Quectel BC680Z-EU

Compact LTE Cat NB2 Module with Ultra-low Power Consumption
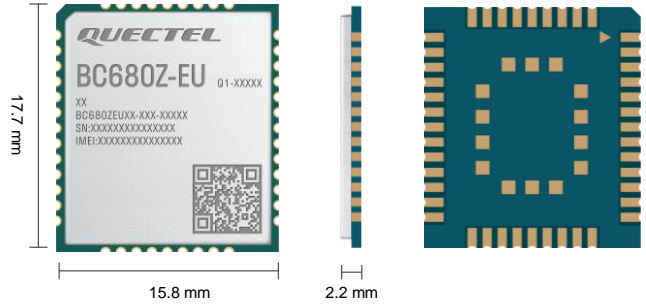
17.7 mm
15.8 mm
2.2 mm

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 help 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 facilitates designing and upgrading products more rapidly and flexibly.

Designed in an LCC 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 also combines high-speed wireless connectivity with embedded multi-constellation and high-sensitivity GNSS (GPS/ BDS/ GLONASS/ Galileo) receiver for positioning while greatly simplifying product design.

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 package
- ✔ Ultra-low power consumption and ultra-high sensitivity
- ✔ Extra wide voltage power supply: 2.2–4.5 V
- ✔ Embedded GNSS
- ✔ QuecOpen® supported to save a MCU
- ✔ Compatible with Quectel NB-IoT BC68 series module, which means easier future upgrading
- ✔ Embedded with abundant Internet service protocols
- ✔ Multi-band and rich external interfaces ensuring convenient application

Compact Size

Multi-band Cat NB2

GNSS

LCC 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: 1.0.0 | Status: Preliminary

LTE Cat NB2	BC680Z-EU
Region/Operator	Europe
Dimensions (mm)	17.7 × 15.8 × 2.2
Weight (g)	TBD
Package	LCC
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	GPS / QZSS / Galileo / GLONASS
Certifications	
Carrier	**Europe:** Deutsche Telekom*/ Telefónica*
Regulatory	**Global:** GCF* **Europe:** CE* **America:** FCC*
Data Rate	
LTE-FDD	Cat NB2 (Max) : 126.5 kbps (DL) / 158.5 kbps (UL)
Interfaces	
USIM	× 1
UART	× 2
RI*	× 1
ADC	× 1
RESET	× 1
NET_STATUS	× 1
Antenna	× 2
BOOT	× 1
VDD_EXT	× 1
GPIO[①]	-
Enhanced Features	
DFOTA	●
RAI	●
Software Features	
Protocol Stack	UDP/ TCP/ LwM2M/ SNTP/ IPv4/ IPv6/ NITZ/ PING
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	TBD

Notes:

1. TBD: To Be Determined.

2. * : Under development/ planning.

3. ① : Only supported by QuecOpen® solution.

4. ● : Supported.