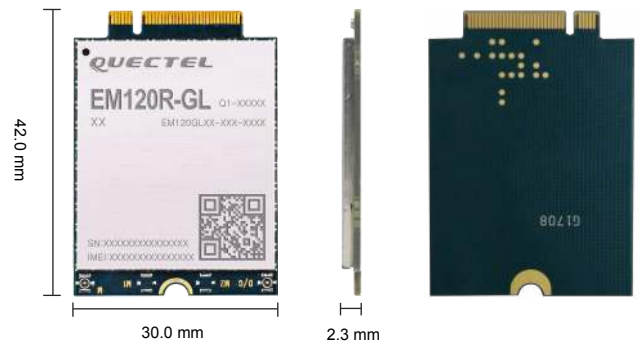


Quectel EM120R-GL

LTE-A Cat 12 M.2 Module



Quectel EM120R-GL is an LTE Advanced Category 12 module. Adopting the 3GPP Release 14 technology, it delivers speed of 600 Mbps downlink and 150 Mbps uplink peak data rates, and is designed in M.2 form factor.

EM120R-GL is designed for global market and nearly covers all the mainstream carriers worldwide.

EM120R-GL supports Qualcomm® IZat™ location technology Gen9 (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/Build-in eSIM (optional)) 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, and digital signage, etc.



Key Benefits

- ✓ LTE-A Cat 12 module with M.2 form factor
- ✓ Support DL 3 × carrier aggregation and 256QAM
- ✓ Worldwide LTE-A and UMTS/HSPA+ coverage
- ✓ Support PCIe Gen2 interface for PC/Laptop application
- ✓ Build-in eSIM (optional), DSSA
- ✓ 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 12
Max. 600 Mbps (DL)
Max. 150 Mbps (UL)



Max. 42 Mbps (DL)
Max. 11 Mbps (UL)



M.2 Form Factor



Embedded Abundant
Protocols



PCIe Gen2
Interface



Multi-constellation
GNSS



USB 2.0/3.0 High
Speed Interface



Quectel Enhanced
AT Commands

Quectel EM120R-GL

LTE-A Cat 12 M.2 Module

For Global

EM120R-GL

LTE-FDD:

B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/
B19/B20/B25/B26/B28/B29^①/B30/B32^①/B66

LTE-TDD:

B38/B39/B40/B41/B42/B43/B46^① (LAA)/
B48 (CBRS)

WCDMA:

B1/B2/B3/B4/B5/B6/B8/B19

Support up to DL 3 x CA

Data

LTE:

LTE-FDD (Max.): 600 Mbps (DL), 150 Mbps (UL)

LTE-TDD (Max.): 400 Mbps (DL), 90 Mbps (UL)

UMTS:

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

DC-HSUPA (Max.): 11 Mbps (UL)

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

SMS

Point-to-point MO and MT

SMS Cell Broadcast

Text and PDU Mode

3GPP/3GPP2

Interfaces

PCIe Gen2 Interface

USB 2.0/3.0, supporting Slave Mode

PCM × 1

(U)SIM Interface × 1: 1.8/3.0 V

Built-in eSIM (optional)

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, Div & GNSS Antenna Interfaces

Enhanced Features

MIMO: 2 × 2 DL

eCall: Emergency Service*

(U)SIM Card Detection

Build-in eSIM (optional)

DSSA: Dual SIM, Single Active

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 2 (26 dBm ±2 dB) for B41 HPUE

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/NCC

GCF*/PTCRB*

Others*:

WHQL

* under development

TBD: To be determined

^① For secondary component carrier only