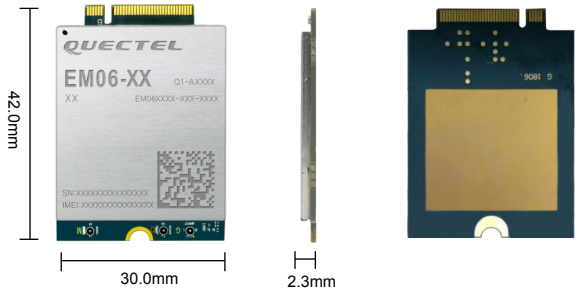
Quectel EM06

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 maximum data rates up to 300Mbps downlink and 50Mbps uplink.

Designed in the M.2 form factor, EM06 contains 3 variants (EM06-E, EM06-J and EM06-A) for different target regions and these variants nearly cover all the main stream carriers worldwide.

EM06 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 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
- 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 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

Voice over LTE

Multi-constellation GNSS

USB 2.0 High Speed

USB Drivers

Quectel Enhanced AT Commands

Rev.: V1.6| Status: Released

Quectel EM06 Series

LTE Cat 6	EM06-E	EM06-J	EM06-A
Region/Operator	EMEA/APAC①/Brazil	Japan	North America/ Mexico
Dimensions (mm)	42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3
Temperature Range			
Operation Temperature	-30°C ~ +70°C	-30°C ~ +70°C	-30°C ~ +70°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Frequency Bands			
LTE-FDD	B1/B3/B5/B7/B8/B20/B28/B32②	B1/B3/B8/B18/B19/B26/B28	B2/B4/B5/B7/B12/B13/B25/B26/B29②/B30/B66
LTE-TDD	B38/B40/B41	B41	B41
2xCA	B1+B1/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B20+B32②; B38+B38; B40+B40; B41+B41	B1+B1/B8/B18/B19/B26/B28; B3+B3/B8/B18/B19/B26/B28; B41+B41	B2+B2/B5/B12/B13/B29②; B4+B4/B5/B12/B13/B29②; B7+B5/B7/B12/B26; B25+B5/B12/B25/B26; B30+B5/B12/B29②; B66+B5/B12/B13/B29②/B66; B41+B41
WCDMA	B1/B3/B5/B8	B1/B3/B6/B8/B19	B2/B4/B5
GNSS	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou (Compass)/Galileo/QZSS (Optional)
Certifications			
Carrier	**Europe:** Deutsche Telekom* **Australia:** Telstra	**Japan:** KDDI	**North America:** Verizon/AT&T/Sprint
Regulatory	**Global:** GCF **Europe:** CE **Taiwan (China):** NCC **Australia & New Zealand:** RCM **North Africa:** ICASA	**Japan:** JATE/TELEC	**Global:** GCF **North America:** FCC/PTCRB **Canada:** IC
Others	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
Data Transmission			
LTE-FDD Data Rate (Mbps)	300 (DL)/50 (UL)	300 (DL)/50 (UL)	300 (DL)/50 (UL)
LTE-TDD Data Rate (Mbps)	226 (DL)/28 (UL)	226 (DL)/28 (UL)	226 (DL)/28 (UL)
DC-HSPA+ Data Rate (Mbps)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
WCDMA Data Rate (Kbps)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)
Interfaces			
(U)SIM	x2	x2	x2
I2C	x1	x1	x1
PCM (Digital Audio)	x1	x1	x1
Antenna Tuner Control* (ANTCTL)	x4	x4	x4
USB 2.0	x1	x1	x1
W_DISABLE1#	x1	x1	x1
RESET#	x1	x1	x1
WAKE_ON_WAN#	x1	x1	x1
WWAN_LED#	x1	x1	x1
Antennas	x3 (Main, Diversity and GNSS Antennas)	x3 (Main, Diversity and GNSS Antennas)	x3 (Main, Diversity and GNSS Antennas)
Voice			
Speech Codec Modes	AMR/AMR-WB	AMR/AMR-WB	AMR/AMR-WB
Echo Arithmetic	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression
VoLTE	CSFB and VoLTE (Voice over LTE) (Optional)	CSFB and VoLTE (Voice over LTE) (Optional)	CSFB and VoLTE (Voice over LTE) (Optional)
Enhanced Features			
MIMO (2x2, 4x2, DL)	●	●	●
Digital Audio and VoLTE (Voice over LTE)	Optional	Optional	Optional
(U)SIM Card Detection	●	●	●
DTMF	●	●	●
Dual SIM Single Standby*	●	●	●
DFOTA	●	●	●
GNSS	●	●	●
Drivers			
USB Driver	Windows 7/8/8.1/10, Linux 2.6~5.4, Android 4.x/5.x/6.x/7.x/9.x	Windows 7/8/8.1/10, Linux 2.6~5.4, Android 4.x/5.x/6.x/7.x/9.x	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	Android 4.x/5.x/6.x/7.x/8.x/9.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	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x
NDIS Driver	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
MBIM Driver	Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10, Linux 3.18~5.4
GobiNet Driver	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4
QMI_WWAN Driver	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4
Electrical Features			
Supply Voltage Range	3.135V~4.4V, 3.7V Typ.	3.135V~4.4V, 3.7V Typ.	3.135V~4.4V, 3.7V Typ.
Power Consumption	50μA @Power off 4.1mA @Sleep Typ. 22.1mA @Idle	47μA @Power off 3.8mA @Sleep Typ. 19.5mA @Idle	50μA @Power off 3.8mA @Sleep Typ. 21.3mA @Idle

Notes:
1. * means Under Development.
2. ● means supported.
① Excluding Japan and CMCC.
② LTE-FDD B29 and B32 support receiving only, and are only for secondary component carrier in 2×CA.

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