

# 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. 11 LTE technology, it delivers M2M-optimized speeds of 300Mbps downlink and 50Mbps uplink peak data rates.

Designed in the M.2 form factor, EM06 contains 4 variants (EM06-E, EM06-J, EM06-A and EM06-LA<sup>®</sup>) for different target regions and these variants nearly cover all the main stream carriers worldwide.

EM06 supports Qualcomm<sup>®</sup> 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 7/8/8.1/10, Linux, Android) extend the applicability of the module to a wide range of M2M and IoT applications such as industrial router, home gateway, set top box, industrial laptop, consumer laptop, 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
- ✓ Supports 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 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 42Mbps (DL)  
Max 5.76Mbps (UL)



M.2 Form Factor



Embedded Abundant  
Protocols



eSIM



Multi-constellation  
GNSS



USB 2.0 High Speed  
Interface



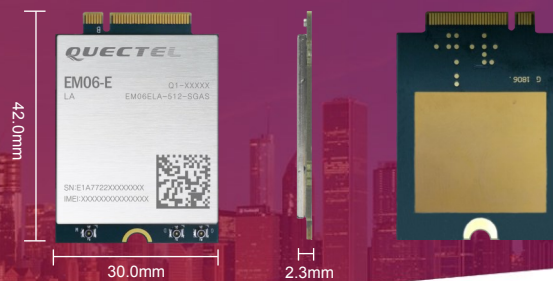
USB Drivers



Quectel Enhanced  
AT Commands

# Quectel EM06

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



### Variant for EMEA/APAC<sup>②</sup>/Brazil

#### EM06-E

LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32<sup>③</sup>

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<sup>③</sup>; B38+B38; B40+B40; B41+B41

WCDMA: B1/B3/B5/B8

### Variant for Japan

#### EM06-J

LTE-FDD: B1/B3/B8/B18/B19/B26/B28

LTE-TDD: B41

2×CA: B1+B1/B8/B18/B19/B26/B28;

B3+B3/B8/B18/B19/B26/B28;

B41+B41

WCDMA: B1/B3/B6/B8/B19

### Variant for North America

#### EM06-A

LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26/B29<sup>③</sup>/  
B30/B66

LTE-TDD: B41

2×CA: B2+B2/B5/B12/B13/B29<sup>③</sup>;

B4+B4/B5/B12/B13/B29<sup>③</sup>;

B7+B5/B7/B12/B26;

B25+B5/B12/B25/B26;

B30+B5/B12/B29<sup>③</sup>;

B66+B5/B12/B13/B29<sup>③</sup>/B66;

B41+B41

WCDMA: B2/B4/B5

### Variant for Latin America

#### EM06-LA (Under Planning)

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

### 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)

### SMS

Point-to-point MO and MT

SMS Cell Broadcast

Text and PDU Mode

### Interfaces

USB 2.0, 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

Main, Diversity and GNSS Antenna Interfaces

### Enhanced Features

MIMO: 2 × 2, 4 × 2, DL

Digital Audio and VoLTE (Voice over LTE)

(Optional)

(U)SIM Card Detection

DTMF: Dual-tone Multi-frequency

Support Dual SIM Single Standby\*

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

#### Consumption:

50uA @Power off

4.36mA @Sleep, Typ.

22.3mA @Idle

### Software Features

#### Support eSIM

#### MBIM Driver:

Windows 10

#### USB Serial Driver:

Windows 7/8/8.1/10,

Linux 2.6/3.x/4.1~4.15,

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/4.1~4.15

### Gobinet Driver:

Linux 2.6/3.x/4.1~4.15

### QMI\_WWAN Driver:

Linux 3.x (3.4 or later)/4.1~4.15

### Protocols:

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

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

### General Features

3GPP E-UTRA Release 11

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

Supply Voltage: 3.135V~4.4V, 3.7V Typ.

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

#### Carrier:

Deutsche Telekom\* (Europe)

Verizon\*/AT&T\*/Sprint\* (North America)

KDDI (Japan)

Telstra (Australia)

#### Regulatory:

GCF (Global)

CE (Europe)

FCC/PTCRB (North America)

IC (Canada)

NCC (Taiwan)

JATE/TELEC (Japan)

RCM (Australia/New Zealand)

ICASA\* (South Africa)

#### Others:

RoHS Compliant

WHQL

① Under Planning.

② APAC excludes Japan and CMCC.

③ LTE-FDD B29 and B32 support Rx only, and in 2×CA they are only for secondary component carrier.

\* Under Development.