

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 and LPWA BC95 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



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 M95 and LPWA BC95 modules, 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



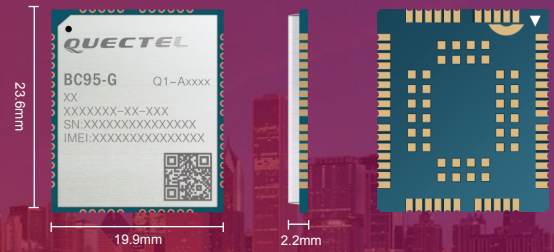
Quectel Enhanced
AT Commands



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

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

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

Carrier:

Vodafone (Global)

Deutsche Telekom/Telefónica* (Europe)

KT*/LGU+* (South Korea)

SoftBank* (Japan)

Telstra (Australia)

Regulatory:

GCF (Global)

CE (Europe)

KC (South Korea)

NCC (Taiwan)

JATE/TELEC (Japan)

RCM (Australia/New Zealand)

NBTC (Thailand)

Others:

RoHS Compliant

ATEX* (Europe)

* Under Development