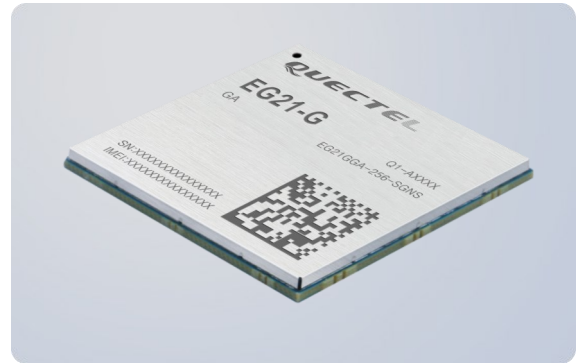


# Quectel EG21-G

## IoT/M2M-optimized LTE Cat 1 Module



Quectel EG21-G is an LTE Cat 1 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel.11 LTE technology, it delivers maximum data rates up to 10Mbps downlink and 5Mbps uplink. Designed in the compact and unified form factor, EG21-G is compatible with Quectel UMTS/HSPA+ UC20/UC200T modules and multi-mode LTE Standard EC2x (EC25, EC21, EC20 R2.0 and EC20 R2.1)/EG25-G modules, which allows for flexible migration among them in design and use.

EG21-G is backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 4G or 3G coverage.

EG21-G supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou/Compass, Galileo and QZSS). The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB serial drivers for Windows 7/8/8.1/10, Linux, Android/eCall\*) 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

- ✓ LTE Cat 1 module optimized for M2M and IoT applications
- ✓ Worldwide LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✓ Feature refinements: supports DFOTA, eCall\* and DTMF\*
- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems



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



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



LGA Package



Embedded Abundant  
Protocols



eCall\*



Multi-constellation  
GNSS



USB 2.0 High Speed  
Interface



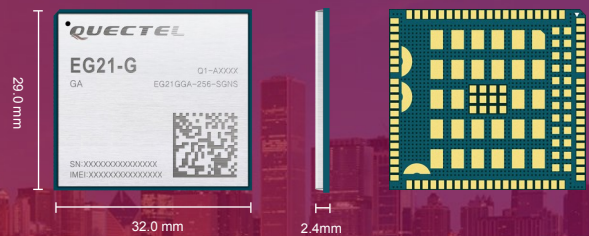
USB Drivers



Quectel Enhanced  
AT Commands

# Quectel EG21-G

## IoT/M2M-optimized LTE Cat 1 Module



### Frequency Bands

#### EG21-G:

LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/  
B19/B20/B25/B26/B28  
LTE-TDD: B38/B39/B40/B41  
WCDMA: B1/B2/B4/B5/B6/B8/B19  
GSM: B2/B3/B5/B8

### Data

#### LTE:

LTE-FDD: Max 10Mbps (DL)/Max 5Mbps (UL)  
LTE-TDD: Max 8.96Mbps (DL)/Max 3.1Mbps (UL)

#### UMTS:

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 Suppression

#### Audio:

Digital Audio and VoLTE (Voice over LTE)  
(Optional)

### Interfaces

UART x 2 : Main UART and Debug UART  
USB x 1: USB 2.0 with High Speed up to 480Mbps  
(U)SIM x 1: 1.8V/3.0V (U)SIM Interface  
PCM x 1: Digital Audio through PCM (Optional)  
I2C x 1  
NETLIGHT x 2 (NET\_STATUS and NET\_MODE)  
ADC x 2  
SD Card x 1  
SGMII x 1  
RESET (Active Low)  
PWRKEY (Active Low)  
STATUS  
USB\_BOOT  
Solder Pads for Primary, Rx-diversity and GNSS  
Antennas

### Enhanced Features

eCall\*  
DTMF\*  
Audio Playback\*/Audio Recording\*  
QuecFile\*  
QuecLocator®  
Downlink MIMO (Supports Rx-diversity antenna)  
(U)SIM Card Detection  
**DFOTA:**  
Delta Firmware Upgrade Over-The-Air  
**GNSS:**  
GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS  
(Optional)

### Electrical Characteristics

#### Output Power:

Class 4 (33dBm±2dB) for GSM850  
Class 4 (33dBm±2dB) for EGSM900  
Class 1 (30dBm±2dB) for DCS1800  
Class 1 (30dBm±2dB) for PCS1900  
Class E2 (27dBm±3dB) for GSM850 8-PSK  
Class E2 (27dBm±3dB) for EGSM900 8-PSK  
Class E2 (26dBm±3dB) for DCS1800 8-PSK  
Class E2 (26dBm±3dB) for PCS1900 8-PSK  
Class 3 (24dBm+1/-3dB) for WCDMA bands  
Class 3 (23dBm±2dB) for LTE-FDD bands  
Class 3 (23dBm±2dB) for LTE-TDD bands

#### Consumption:

20µA @Power off  
3mA @Sleep, Typ.  
22mA @Idle

#### Sensitivity:

LTE B1: -99.5dBm (10MHz)  
LTE B2: -99.9dBm (10MHz)  
LTE B3: -99.7dBm (10MHz)  
LTE B4: -99.7dBm (10MHz)  
LTE B5: -99.9dBm (10MHz)  
LTE B7: -99.2dBm (10MHz)  
LTE B8: -99.8dBm (10MHz)  
LTE B12: -99.8dBm (10MHz)  
LTE B13: -99.5dBm (10MHz)  
LTE B18: -100dBm (10MHz)  
LTE B19: -99.9dBm (10MHz)  
LTE B20: -99.8dBm (10MHz)  
LTE B25: -100dBm (10MHz)  
LTE B26: -99.5dBm (10MHz)  
LTE B28: -99.6dBm (10MHz)  
LTE B38: -99dBm (10MHz)  
LTE B39: -99.5dBm (10MHz)  
LTE B40: -99.2dBm (10MHz)  
LTE B41: -99dBm (10MHz)  
WCDMA B1: -109.2dBm  
WCDMA B2: -110dBm  
WCDMA B4: -109.7dBm  
WCDMA B5: -110.4dBm  
WCDMA B6: -110.5dBm  
WCDMA B8: -110.5dBm  
WCDMA B19: -110.1dBm  
GSM850: -108dBm  
EGSM900: -108dBm  
DCS1800: -107.5dBm  
PCS1900: -107.5dBm

### Software Features

#### USB Serial Driver:

Windows 7/8/8.1/10,  
Linux 2.6~5.4,  
Android 4.x/5.x/6.x/7.x/9.x

#### GNSS Driver:

Android 4.x/5.x/6.x/7.x/8.x/9.x

#### RIL Driver:

Android 4.x/5.x/6.x/7.x/8.x/9.x

#### NDIS Driver:

Windows 7/8/8.1/10

### GobiNet Driver:

Linux 2.6~5.4

### QMI\_WWAN Driver:

Linux 2.6~5.4

### Protocols:

TCP/UDP/PPP/FTP/HTTP/NTP/PING/QMI/NITZ/  
SMTP/MQTT/CMUX/HTTPS/FTPS/SMTPTS/SSL/  
MMS\*/FILE\*

### General Features

Operation Temperature Range: -35°C ~ +75°C  
Extended Temperature Range: -40°C ~ +85°C  
Dimensions: 29.0mm x 32.0mm x 2.4mm  
Weight: Approx. 4.9g  
LGA Package  
Supply Voltage: 3.3V~4.3V, 3.8V Typ.  
3GPP E-UTRA Release 11  
Bandwidth: 1.4/3/5/10/15/20MHz  
3GPP TS27.007, 27.005 and Enhanced AT  
Commands

### Approvals

#### Carrier:

Deutsche Telekom (Europe)  
Verizon\*/AT&T\*/T-Mobile\*/Sprint\* (North  
America)

#### Regulatory:

GCF (Global)  
CE (Europe)  
FCC/PTCRB (North America)  
IC (Canada)  
Anatel (Brazil)  
IFETEL (Mexico)  
KC\* (South Korea)  
NCC (Taiwan, China)  
JATE/TELEC (Japan)  
RCM (Australia)  
ICASA\* (South Africa)

#### Others:

RoHS  
WHQL

\* Under Development