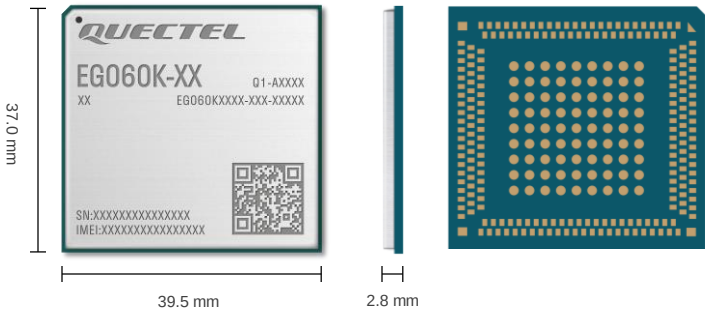
Quectel EG060K Series

IoT/ M2M-optimized
LTE-A Cat 6 LGA Module



Quectel EG060K is a series of LTE advanced Cat 6 modules optimized specially for M2M and IoT applications. Adopting the 3GPP Rel-12 LTE technology, it delivers M2M-optimized speeds of 300 Mbps downlink and 50 Mbps uplink peak data rates. It contains 5 variants: EG060K-EA, EG060K-GT, EG060K-NA , EG060K-LA and EG060K-JP.

Designed in an LGA form factor, EG060K series module is compatible with Quectel EG06/ EG12/ EG18 series module (Cat 6/ 12/ 18), which will help customers to migrate between different categories.

EG060K series module covers nearly all mainstream carriers in the world. It is embedded with a multi-constellation and high-sensitivity GNSS (GPS, GLONASS, BDS and Galileo) receiver for positioning. 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 (such as USB drivers for Windows 7/ 8/ 8.1/ 10/ 11, Linux, Android) extend the applicability of the module to a wide range of M2M and IoT applications such as industrial routers, home gateways, set-top boxes, industrial PDAs, consumer laptops, rugged tablet PCs, video transmission and digital signage, etc.

Key Features

- LTE-A Cat 6 module with an LGA form factor, optimized for M2M and IoT applications
- LTE-A carrier aggregation supported
- Worldwide LTE-A and UMTS/ HSPA+/ DC-HSDPA 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 the demands for data rate and link reliability in modem wireless communication systems

4G LTE Max. 300 Mbps (DL) Max. 50 Mbps (UL)	3G HSPA+ Max. 42 Mbps (DL) Max. 5.76 Mbps (UL)	LGA LGA Package
Embedded Abundant Protocols	VoLTE Voice over LTE (Optional)	Multi-Constellation GNSS (Optional)
USB 2.0/ 3.0 Interface	AT Quectel Enhanced AT Commands	USB Drivers

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LTE Cat 6	EG060K-EA	EG060K-GT	EG060K-NA	EG060K-LA	EG060K-JP
Region/ Operator	EMEA/ APAC①/ Brazil	Global TDD Network	North America	Latin America②	Japan
Dimensions (mm)	37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8
Temperature Range					
Operating Temperature	-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C
Extended Temperature	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
Frequency Bands					
LTE-FDD	B1/ 3/ 5/ 7/ 8/ 20/ 28/ 32	-	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 66/ 71	B2/ 4/ 5/ 7/ 8/ 25/ 28/ 66	B1/ 3/ 5/ 8/ 18/ 19/ 26/ 28③
LTE-TDD	B38/ 40/ 41/ 42④/ 43④	B40*/ 41/ 42*/ 43*/ 48	B41/ 48	B42④/ 43④	B41
LTE DL 4 × 4 MIMO	B1/ 3/ 7/ 38/ 40/ 41/ 42④	-	B2/ 4/ 7/ 25/ 30/ 41/ 48/ 66	B2/ 4/ 7/ 25/ 42④/ 66	-
WCDMA	B1/ 3/ 5/ 8	-	-	B2/ 4/ 5/ 8	B1/ 3/ 5/ 6/ 8/ 9/ 19
GNSS (Optional)	GPS/ GLONASS/ BDS/ Galileo	GPS/ GLONASS/ BDS/ Galileo	GPS/ GLONASS/ BDS/ Galileo	GPS/ GLONASS/ BDS/ Galileo	GPS/ GLONASS/ BDS/ Galileo
Certifications					
Regulatory	**Europe:** CE **Australia/ New Zealand:** RCM	**American:** FCC/ IC	**Global:** GCF **North America:** PTCRB **America:** FCC **Canada:** IC	TBD	TBD
Carrier	TBD	TBD	**American:** Verizon*/ AT&T/ T-Mobile	TBD	TBD
Others	WHQL	WHQL	WHQL	WHQL	WHQL
Data Rate (Max.)					
LTE-FDD (Mbps)	300 (DL)/ 50 (UL)	-	300 (DL)/ 50 (UL)	300 (DL)/ 50 (UL)	300 (DL)/ 50 (UL)
LTE-TDD (Mbps)	226 (DL)/ 28 (UL)	226 (DL)/ 28 (UL)	226 (DL)/ 28 (UL)	226 (DL)/ 28 (UL)	226 (DL)/ 28 (UL)
DC-HSDPA/ HSUPA (Mbps)	42 (DL)/ 5.76 (UL)	-	-	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)
WCDMA (kbps)	384 (DL)/ 384 (UL)	-	-	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)
Interfaces					
(U)SIM (1.8/3.0 V)	× 2	× 2	× 2	× 2	× 2
eSIM (Optional)	× 1	× 1	× 1	× 1	× 1
UART	× 3 (Bluetooth UART* × 1, multiplexed from SPI)	× 3 (Bluetooth UART* × 1, multiplexed from SPI)	× 3 (Bluetooth UART* × 1, multiplexed from SPI)	× 3 (Bluetooth UART* × 1, multiplexed from SPI)	× 3 (Bluetooth UART* × 1, multiplexed from SPI)
SPI	× 1 (Master mode only)	× 1 (Master mode only)	× 1 (Master mode only)	× 1 (Master mode only)	× 1 (Master mode only)
PCM	× 1	× 1	× 1	× 1	× 1
PCIe	× 1 (RC mode only: PCIe Gen 2, for Wi-Fi, Ethernet functions)	× 1 (RC mode only: PCIe Gen 2, for Wi-Fi, Ethernet functions)	× 1 (RC mode only: PCIe Gen 2, for Wi-Fi, Ethernet functions)	× 1 (RC mode only: PCIe Gen 2, for Wi-Fi, Ethernet functions)	× 1 (RC mode only: PCIe Gen 2, for Wi-Fi, Ethernet functions)
USB 2.0/ 3.0	× 1 (Master mode* and slave mode)	× 1 (Master mode* and slave mode)	× 1 (Master mode* and slave mode)	× 1 (Master mode* and slave mode)	× 1 (Master mode* and slave mode)
ADC	× 2	× 2	× 2	× 2	× 2
SDIO*	× 1	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1	× 1

Notes:
1. ①: Excl. China/ Japan.
2. ②: Excl. Brazil.
3. ③: UL: 718–748 MHz; DL: 773–803 MHz.
4. ④: Optional.
5. * : Under Development/ In Progress.
6. TBD: To Be Determined.

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LTE Cat 6		EG060K-EA	EG060K-GT	EG060K-NA	EG060K-LA	EG060K-JP
Voice						
VoLTE (Optional)		Digital Audio and VoLTE (Voice over LTE)	-	Digital Audio and VoLTE (Voice over LTE)	Digital Audio and VoLTE (Voice over LTE)	Digital Audio and VoLTE (Voice over LTE)
Enhanced Features						
DTMF		●	-	●	●	●
DFOTA		●	●	●	●	●
QMI/Rmnet		●	●	●	●	●
MIMO		2 × 2, 4 × 2, 4 × 4④, DL	2 × 2, 4 × 2, DL	2 × 2, 4 × 2, 4 × 4, DL	2 × 2, 4 × 2, 4 × 4④, DL	2 × 2, 4 × 2, DL
(U)SIM Detection		●	●	●	●	●
Software Features						
Protocols		QMI/ MBIM/ NITZ/ HTTP(S)/ FTP/ LwM2M/ PING	QMI/ MBIM/ NITZ/ HTTP(S)/ FTP/ LwM2M/ PING	QMI/ MBIM/ NITZ/ HTTP(S)/ FTP/ LwM2M/ PING	QMI/ MBIM/ NITZ/ HTTP(S)/ FTP/ LwM2M/ PING	QMI/ MBIM/ NITZ/ HTTP(S)/ FTP/ LwM2M/ PING
Drivers	**RIL Driver**	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x
	USB MBIM Driver	Windows 8/ 8.1/ 10/ 11 Linux 3.18–6.5	Windows 8/ 8.1/ 10/ 11 Linux 3.18–6.5	Windows 8/ 8.1/ 10/ 11 Linux 3.18–6.5	Windows 8/ 8.1/ 10/ 11 Linux 3.18–6.5	Windows 8/ 8.1/ 10/ 11 Linux 3.18–6.5
	USB NDIS Driver	Windows 7/ 8/ 8.1/ 10/ 11	Windows 7/ 8/ 8.1/ 10/ 11	Windows 7/ 8/ 8.1/ 10/ 11	Windows 7/ 8/ 8.1/ 10/ 11	Windows 7/ 8/ 8.1/ 10/ 11
	USB ECM Driver	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5
	USB GobiNet Driver	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5
	USB QMI_WWAN Driver	Linux 3.4–6.5	Linux 3.4–6.5	Linux 3.4–6.5	Linux 3.4–6.5	Linux 3.4–6.5
	USB Serial Driver	Windows 7/ 8/ 8.1/ 10/ 11 WinCE 5.0/ 6.0/ 7.0* Linux 2.6–6.5 Android 4.x–13.x	Windows 7/ 8/ 8.1/ 10/ 11 WinCE 5.0/ 6.0/ 7.0* Linux 2.6–6.5 Android 4.x–13.x	Windows 7/ 8/ 8.1/ 10/ 11 WinCE 5.0/ 6.0/ 7.0* Linux 2.6–6.5 Android 4.x–13.x	Windows 7/ 8/ 8.1/ 10/ 11 WinCE 5.0/ 6.0/ 7.0* Linux 2.6–6.5 Android 4.x–13.x	Windows 7/ 8/ 8.1/ 10/ 11 WinCE 5.0/ 6.0/ 7.0* Linux 2.6–6.5 Android 4.x–13.x
Electrical Features						
Supply Voltage Range		3.3–4.4 V, typ. 3.8 V	3.3–4.4 V, typ. 3.8 V	3.3–4.4 V, typ. 3.8 V	3.3–4.4 V, typ. 3.8 V	3.3–4.4 V, typ. 3.8 V
Power Consumption (Typical)		12 μA @ Power off 3.7 mA @ Sleep (LTE-FDD PF = 64) 2.8 mA @ Sleep (LTE-FDD PF = 128) 11.6 mA @ Idle (LTE-FDD PF = 64)	TBD	12 μA @ Power off 3.7 mA @ Sleep (LTE-FDD PF = 64) 2.8 mA @ Sleep (LTE-FDD PF = 128) 11.6 mA @ Idle (LTE-FDD PF = 64)	12 μA @ Power off 3.7 mA @ Sleep (LTE-FDD PF = 64) 2.8 mA @ Sleep (LTE-FDD PF = 128) 11.6 mA @ Idle (LTE-FDD PF = 64)	12 μA @ Power off 3.7 mA @ Sleep (LTE-FDD PF = 64) 2.8 mA @ Sleep (LTE-FDD PF = 128) 11.6 mA @ Idle (LTE-FDD PF = 64)

Notes:
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2. ④: Optional.
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