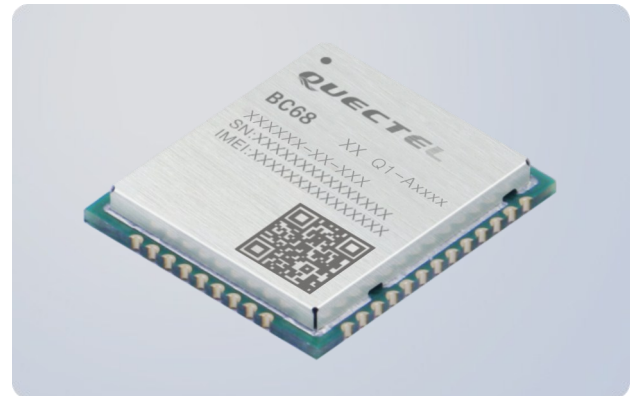


# Quectel BC68

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 17.7mm × 15.8mm × 2.0mm form factor makes it a perfect choice for size sensitive applications. Designed to be compatible with Quectel GSM/GPRS M66 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 makes it easy for large volume manufacturing
- ✓ Compatible with Quectel GSM/GPRS module, easy for future upgrading
- ✓ Embedded with abundant Internet service protocols
- ✓ Fast time-to-market:  
Reference designs, evaluation tools and timely technical support minimize design-in time and development efforts



Compact Size



B1/B3/B8/B5/  
B20/B28



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



LCC Package



Multiple Serial  
Ports



Ultra-low Power  
Consumption



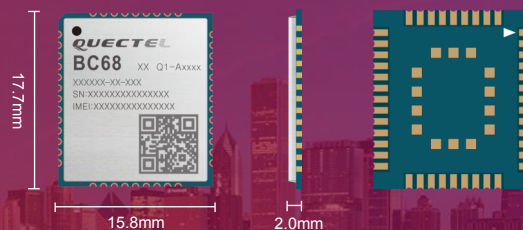
Quectel Enhanced  
AT Commands



Embedded Internet  
Services Protocols

# Quectel BC68

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



### Frequency Bands

#### BC68:

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

### Data

#### Data Transmission:

##### Single Tone:

DL: 25.2kbps

UL: 15.625kbps

##### Multi Tone:

DL: 25.2kbps

UL: 54kbps

#### Extended TBS/2 HARQ:

DL: 125kbps

UL: 150kbps

#### 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:

23dBm±2dB

#### Sensitivity:

-129dBm±1dB

#### Power Consumption (Typical):

3uA @PSM

0.5mA @Idle Mode, DRX=2.56s, ECL0

#### LTE Cat NB1 Connectivity:

250mA @Radio Transmission, 23dBm (B1/B3)

220mA @Radio Transmission, 23dBm (B8/B5/

B20)

280mA @Radio Transmission, 23dBm (B28)

130mA @Radio Transmission, 12dBm (B1/B3/B8/

B5/B20/B28)

70mA @Radio Transmission, 0dBm (B1/B3/B8/

B5/B20/B28)

60mA @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 × 1: Supports 1.8V/3.0V USIM Card

UART × 2

ADC\* × 1

RESET × 1

Antenna × 1

### General Features

LCC Package

58 Pins

#### Supply Voltage Range:

3.1V~4.2V, 3.6V Typ.

#### Temperature Range:

-40°C ~ +85°C

#### Dimension:

17.7mm × 15.8mm × 2.0mm

#### Weight:

1.1g±0.2g

#### AT Command:

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

Enhanced AT Commands

### Approvals

#### Carrier:

Vodafone (Global)

Deutsche Telekom/Telefónica\* (Europe)

SoftBank\* (Japan)

Telstra (Australia)

#### Regulatory:

GCF (Global)

CE (Europe)

KC\* (South Korea)

NCC (Taiwan)

JATE/TELEC (Japan)

RCM (Australia/New Zealand)

IMDA (Singapore)

#### Others:

RoHS Compliant

ATEX (Europe)

\* Under Development