

# Quectel BC95-G

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



BC95-G 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 23.6mm × 19.9mm × 2.2mm profile makes it a perfect choice for size sensitive applications. Designed to be compatible with Quectel GSM/GPRS M95 module in the compact and unified form factor, it provides a flexible and scalable platform for migrating from GSM/GPRS to NB-IoT networks.

BC95-G adopts surface mounted technology, making it an ideal solution for durable and rugged designs. The low profile and small size of LCC package allow BC95-G 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, BC95-G 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



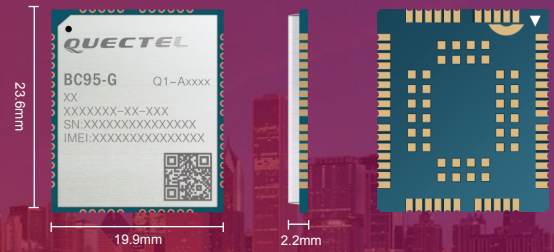
Quectel Enhanced  
AT Commands



Embedded Internet  
Services Protocols

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### Frequency Bands

#### BC95-G:

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

### Interfaces

USIM × 1: Supports 1.8V/3.0V USIM Card

UART × 2

ADC\* × 1

RESET × 1

Antenna × 1

### General Features

LCC Package

94 Pins

#### Supply Voltage Range:

3.1V~4.2V, 3.6V Typ.

#### Temperature Range:

-40°C ~ +85°C

#### Dimension:

23.6mm × 19.9mm × 2.2mm

#### Weight:

1.8g±0.2g

#### AT Command:

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

### Approvals

RoHS Compliant

GCF/Vodafone\* (Global)

CE/ATEX\* (Europe)

JATE/TELEC/SoftBank\* (Japan)

KC/KT\*/LGU+\* (South Korea)

Telefónica\* (Spain)

RCM/Telstra\* (Australia)

NBTC (Thailand)

NCC (Taiwan)

\* Under Development