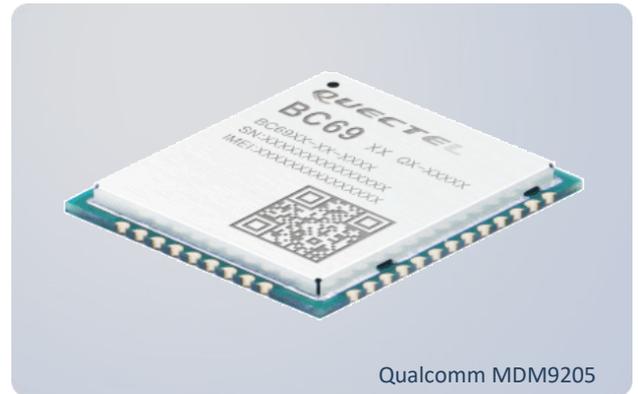# Quectel BC69

Ultra-Compact
LTE Cat M1/Cat NB2 Module

Qualcomm MDM9205

BC69 is an ultra-compact multi-mode LTE Cat M1/Cat NB2 module with integrated GNSS functionality. It is fully compliant with 3GPP Rel. 14 specification and offers a maximum data rate of 589Kbps downlink and 1.12Mbps uplink. It features ultra-low power consumption by leveraging the integrated RAM/flash as well as the ARM Cortex A7 processor supporting ThreadX, achieving up to 70% reduction in PSM leakage and 85% reduction in eDRX current consumption compared to its predecessor.

BC69 boasts a comprehensive set of hardware-based security features and enables trusted applications to run directly on the Cortex A7 TrustZone engine. With an ultra-compact SMT form factor of 17.7mm × 15.8mm × 2.0mm and high integration level, it enables integrators and developers to easily design their applications and take advantage from the module's low power consumption and mechanical intensity. Its advanced LCC package allows fully automated manufacturing for high-volume applications. BC69 is compatible with Quectel LPWA modules BC66/BC66-NA/BC68 and GSM/GPRS module M66.

A rich set of Internet protocols, industry-standard interfaces (USB/UART/PCM/STATUS) and abundant functionalities (USB drivers for Windows 7/8/8.1/10, Linux and Android) extend the applicability of the module to a wide range of M2M applications such as wireless POS, smart metering, tracking, wearable devices, etc.

Key Benefits

✓ Multi-band LTE Cat M1/Cat NB2 module with ultra-low power consumption

✓ Compact SMT form factor ideal for size-constrained applications with tight space

✓ Super slim profile in LCC package

✓ Integrated RAM and flash in baseband chipset

✓ Comprehensive set of hardware-based security features

✓ Fast time-to-market: reference designs, evaluation tools and timely technical support minimize design-in time and development efforts

✓ Robust mounting and interfaces

4G LTE — LTE Cat M1 & Cat NB2	**LCC** — LCC Package	Ultra Compact Size
Embedded Abundant Protocols	**DFOTA** — DFOTA	USB 2.0 High Speed Interface
Ultra-low Power Consumption	**AT** — Quectel Enhanced AT Commands	Integrated RAM/ Flash in Chipset

Rev.: V1.0 | Status: Preliminary

Quectel BC69

Ultra-Compact
LTE Cat M1/Cat NB2 Module

BC69 XX QX–XXXXX
BC69XX–XX–XXXX
SN:XXXXXXXXXXXXXX
IMEI:XXXXXXXXXXXXX

17.7mm

15.8mm

2.0mm
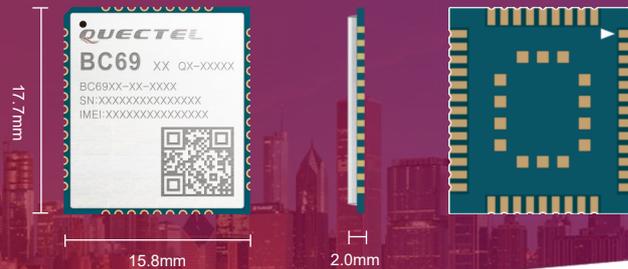
Variant for the Global

BC69*

Cat M1/Cat NB2:

LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/

B17/B18/B19/B20/B25/B26*/B27/B28/B66/

B71/B85

Data

Cat M1:

Max. 589Kbps (DL), Max. 1.12Mbps (UL)

Cat NB2:

Max. 136Kbps (DL), Max. 150Kbps (UL)

Voice*

VoLTE (For Cat M1 Only)

SMS*

Point-to-point MO and MT

SMS Cell Broadcast

Text and PDU Mode

Interfaces*

USB 2.0 × 1

UART × 3

PCM × 1

ADC × 1

GPIO × 2

(U)SIM × 1

NETLIGHT × 1 (For Network Status Indication)

LTE Antenna Interface × 1

GNSS Antenna Interface × 1

Enhanced Features

GNSS* (Optional):

GPS, GLONASS, BeiDou, Galileo

Firmware Upgrade:

via USB interface

DFOTA*:

Delta Firmware Upgrade Over-the-Air

Processor:

ARM A7 Processor

QuecLocator™*:

Support Cell ID Positioning

Electrical Characteristics

Output Power:

Max. Power: 20dBm

Consumption @LTE Cat M1 (Typical):

Power Saving Mode: 3uA

Idle State: TBD

Sleep State: TBD

LTE Connected Mode (Avg.): TBD

Consumption @LTE Cat NB2 (Typical):

Power Saving Mode: 3uA

Idle State: TBD

Sleep State: TBD

LTE Connected Mode (Avg.): TBD

Sensitivity:

TBD

Software Features

USB Serial Driver*:

Windows 7/8/8.1/10, Windows CE 5.0/6.0/7.0*,

Linux 2.6/3.x/4.1~4.14,

Android 4.x/5.x/6.x/7.x/8.x/9.x

RIL Driver*: Android 4.x/5.x/6.x/7.x/8.x/9.x

ECM Driver*: Linux 2.6/3.x/4.1~4.14

Gobinet Driver*: Linux 2.6/3.x/4.1~4.14

QMI_WWAN Driver*:

Linux 3.x(3.4 or later)/4.1~4.14

Protocols*:

PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/

PING/MQTT/CoAP

General Features

3GPP E-UTRA Release 14

Temperature Range: -40°C ~ +85°C

Dimensions: 17.7mm × 15.8mm × 2.0mm

LCC Package

Supply Voltage: 2.4V~4.8V, 3.8V Typ.

3GPP TS27.007, 3GPP TS 27.005 and Quectel

Enhanced AT Commands

Approvals*

Carrier:

Vodafone (Global)

Deutsche Telekom/Telefónica (Europe)

Verizon/AT&T/T-Mobile/Sprint (North America)

Rogers/Bell/Telus (Canada)

KT/SKT/LGU+ (South Korea)

NTT DOCOMO/SoftBank/KDDI (Japan)

Telstra (Australia)

Regulatory:

GCF (Global)

CE (Europe)

FCC/PTCRB (North America)

IC (Canada)

IFETEL (Mexico)

CCC (China)

KC (South Korea)

NCC (Taiwan)

JATE/TELEC (Japan)

RCM (Australia)

NBTC (Thailand)

IMDA (Singapore)

Others:

RoHS Compliant

* Under Development

QUECTEL®