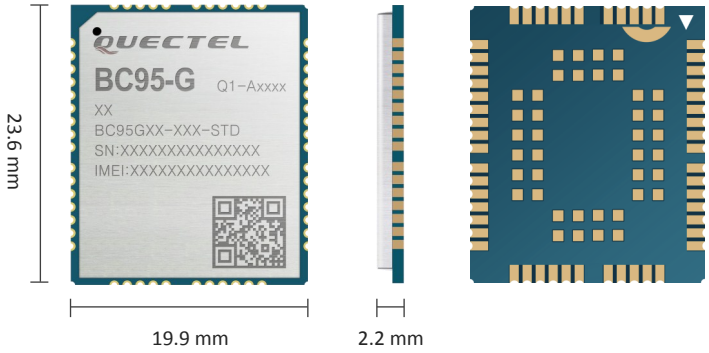
Quectel BC95-G

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



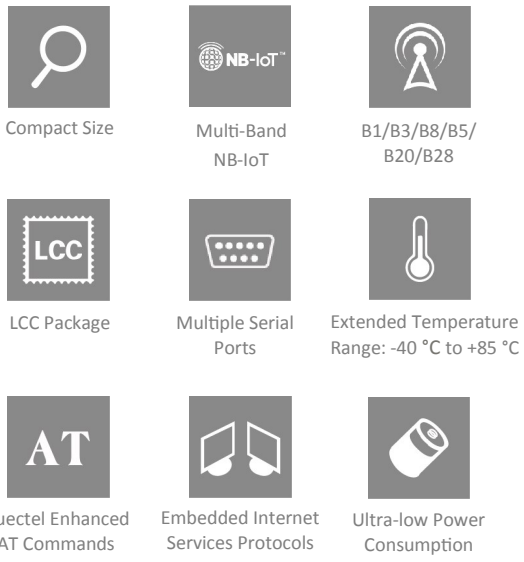
BC95-G is a high-performance NB-IoT module which supports multiple frequency bands of B1/B3/B8/B5/B20/B28 with extremely low power consumption. The ultra-compact 23.6 mm × 19.9 mm × 2.2 mm profile makes it a perfect choice for size sensitive applications. Designed to be compatible with Quectel GSM/GPRS M95 module and NB-IoT 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 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 M95 and NB-IoT BC95 modules, 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



Rev.: V1.9 | Status: Released

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Frequency Bands

BC95-G:

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

UART × 2

ADC* × 1

RESET × 1

Antenna × 1

General Features

LCC Package

94 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:

23.6 mm × 19.9 mm × 2.2 mm

Weight:

1.8 ±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)

Telefónica (Spain)

KT/LGU+ (South Korea)

SoftBank (Japan)

Telstra (Australia)

Regulatory:

GCF (Global)

CE (Europe)

Anatel (Brazil)

KC (South Korea)

NCC (Taiwan, China)

JATE/TELEC (Japan)

RCM (Australia/New Zealand)

NBTC (Thailand)

IMDA (Singapore)

Others:

RoHS Compliant

ATEX (Europe)

* Under Development

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