

# Quectel EG91

## IoT/M2M-optimized LTE Cat 1 Module



Quectel EG91 is a series of LTE category 1 module optimized specially for M2M and IoT applications. It features cost-effective and low power LTE connectivity, and delivers M2M-optimized speeds of 10Mbit/s downlink and 5Mbit/s uplink. These make EG91 an ideal solution for numerous IoT applications that are not reliant on high speed connectivity but still require the longevity and reliability of LTE networks.

EG91 is fallback pin-to-pin compatible with Quectel UMTS/HSPA+ UG95/UG96 and Cat M1/Cat NB1 BG96 modules. This makes it backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can easily migrate from 2G/3G to 4G networks.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB drivers for Windows XP, Windows 7/8/10, Linux, Android) extend the applicability of the module to a wide range of M2M and IoT applications such as smart metering, wearable devices, environmental monitoring, asset tracking, fleet management, security and alarm systems, and so on.



### Key Benefits

- ✓ Cost-effective and low-power LTE connectivity optimized for broadband IoT applications
- ✓ Multi-band LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ✓ Compact SMT form factor ideal for size-constrained applications with extended operation temperature range
- ✓ Embedded power management unit (PMU) featuring ultra-low deep-sleep current consumption
- ✓ Simple migration from 2G/3G to 4G with a flexible and scalable platform



LTE Cat 1  
Max 10Mbps (DL)  
Max 5Mbps (UL)



Max 42Mbps (DL)  
Max 5.76Mbps (UL)



LGA Package



Embedded Abundant Protocols



eCall



Compact Size



USB 2.0 High Speed Interface



USB Drivers



Quectel Enhanced AT Commands

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## IoT/M2M-optimized LTE Cat 1 Module



### Variant for Europe

#### EG91-E:

LTE FDD: B1/B3/B7/B8/B20/B28A\*

WCDMA: B1/B8

GSM: 900/1800MHz

### Data

#### LTE:

LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL)

#### UMTS:

DC-HSDPA: Max 42Mbps (DL)

HSUPA: Max 5.76Mbps (UL)

WCDMA: Max 384Kbps (DL)/Max 384Kbps (UL)

#### GSM:

EDGE: Max 296Kbps (DL)/Max 236.8Kbps (UL)

GPRS: Max 107Kbps (DL)/Max 85.6Kbps (UL)

### Voice

#### Speech Codec Modes:

HR/FR/EFR/AMR/AMR-WB

#### Echo Arithmetic:

Echo Cancellation/Noise Reduction

#### VoLTE:

Digital Audio and VoLTE (Voice over LTE)

(Optional)

### Interfaces

USB 2.0 with High Speed up to 480Mbps

Digital Audio through PCM (Optional)

1.8V/3.0V (U)SIM Interface × 2

NETLIGHT × 1

UART × 2 (Main UART and Debug UART)

RESET

PWRKEY

Main and Rx-diversity Antenna Interfaces

ADC × 1

### Enhanced Features

eCall

DFOTA\*: Delta Firmware Upgrade over the Air

(U)SIM Card Detection

### Electrical Characteristics

#### Output Power:

Class 3 (23dBm±2dB) for LTE FDD

Class 3 (24dBm+1/-3dB) for WCDMA

Class E2 (27dBm±3dB) for EDGE 900MHz

Class E2 (26dBm+3/-4dB) for EDGE 1800MHz

Class 4 (33dBm±2dB) for GSM 900MHz

Class 1 (30dBm±2dB) for GSM 1800MHz

#### Consumption:

15uA @Power off

2.6mA @Sleep, Typ.

21mA @Idle

#### Sensitivity:

LTE FDD B1: -98.5dBm (10M)

LTE FDD B3: -98.4dBm (10M)

LTE FDD B7: -97.2dBm (10M)

LTE FDD B8: -97.5dBm (10M)

LTE FDD B20: -97.3dBm (10M)

WCDMA B1: -110.5dBm (10M)

WCDMA B8: -110.4dBm (10M)

GSM: -109.4dBm

DCS: -110dBm

### 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/6.0/7.0

#### 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

#### Linux qmi wwan Driver:

3.x (3.4 or later)/4.1

#### Protocols:

TCP/UDP/PPP/FTP/HTTP\*/SMTP\*/MMS/NTP/

PING/DTMF\*/FILE\*/CMUX/QMI

### General Features

3GPP E-UTRA Release 11

Bandwidth: 1.4/3/5/10/15/20MHz

Rx-diversity Antenna

Temperature Range: -40°C ~ +85°C

Dimensions: 25.0mm x 29.0mm x 2.3mm

LGA Package

Approx. 3.8g

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

3GPP TS27.007 and Enhanced AT Commands

\* Under Development