

Quectel EM06

IoT/M2M-optimized LTE-A Cat 6 M.2 Module



Quectel EM06 is a series of LTE Advanced category 6 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel. 12 LTE technology, it delivers M2M-optimized speeds of 300Mbit/s downlink and 50Mbit/s uplink peak data rates. Designed in the M.2 form factor, EM06 is compatible with Quectel future Cat 9 module EM09, Cat 12 module EM12 and Cat 16 module EM16 , which will facilitate customers to migrate between different categories in the future.

EM06 contains 4 variants (EM06-E, EM06-A, EM06-LA and EM06-APAC) which are designed for different target regions and nearly cover all the main stream carriers worldwide.

EM06 supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou, Galileo and QZSS). 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 (USB drivers for Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows 10, Linux, Android/eCall*) extend the applicability of the module to a wide range of M2M and IoT applications such as industrial router, home gateway, STB, industrial PDA, rugged tablet PC, video surveillance and digital signage, etc.



Key Benefits

- ✓ LTE-A Cat 6 module with M.2 form factor, optimized for M2M and IoT applications
- ✓ Support LTE-A carrier aggregation
- ✓ Worldwide LTE-A and UMTS/HSPA+ 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 6
Max 300Mbps (DL)
Max 50Mbps (UL)



Max 63Mbps (DL)
Max 5.76Mbps (UL)



M.2 Form Factor



Embedded Abundant Protocols



eCall*



Multi-constellation GNSS



USB 2.0/3.0 High Speed Interface



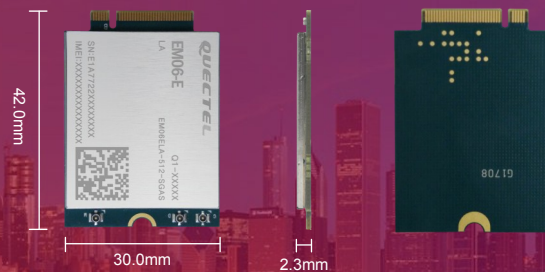
USB Drivers



Quectel Enhanced AT Commands

Quectel EM06

IoT/M2M-optimized LTE-A Cat 6 M.2 Module



Variant for EMEA/Australia/Brazil

EM06-E

LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32

LTE-TDD: B38/B40/B41

2×CA: B1+B1/B5/B8/B20/B28;

B3+B3/B5/B7/B8/B20/B28;

B7+B5/B7/B8/B20/B28;

B20+B32; B38+B38; B40+B40; B41+B41

(Note: B32 is only for secondary component carrier)

WCDMA: B1/B3/B5/B8

Variant for North America

EM06-A

LTE-FDD: B2/B4/B5/B7/B12/B13/B17/B25/B26/B29/B30/B66

LTE-TDD: B41

2×CA: B2+B2/B5/B12/B13/B17/B26/B29;

B4+B4/B5/B12/B13/B17/B26/B29;

B7+B5/B7/B12/B13/B17/B26/B29;

B25+B5/B12/B13/B17/B25/B26/B29;

B30+B5/B12/B13/B17/B26/B29;

B66+B5/B12/B13/B17/B26/B29/B66;

B41+B41

(Note: B29 is only for secondary component carrier)

WCDMA: B2/B4/B5

Variant for Latin America

EM06-LA^{Note 1}

LTE-FDD: B2/B3/B4/B5/B7/B8/B20/B28

2×CA: B2+B2/B5/B8/B20/B28;

B3+B3/B5/B7/B8/B20/B28;

B4+B4/B5/B8/B20/B28;

B7+B5/B7/B8/B20/B28

WCDMA: B2/B3/B4/B5/B8

Variant for Asia-Pacific

EM06-APAC^{Note 1}

LTE-FDD: B1/B3/B5/B7/B8/B18/B19/B21/B26

LTE-TDD: B38/B39/B40/B41

2×CA: B1+B3/B8/B18/B19; B3+B5/B19;

B7+B5/B7; B21+B19; B38+B38; B39+B39;

B39+B41; B40+B40; B41+B41

WCDMA: B1/B5/B6/B8/B9/B19

TD-SCDMA: B39

Data

LTE:

LTE-FDD: Max 300Mbps (DL), Max 50Mbps (UL)

LTE-TDD: Max 226Mbps (DL), Max 28Mbps (UL)

UMTS:

DC-HSDPA: Max 42Mbps (DL)

HSUPA: Max 5.76Mbps (UL)

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

TD-SCDMA:

Max 4.2Mbps (DL), Max 2.2Mbps (UL)

SMS*

Point-to-point MO and MT

SMS Cell Broadcast

Text and PDU Mode

Interfaces

USB 2.0/3.0, Supports Slave Mode

Digital Audio Through PCM Interface

I2C × 1

(U)SIM Interface × 2: 1. 8V/3.0V

ANTCTL × 4

W_DISABLE1#: Control Airplane Mode

RESET#: Reset the Module

WAKE_ON_WAN#: Wake up the Host

WWAN_LED#: Indicate Network Status

PCle Interface (Optional)

Main, Diversity and GNSS Antenna Interfaces

Enhanced Features

MIMO: 2 × 2, 4 × 2, DL

eCall*: Emergency Service

Digital Audio and VoLTE (Voice over LTE)

(Optional)

(U)SIM Card Detection*

DTMF*: Dual-tone Multi-frequency

DFOTA*: Delta Firmware over the Air

GNSS: GPS/GLONASS/BeiDou/Galileo/QZSS

Electrical Characteristics

Output Power:

Class 3 (23dBm±2dB) for LTE-FDD

Class 3 (23dBm±2dB) for LTE-TDD

Class 2 (24dBm+1/-3dB) for TD-SCDMA

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

Consumption:

TBD @Power off

TBD @Sleep, Typ.

TBD @Idle

Sensitivity:

TBD

Software Features

USB Serial Driver: Windows XP/Vista 7/8/8.1/10,

WinCE 5.0/6.0/7.0*, Linux 2.6/3.x/4.1,

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

RIL Driver: Android 4.x/5.x/6.x

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

QMI_WWAN Driver: Linux 3.x (3.4 or later)/4.1

Protocols:

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

HTTPS*/SMTP*/MMS*/FTPS*/SMTPS*/SSL*

General Features

3GPP E-UTRA Release 12

Bandwidth: 1.4/3/5/10/15/20/40 (2×CA)MHz

Supply Voltage: 3.1V~4.4V, 3.7V Typ.

Temperature Range:

3GPP Compliant Temperature Range:

-30°C ~ +70°C

Extended Temperature Range: -40°C ~ +85°C

Dimensions: 42.0mm × 30.0mm × 2.3mm

M.2 Package

Approx. 6.0g

3GPP TS27.007 and Quectel Enhanced AT

Commands

Approvals

CE*/Vodafone* (Europe)

FCC*/AT&T*/Verizon* (North America)

CCC* (China)

Note 1:

EM06-LA and EM06-APAC are under planning.

* Under Development