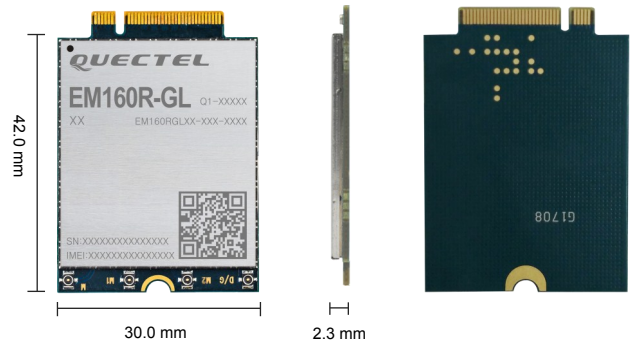


# Quectel EM160R-GL

## LTE-A Cat 16 M.2 Module



Quectel EM160R-GL is an LTE Advanced Category 16 module. Adopting the 3GPP Release 14 technology, it delivers speed of 1.0 Gbps downlink and 150 Mbps uplink peak data rates, and is designed in M.2 form factor.

EM160R-GL is designed for global market and nearly covers all the mainstream carriers worldwide.

EM160R-GL supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou and Galileo). The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning capability.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (PCIe interface/USB drivers for Windows, Linux, Android/eCall) extend the applicability of the module to a wide range of applications such as industrial router, home gateway, STB, industrial laptop, consumer laptop, industrial PDA, rugged tablet PC, video surveillance and digital signage, etc.



### Key Benefits

- ✓ LTE-A Cat 16 module with M.2 form factor
- ✓ Support DL 5x carrier aggregation and 256QAM
- ✓ Worldwide LTE-A and UMTS/HSPA+ coverage
- ✓ Support PCIe standard interface for PC/Laptop application
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems



LTE Cat 16  
Max. 1.0 Gbps (DL)  
Max. 150 Mbps (UL)



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



M.2 Form Factor



Embedded Abundant Protocols



PCIe standard interface



Multi-constellation GNSS



USB 2.0/3.0 High Speed Interface



Quectel Enhanced AT Commands

# Quectel EM160R-GL

## LTE-A Cat 16 M.2 Module

### For Global

#### EM160R-GL

LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/  
B17/B18/B19/B20/B25/B26/B28/B29<sup>①</sup>/B30/

B32<sup>①</sup>/B66;

LTE-TDD: B38/39/B40/B41/B42/B43/B46<sup>①</sup>(LAA)/  
B48(CBRS)

WCDMA: B1/B2/B3/B5/B6/B8/B19

Support up to DL 5 x CA

LTE DL 4 x 4 MIMO Band

LTE-FDD: B1/B2/B3/B4/B7/B25/B30/B66

LTE-TDD: B38/B39/B40/B41

### Data

#### LTE:

LTE-FDD (Max): 1.0 Gbps (DL), 150 Mbps (UL)

LTE-TDD (Max): 880 Mbps (DL), 90 Mbps (UL)

#### UMTS:

DC-HSDPA (Max): 42 Mbps (DL)

HSUPA (Max): 5.76 Mbps (UL)

WCDMA (Max): 384 kbps (DL), 384 kbps (UL)

### SMS

Point-to-point MO and MT

SMS Cell Broadcast

Text and PDU Mode

### Interfaces

PCIe standard Interface

USB 2.0/3.0, Supports Slave Mode

PCM × 1

(U)SIM Interface × 2: 1.8/3.0 V

ANTCTL × 4

MIPI interface

W\_DISABLE1#: Control Airplane Mode

RESET#: Reset the Module

WAKE\_ON\_WAN#: Wake up the Host

WWAN\_LED#: Indicate Network Status

Main, MIMOx2, Div & GNSS Antenna Interfaces

### Enhanced Features

MIMO: 4 × 4, 2 × 4, 2 × 2 DL

eCall: Emergency Service\*

(U)SIM Card Detection

Build-in eSIM

DFOTA: Delta Firmware over the Air

GNSS: GPS/GLONASS/BeiDou/Galileo

### Electrical Characteristics

#### Output Power:

Class 3 (23 dBm ±2 dB) for LTE-FDD

Class 3 (23 dBm ±2 dB) for LTE-TDD

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

#### Consumption:

TBD @ Power off

TBD @ Sleep, Typ.

TBD @ Idle

### Software Features

MBIM Driver: Windows 10

USB Serial Driver: Windows 7/8/8.1/10, Linux  
2.6/3.x/4.x/5.x, 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

ECM Driver\*: Linux 2.6/3.x/4.x/5.x

Gobinet Driver: Linux 2.6/3.x/4.x/5.x

QMI\_WWAN Driver: Linux 3.x (3.4 or later)/  
4.x/5.x

#### Protocols:

PPP/QMI/NTP\*/TCP\*/UDP\*/FTP\*/HTTP\*/

PING\*/HTTPS\*/SMTP\*/MMS\*/FTPS\*/SMTPS\*/

SSL\*

### General Features

3GPP E-UTRA Release 14

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

Supply Voltage: 3.1–4.4 V, typ. 3.7 V

M.2 Package

3GPP TS27.007 and Quectel Enhanced AT

Commands

Dimensions: 42.0 mm × 30.0 mm × 2.3 mm

#### Temperature Range:

Operating temperature Range:

-25 to +75 °C

Extended Temperature Range:

-40 to +85 °C

### Approvals

Carrier:

TBD

Regulatory\*:

CE/FCC/CCC

GCF/PTCRB

Others\*:

WHQL

\* under development

TBD: To be determined

<sup>①</sup> For secondary component carrier only