

# Quectel EG21-G Mini PCIe

IoT/M2M-optimized  
LTE Cat 1 Module



Quectel EG21-G Mini PCIe is an LTE Cat 1 module adopting standard PCI Express® Mini Card form factor (Mini PCIe). It is optimized specially for M2M and IoT applications, and delivers maximum data rates up to 10Mbps downlink and 5Mbps uplink.

EG21-G Mini PCIe 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 Mini PCIe 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 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 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 broadband IoT applications
- ✓ Worldwide LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage
- ✓ Standard PCI Express® Mini Card form factor (Mini PCIe) ideal for manufacturers to easily integrate wireless connectivity into their devices
- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment



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



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



Mini PCIe Package



Embedded Abundant Protocols



eCall\*



Multi-constellation GNSS



USB 2.0 High Speed Interface



USB Drivers

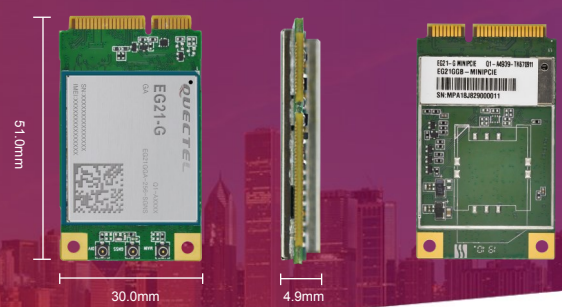


Quectel Enhanced AT Commands

# Quectel

## EG21-G Mini PCIe

### IoT/M2M-optimized LTE Cat 1 Module



#### Frequency Bands

##### EG21-G Mini PCIe:

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

USB x 1: USB 2.0 with High Speed up to 480Mbps

PCM x 1: Digital Audio through PCM (Optional)

I2C x 1

(U)SIM x 1: 1.8V/3.0V (U)SIM Interface

UART x 1: Main UART

LED\_WWAN# for Network Status Indication

W\_DISABLE# for Disabling RF Function

PERST# for Module Resetting

Main, Rx-diversity and GNSS Antenna Connectors

#### Enhanced Features

eCall\*

DTMF\*

QuecLocator®

Downlink MIMO (Supports Rx-diversity Antenna)

##### DFOTA:

Delta Firmware Upgrade Over-The-Air

##### GNSS:

GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS

(Optional)

#### Electrical Characteristics

##### Output Power:

Class 3 (23dBm±2dB) for LTE-FDD bands

Class 3 (23dBm±2dB) for LTE-TDD bands

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

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 4 (33dBm±2dB) for GSM850

Class 4 (33dBm±2dB) for EGSM900

Class 1 (30dBm±2dB) for DCS1800

Class 1 (30dBm±2dB) for PCS1900

##### Consumption:

3.6mA @Sleep, Typ.

35mA @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: -98dBm (10MHz)

LTE B39: -99.5dBm (10MHz)

LTE B40: -99.2dBm (10MHz)

LTE B41: -97.5dBm (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

#### MBIM Driver:

Windows 8/8.1/10, Linux 3.18~5.4

#### GobiNet Driver:

Linux 2.6~5.4

#### QMI\_WWAN Driver:

Linux 3.4~5.4

#### Protocols:

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

#### General Features

Operation Temperature Range: -35°C ~ +75°C

Extended Temperature Range: -40°C ~ +80°C

Dimensions: 51.0mm x 30.0mm x 4.9mm

Weight: Approx. 9.8g

Mini PCIe Package

Supply Voltage: 3.0V~3.6V, 3.3V Typ.

3GPP E-UTRA Release 11

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

3GPP TS27.007 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