

Quectel BG96

LTE Cat.M1 & Cat.NB1 & EGPRS Module



BG96 is a series of LTE Cat.M1/Cat.NB1/EGPRS module offering a maximum data rate of 375kbps downlink and uplink. It features ultra-low power consumption, and provides pin-to-pin compatibility with Quectel LTE module EG91/EG95, Cat.NB1 (NB-IoT) module BC95, UMTS/HSPA module UG95/UG96 and GSM/GPRS module M95.

With a cost-effective SMT form factor of 22.5mm × 26.5mm × 2.3mm and high integration level, BG96 enables integrators and developers to easily design their applications and take advantage from the module's low power consumption and mechanical intensity. Its advanced LGA package allows fully automated manufacturing for high-volume applications.

A rich set of Internet protocols, industry-standard interfaces (USB/UART/I2C/Status Indicator) and abundant functionalities (USB drivers for Windows XP, Windows Vista, 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, etc.



Key Benefits

- ✓ LTE Cat.M1/Cat.NB1/EGPRS module with ultra-low power consumption
- ✓ Compact SMT form factor ideal for size-constrained applications with tight space
- ✓ Easy drop-in migration to GSM/GPRS/HSPA/LTE modules
- ✓ Super slim profile in LGA package
- ✓ Fast time-to-market: reference designs, evaluation tools and timely technical support minimize design-in time and development efforts
- ✓ Robust mounting and interfaces



LTE Cat.M1 & Cat.NB1 & EGPRS



LGA Package



Compact Size



Embedded Abundant Protocols



DFOTA



USB 2.0 High Speed Interface



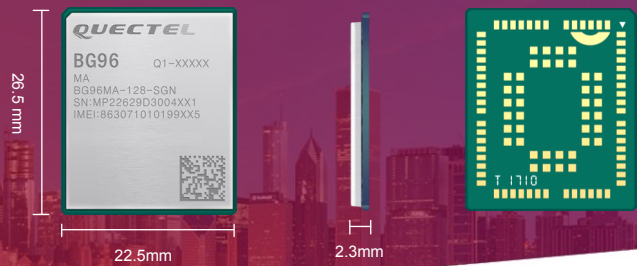
USB Drivers



Quectel Enhanced AT Commands

Quectel BG96

LTE Cat.M1 & Cat.NB1 & EGPRS Module



Variant for North America

BG96-NA

Cat.M1/Cat.NB1:

LTE FDD: B2/B4/B12/B13

Variant for the Global

BG96

Cat.M1/Cat.NB1:

LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/

B19/B20/B26/B28

LTE TDD: B39 (For Cat.M1 Only)

EGPRS:

850/900/1800/1900MHz

Data

Cat.M1:

Max. 375Kbps (DL), Max. 375Kbps (UL)

Cat.NB1:

Max. 32Kbps (DL), Max. 70Kbps (UL)

GPRS:

Max. 107Kbps (DL), Max. 85.6Kbps (UL)

EDGE:

Max. 296Kbps (DL), Max. 236.8Kbps (UL)

Voice

VoLTE (For Cat. M1 Only. Support Realtek ALC

5616 Codec by Default Firmware)

SMS

Point-to-point MO and MT

SMS Cell Broadcast

Text and PDU Mode

Interfaces

USB 2.0 with High Speed up to 480Mbps

UART x 3

PCM

ADC x 2 (15 bits)

GPIO x 2 (I2C and UART3 can be re-configured as

extra 4 GPIOs)

(U)SIM Interface

NETLIGHT for Network Status Indication

STATUS for Power ON/OFF Indication

Main and GNSS Antenna Interfaces

Enhanced Features

GNSS (Optional):

GPS, GLONASS, BeiDou/Compass, Galileo, QZSS

Firmware Upgrade:

via USB interface

DFOTA:

Delta Firmware Upgrade Over the Air

Electrical Characteristics

Output Power:

Max. Power: 23dBm

Consumption (Typical):

LTE Cat.M1 Mode:

Power Saving Mode: 10.4uA

Standby State: 1.99mA @DRX=1.28s

LTE Connected Mode:

124mA @0dBm

136mA @12dBm

190mA @23dBm

LTE Cat. NB1 Mode:

Power Saving Mode: 9.8uA

Standby State: 2.77mA @e-I-DRX=20.48s

LTE Connected Mode: TBD

Sensitivity:

-107dBm @Cat.M1, 1.4MHz Bandwidth, CE

Mode A

-117dBm @Cat.NB1, CE Level 0

Software Features

USB Driver:

Windows XP, Windows Vista,

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

Linux 2.6/3.x/4.1, Android 4.x/5.x/6.0

RIL Driver: Android 4.x/5.x/6.0

NDIS Driver: Windows 7/8/8.1/10

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

Gobinet Driver: Linux 2.6/3.x/4.1

QMI_WWAN Driver: Linux 3.x(3.4 or later)/4.1

Protocols: PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)

General Features

3GPP E-UTRA Release 13

Temperature Range: -40°C ~ +85°C

Dimensions: 22.5mm x 26.5mm x 2.3mm

Approx. 3.1g

LGA Package

Supply Voltage: 3.3V~4.3V, 3.8V Typ.

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

Enhanced AT Commands

Approvals

CE*/GCF* (Europe)

FCC/PTCRB*/AT&T*/ Verizon* (North America)

RCM*/Telstra* (Australia)

BELL*/IC* (Canada)

* Under Development