitable for automated, large-scale, low-cost modern production methods. SMT technology also makes BC680Z-EU highly reliable to meet application requirements in complex environments.

The module integrates a multi-constellation GNSS receiver (optional) that supports GPS, GLONASS, Galileo and QZSS. It helps to simplify the product design and can achieve high-precision, fast, and dependable positioning.

Due to compact form factor, ultra-low power consumption and extended temperature range, BC680Z-EU is one of the best choices for a wide range of IoT applications, such as smoke detector, wireless meter reading, bike sharing, smart parking, smart city, smart safety and asset tracking, smart home appliances, wearable devices, 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 LTE Cat NB2 module with LCC + LGA package
- Ultra-low power consumption and ultra-high sensitivity
- Extra wide voltage power supply: 2.2–4.5 V
- Embedded GNSS (Optional)
- QuecOpen® supported to save a MCU
- Compatible with Quectel NB-IoT BC68 series module for easier future upgrading
- Embedded with abundant Internet service protocols
- Multi-band and rich external interfaces ensuring convenient application

Compact Size

Multi-band Cat NB2

Multi-constellation GNSS (Optional)

LCC + LGA Package

Multiple Serial Ports

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

Quectel Enhanced AT Commands

Embedded Internet Service Protocols

Ultra-low Power Consumption

Version: 1.2 | Status: Released

Quectel BC680Z-EU

LTE Cat NB2	BC680Z-EU
Region/ Operator	Europe
Dimensions (mm)	17.7 × 15.8 × 2.2
Weight (g)	1.1 ±0.2
Package	LCC + LGA
Temperature Range	
Operating Temperature	-35 °C to +75 °C
Extended Temperature	-40 °C to +85 °C
Frequency Bands	
LTE-FDD	B3 / 5 / 8 / 20 / 28
GNSS (Optional)	GPS/ GLONASS/ Galileo/ QZSS
Certifications	
Carrier	Vodafone/ Telefónica
Regulatory	GCF/ CE/ RCM/ Anatel/ CCC
Data Rate	
LTE-FDD	Cat NB2 (Max) : 126.8 kbps (DL) / 158.5 kbps (UL)
Interfaces	
USIM	× 1
UART	× 2 (for QuecOpen®, × 3 (Embedded GNSS)/ × 4 (Without GNSS)
RI*	× 1
ADC	× 1 (for QuecOpen®, × 2①)
RESET_N	× 1
NET_STATUS	× 1
Antenna	× 2
BOOT	× 1
VDD_EXT	× 1 (for QuecOpen®, × 2)
GPIO	× 18 (for QuecOpen® only①)
I2C	× 2 (for QuecOpen® only②)
SPI	× 1 (for QuecOpen® only②)
PWM	× 1 (for QuecOpen® only)
PSM_EINT	× 1
Enhanced Features	
DFOTA	●
RAI	●
Software Features	
Protocol Stack	UDP/ TCP/ LwM2M*/ SNTP*/ IPv4/ IPv6/ NITZ/ PING/ HTTP③/ HTTPS*
Firmware Upgrading Method	UART/ DFOTA
AT Command	3GPP TS 27.007 and 3GPP TS 27.005 Quectel Enhanced AT Commands
Electrical Characteristics	
Power Supply	2.2–4.5 V, typical 3.6 V
Power Consumption	2.8 μA @ PSM 0.19 mA @ DRX in idle mode, DRX = 2.56 s, ECL = 0 0.11 mA @ eDRX in idle mode, eDRX = 40.96 s, ECL = 0

Notes:

1. * : Under development/ planning.
2. ① : Include multiplexed pins..
3. ② : Multiplexed with other pins.
4. ③ : Only for DFOTA.
5. ● : Supported.

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