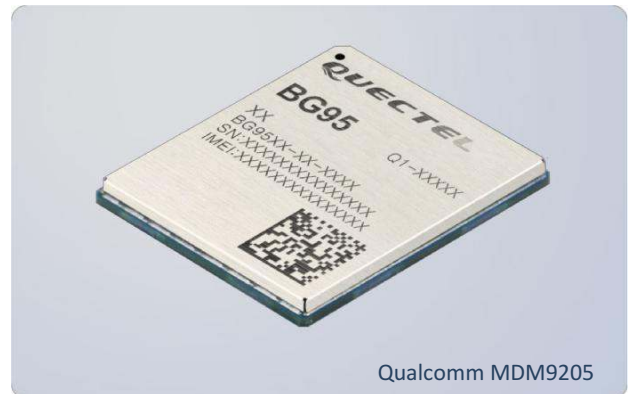




Quectel BG95

LTE Cat M1 & Cat NB2 & EGPRS Module



Qualcomm MDM9205

BG95 is a series of multi-mode LTE Cat M1/Cat NB2/EGPRS module with integrated GNSS functionality. It is fully compliant with 3GPP Rel. 14 specification and offers a maximum data rate of 375Kbps downlink and 1.2Mbps 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.

BG95 boasts a comprehensive set of hardware-based security features and enables trusted applications to run directly on the Cortex A7 TrustZone engine. As well, BG95 provides pin-to-pin compatibility with Quectel LTE module EG91/EG95, LPWA module BG96 & BC95, UMTS/HSPA module UG95/UG96 and GSM/GPRS module M95.

With a cost-effective SMT form factor of 23.6mm × 19.9mm × 2.3mm and high integration level, BG95 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) 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

- ✓ LTE Cat M1/Cat NB2/EGPRS module with ultra-low power consumption
- ✓ Compact SMT form factor ideal for size-constrained applications with tight space
- ✓ Easy migration from Quectel GSM/GPRS, UMTS/HSPA and LTE modules
- ✓ Super slim profile in LGA package
- ✓ Integrated RAM and Flash in the 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



LTE Cat M1 & Cat NB2& EGPRS



LGA Package



Compact Size



Embedded Abundant Protocols



DFOTA



USB 2.0 High Speed Interface



Ultra-low Power Consumption



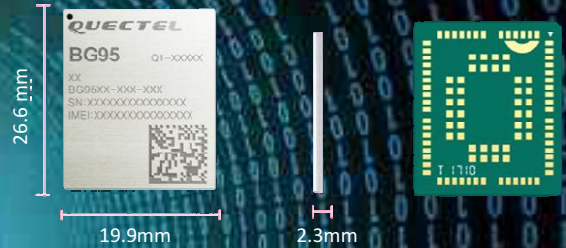
Quectel Enhanced AT Commands



Integrated RAM/Flash in Chipset

Quectel BG95

LTE Cat M1 & Cat NB2 & EGRPS Module



Variants for the Global

BG95-M2

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

BG95-M3

Cat M1/Cat NB2:

LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/
B17/B18/B19/B20/B25/B26*/B27/B28/B31*/
B66/B71

EGRPS:

850/900/1800/1900MHz

BG95-M1

Cat M1 Only:

LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/
B17/B18/B19/B20/B25/B26*/B27/B28/B66/B71

BG95-N1

Cat NB2 Only:

LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/
B17/B18/B19/B20/B25/B26*/B27/B28/B66/B71

BG95-MF

Cat M1/Cat NB2/Wi-Fi:

LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/
B17/B18/B19/B20/B25/B26*/B27/B28/B66/B71
Wi-Fi (For Positioning Only) 2.4GHz/5GHz

Data

Cat M1:

Max. 375Kbps (DL), Max. 1.2Mbps (UL)

Cat NB2:

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

EDGE:

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

GPRS:

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

Voice*

VoLTE (For Cat M1 Only)

CS Voice for GSM

SMS *

Point-to-point MO and MT

SMS Cell Broadcast

Text and PDU Mode

Requests for documentations, evaluation kits, antenna design in, antenna matching, antenna consulting, seminars and workshops are welcome to h.naumann (at) tekmodul.de

tekmodul GmbH - Lindwurmstraße 97a - D-80337 München - www.tekmodul.de

Interfaces

USB 2.0 × 1 (With High Speed up to 480Mbps)

UART × 3

PCM × 1

ADC × 2 (15 bits)

GPIO × 2 (I2C and UART3 Can be Re-configured as Extra 4 GPIOs)

(U)SIM × 1

NETLIGHT × 1 (For Network Status Indication)

STATUS × 1 (For Power ON/OFF Indication)

Main and GNSS Antenna Interfaces

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™*:

Supports Cell ID, Wi-Fi and Hybrid (Cell ID+Wi-Fi)

Positioning Functions

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

RIL Driver*: Android 4.x/5.x/6.x/7.x/8.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: 23.6mm × 19.9mm × 2.3mm

Approx. 2.5g

LGA Package

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

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

Enhanced AT Commands

Approvals

RoHS Compliant

GCF* (Global)

CE* (Europe)

AT&T*/FCC*/PTCRB*/Verizon*/T-Mobile*/

Sprint* (North America)

RCM*/Telstra* (Australia)

IC*/Telus*/Bell* (Canada)

JATE*/KDDI*/SoftBank*/TELEC*/NTT DOCOMO*

(Japan)

KC*/SKT*/LGU+* (Korea)

IFETEL* (Mexico)

IMDA* (Singapore)

NCC* (Taiwan)

CCC* (China)

* Under Development

