**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 375Kbps 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 26.5mm × 22.5mm × 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 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.
**Variants for the Global**

**BG96**
- **Cat M1/Cat NB1:**
  - LTE TDD: B39 (For Cat M1 Only)
- **EGPRS:**
  - 850/900/1800/1900MHz

**BG96-M**
- **Cat M1:**
  - LTE TDD: B39

**Data**
- **Cat M1:**
  - Max. 375Kbps (DL), Max. 375Kbps (UL)
- **Cat NB1:**
  - Max. 32Kbps (DL), Max. 70Kbps (UL)
- **EDGE:**
  - Max. 296Kbps (DL), Max. 236.8Kbps (UL)
- **GPRS:**
  - Max. 107Kbps (DL), Max. 85.6Kbps (UL)

**Voice**
- VoLTE (For Cat M1 Only. Support Realtek ALC 5616
  /NAU8814 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 x 1
- ADC x 2 (15 bits)
- GPIO x 2 (I2C and UART3 can be re-configured as extra 4 GPIOs)
  (U)SIM Interface x 1
- NETLIGHT for Network Status Indication

**Enhanced Features**
- **GNSS (Optional):**
  - GPS, GLONASS, BeiDou/Compass, Galileo, QZSS
- **Firmware Upgrade:**
  - via USB interface
- **DFOTA:**
  - Delta Firmware Upgrade Over the Air
- **Processor:**
  - ARM A7 Processor, with 3MB Flash and 3MB RAM Available for Users

**Electrical Characteristics**
- **Output Power:**
  - Max. Power: 23dBm
- **Power Saving Mode:**
  - 10μA
- **Idle State:**
  - 15mA @ eDRX=20.48s
  - 1.1mA @ eDRX=20.48s
- **Sleep State:**
  - 2.3mA @ eDRX=20.48s
  - 1.7mA @ eDRX=20.48s
- **LTE Connected Mode (Avg.):**
  - 65mA @ 0dBm
  - 66mA @ 10dBm
  - 78mA @ 23dBm

**Sensitivity:**
- -107dBm @ Cat M1, 1.4MHz Bandwidth, CE Mode A
- -113dBm @ Cat NB1, CE Level 0

**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
- **RIL Driver:**
  - Android 4.x/5.x/6.x/7.x
- **NDIS Driver:**
  - Windows 7/8/8.1/10
- **ECM Driver*:**
  - Linux 2.6/3.x/4.1~4.14
- **Gobinet Driver:**
  - Linux 3.x(3.4 or later)/4.1~4.14
- **QMI WWINAN Driver:**
  - Linux 3.x
- **Protocols:**
  - PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT

**General Features**
- 3GPP E-UTRA Release 13
- Temperature Range: -40°C ~ +85°C
- Dimensions: 26.5mm x 22.5mm 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/Deutsche Telekom (Europe)
- FCC/PTCRB/Verizon/AT&T/T-Mobile*/Sprint* (North America)
- RCM/Telestra (Australia)
- Telefonica* (Spain)
- IFETEL (Mexico)
- IC/BELL*/Telus (Canada)
- JATE/TELEC/KDDI/SoftBank* (Japan)
- KCS/SKT* (Korea)
- IMDA (Singapore)
- CCC (China)
- * Under Development

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