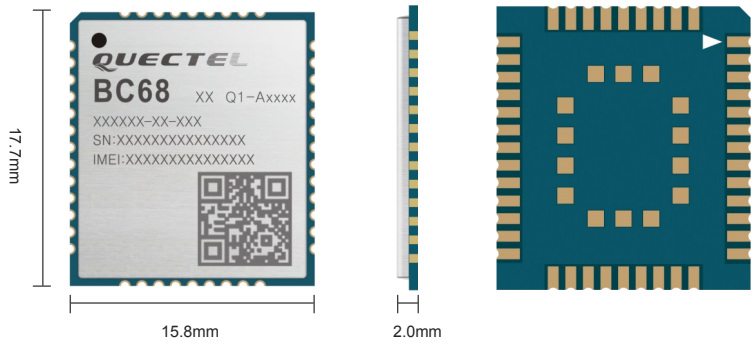
Quectel BC68

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 to make 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 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 ~ +85°C

Quectel Enhanced AT Commands

Embedded Internet Services Protocols

Ultra-low Power Consumption

Rev.: V1.7 | Status: Released

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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):

3μA @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:

Operation: -35°C ~ +75°C

Extended: -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)

NCC (Taiwan, China)

JATE/TELEC (Japan)

RCM (Australia/New Zealand)

IMDA (Singapore)

Others:

RoHS Compliant

ATEX (Europe)

* Under Development

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