BG95 is a series of multi-mode LPWA modules supporting LTE Cat M1/Cat NB2/EGPRS and integrated GNSS. It is 3GPP Rel-14 compliant and offers maximum data rates of 588 kbps downlink and 1119 kbps uplink under LTE Cat M1. 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. Additionally, BG95 provides pin-to-pin compatibility with Quectel LTE Cat 4 modules EG91/EG95, LTE Cat M1/Cat NB1/EGPRS module BG96, NB-IoT module BC95-G, UMTS/HSPA modules UG95/UG96 and GSM/GPRS module M95.

With a cost-effective SMT form factor of 23.6 mm × 19.9 mm × 2.2 mm 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 and abundant functions extend the applicability of the module to a wide range of M2M applications such as wireless POS, smart metering, tracking, wearable devices, etc.

**Key Features**

- LTE Cat M1/Cat NB2/EGPRS module with ultra-low power consumption
- Easy migration from Quectel GSM/GPRS, UMTS/HSPA and LTE modules
- Integrated RAM and flash in the baseband chipset
- Comprehensive set of hardware-based security features
- Support VoLTE (Cat M1 only), CS voice for GSM, QuecOpen®, eSIM, etc.
- Fast time-to-market: reference designs, evaluation tools and timely technical support minimize design-in time and development efforts
- Compact SMT form factor ideal for size-constrained applications with tight space
- Robust mounting and interfaces
### Quectel BG95 Series

#### Region/Operator

- For the Global
- For the Global
- For the Global
- For the Global
- For the Global
- For the Global

#### Dimensions (mm)

- 23.6 × 19.9 × 2.2
- 23.6 × 19.9 × 2.2
- 23.6 × 19.9 × 2.2
- 23.6 × 19.9 × 2.2
- 23.6 × 19.9 × 2.2
- 23.6 × 19.9 × 2.2

#### Temperature Range

- -35 °C to +75 °C
- -35 °C to +75 °C
- -35 °C to +75 °C
- -35 °C to +75 °C
- -35 °C to +75 °C
- -35 °C to +75 °C

#### Extended Temperature

- 40 °C to +85 °C
- 40 °C to +85 °C
- 40 °C to +85 °C
- 40 °C to +85 °C
- 40 °C to +85 °C
- 40 °C to +85 °C

#### Frequency Bands

- **LTE**
  - CAT-M1 Only: B31/B72/B73 for BG95
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85
  - CAT-M1: B31/B33/B36/B38/B72/B73/B85/B90/B19/B25/B26/B27/B28/B66/B85

- **LPWA Module**
  - Cat NB1
  - Cat NB2
  - Cat NB3
  - Cat NB4
  - Cat NB5
  - Cat NB6
  - Cat NB7

#### Wi-Fi (for Positioning)

- 2.4 GHz

#### Data Transmission

- **LTE-M Data Rate (kbps)**
  - CAT-M1: Max. 260 (DL)
  - CAT-M1: Max. 588 (UL)
  - CAT-M1: Max. 588 (UL)
  - CAT-M1: Max. 588 (UL)
  - CAT-M1: Max. 588 (UL)
  - CAT-M1: Max. 588 (UL)
  - CAT-M1: Max. 1139 (UL)

- **NB-IoT Data Rate (kbps)**
  - Max. 107 (DL)
  - Max. 107 (DL)
  - Max. 107 (DL)
  - Max. 107 (DL)

- **GPRS Data Rate (kbps)**
  - Max. 107 (DL)
  - Max. 107 (DL)

#### Interfaces

- **(USIM)**
  - 1 (1.8 V only)
  - 1 (1.8 V only)
  - 1 (1.8 V only)
  - 1 (3.3 V only)
  - 1 (1.8 V only)
  - 1 (3.3 V only)
  - 1 (3.3 V only)

- **UART**
  - 3
  - 3
  - 3

- **USB 2.0**
  - 1
  - 1
  - 1

- **PCMCIA**
  - 1 (for VolTE Only)
  - 1 (for VolTE Only)

- **ICCID**
  - 8

- **Antenna**
  - 2
  - 2
  - 2

- **GPI**
  - 0

- **GRFC**
  - 2

- **Voice**
  - 3

- **SMS**
  - 3

#### Enhanced Features

- **DOFOTA**
  -

- **QoE Open**
  -

- **QoE Locator**
  -

- **SoT**
  -

#### IoT Platform Access

- AWS

---

**NOTE:**

2. **LTE-IO: D1/D3/D7/D3** for BG95-M5 supports Power Class 2 (26 dBm), and other LTE bands supports Power Class 3 (31 dBm).
3. "*" means supported.
4. "**" means under development/on-going/planning.

---

**Copyright © 2022 Quectel Wireless Solutions Co., Ltd. All Rights Reserved http://www.quectel.com**

**HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tanxin Road, Minhang District, Shanghai, China 200233**

**Tel: +86 21 51086236**

**Email: info@quectel.com**
## Bluetooth

<table>
<thead>
<tr>
<th>Protocol</th>
<th>BG95-M1</th>
<th>BG95-M2</th>
<th>BG95-M3</th>
<th>BG95-M4</th>
<th>BG95-M5</th>
<th>BG95-M6</th>
<th>BG95-M7</th>
<th>BG95-M8</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB Serial Driver</td>
<td>Windows 7/8/10/11, Linux 2.6-5.1, Android 4-12.x</td>
<td>Windows 7/8/10/11, Linux 2.6-5.1, Android 4-12.x</td>
<td>Windows 7/8/10/11, Linux 2.6-5.1, Android 4-12.x</td>
<td>Windows 7/8/10/11, Linux 2.6-5.1, Android 4-12.x</td>
<td>Windows 7/8/10/11, Linux 2.6-5.1, Android 4-12.x</td>
<td>Windows 7/8/10/11, Linux 2.6-5.1, Android 4-12.x</td>
<td>Windows 7/8/10/11, Linux 2.6-5.1, Android 4-12.x</td>
<td></td>
</tr>
</tbody>
</table>

## GNSS/RF Driver

<table>
<thead>
<tr>
<th>Power Consumption</th>
<th>Android 4-12.x</th>
<th>Android 4-12.x</th>
<th>Android 4-12.x</th>
<th>Android 4-12.x</th>
<th>Android 4-12.x</th>
<th>Android 4-12.x</th>
<th>Android 4-12.x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>RoHS</td>
<td>RoHS/ATEX</td>
<td>RoHS/FP</td>
<td>RoHS</td>
<td>RoHS</td>
<td>RoHS</td>
<td>RoHS</td>
</tr>
</tbody>
</table>

## Power Consumption

<table>
<thead>
<tr>
<th>Power Consumption</th>
<th>@ FPM (mA)</th>
<th>@ LTD Cat M1 (mA)</th>
<th>@ LTE Cat NB1 (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep Mode</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Power Mode</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

CAUTION: 1. Please refer to the hardware design manual for more specific requirements on the power supply voltage. 2. α means under development/going/planning. 3. © means supported.