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 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 makes 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 minimize design-in time and development efforts

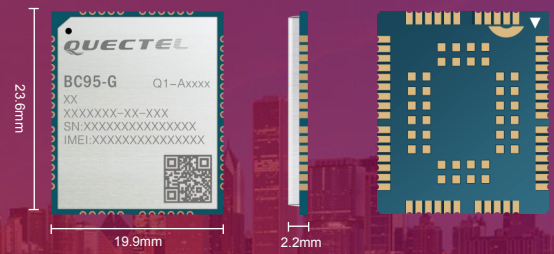|		
Compact Size	Multi-Band NB-IoT	B1/B3/B8/B5/B20/B28
LCC Package	Multiple Serial Ports	Extended Temperature Range: -40°C ~ +85°C
Quectel Enhanced AT Commands	Embedded Internet Services Protocols	Ultra-low Power Consumption

Rev.: V1.6 | Status: Released

Quectel BC95-G

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

23.6mm

19.9mm

2.2mm

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)

IMDA (Singapore)

Others:

RoHS Compliant

ATEX* (Europe)

* Under Development

QUECTEL®