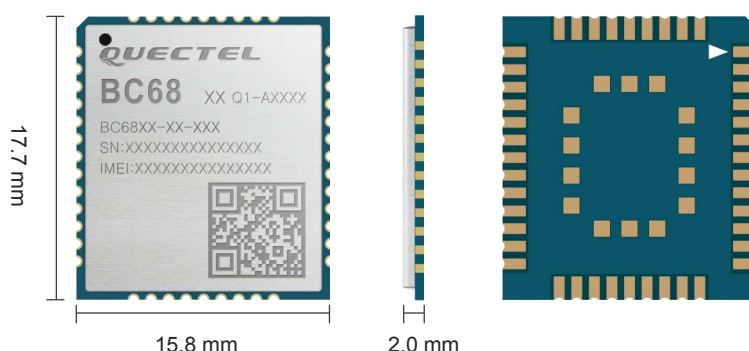




Quectel BC68

Ultra-compact Multi-band
NB-IoT Module with
Ultra-low Power Consumption



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

BC68 adopts surface mounted technology, making it an ideal solution for durable and rugged designs. The low profile and small size of LCC package allow BC68 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 is the best choice 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 Benefits

- ✓ Compact-sized multi-band NB-IoT module
- ✓ Ultra-low power consumption
- ✓ Super high sensitivity
- ✓ LCC package to make it easy for large volume manufacturing
- ✓ Compatible with Quectel GSM/GPRS M66 and NB-IoT BC66, easy for future upgrading
- ✓ Embedded with abundant Internet service protocols
- ✓ Fast time-to-market:
Reference designs, evaluation tools and timely technical support to minimize design-in time and development efforts



Compact Size



Multi-Band
NB-IoT



B1/B3/B8/B5/
B20/B28



LCC Package



Multiple Serial
Ports



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



Quectel Enhanced
AT Commands



Embedded Internet
Services Protocols



Ultra-low Power
Consumption

Rev.: V1.8 | Status: Released

Quectel BC68

Ultra-compact Multi-band NB-IoT Module with Ultra-low Power Consumption

Frequency Bands

BC68:

B1 @ H-FDD: 2100 MHz
B3 @ H-FDD: 1800 MHz
B8 @ H-FDD: 900 MHz
B5 @ H-FDD: 850 MHz
B20 @ H-FDD: 800 MHz
B28 @ H-FDD: 700 MHz

Data

Data Transmission:

Single Tone:

DL: 25.2 kbps
UL: 15.625 kbps

Multi Tone:

DL: 25.2 kbps
UL: 54 kbps

Extended TBS/2 HARQ:

DL: 125 kbps
UL: 150 kbps

Protocol Stacks:

IPv4
IPv6
UDP
CoAP
LwM2M
Non-IP
DTLS
TCP
MQTT
Download Method:
UART
DFOTA

SMS

Point-to-point MO and MT
PDU Mode

Electrical Characteristics

Maximum Output Power:

23 dBm ± 2 dB

Sensitivity:

-129 dBm ± 1 dB

Power Consumption (Typical):

3 μ A @ PSM
0.5 mA @ Idle Mode, DRX = 2.56 s, ECL0

LTE Cat NB1 Connectivity:

250 mA @ Radio Transmission, 23 dBm (B1/B3)
220 mA @ Radio Transmission, 23 dBm (B8/B5/B20)
280 mA @ Radio Transmission, 23 dBm (B28)
130 mA @ Radio Transmission, 12 dBm (B1/B3/B8/B5/B20/B28)
70 mA @ Radio Transmission, 0 dBm (B1/B3/B8/B5/B20/B28)
60 mA @ Radio Reception

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

Interfaces

USIM $\times 1$: Supports 1.8/3.0 V USIM Card
UART $\times 2$
ADC* $\times 1$
RESET $\times 1$
Antenna $\times 1$

General Features

LCC Package
58 Pins
Supply Voltage Range:
3.1–4.2 V, typical 3.6 V

Temperature Range:

Operation: -35 °C to +75 °C
Extended: -40 °C to +85 °C

Dimension:

17.7 mm \times 15.8 mm \times 2.0 mm

Weight:

1.1 \pm 0.2 g

AT Command:

3GPP TS 27.007 V14.3.0 (2017-03) and Quectel
Enhanced AT Commands

Approvals

Carrier:

Vodafone (Europe)
Deutsche Telekom (Germany)
TIM (Italy)
Telefónica (Spain)
Altice-MEO (Portugal)
SoftBank (Japan)
Telstra (Australia)

Regulatory:

GCF (Global)
CE (Europe)
NCC (Taiwan, China)
JATE/TELEC (Japan)
RCM (Australia/New Zealand)
IMDA (Singapore)

Others:

RoHS Compliant
ATEX (Europe)

* Under Development