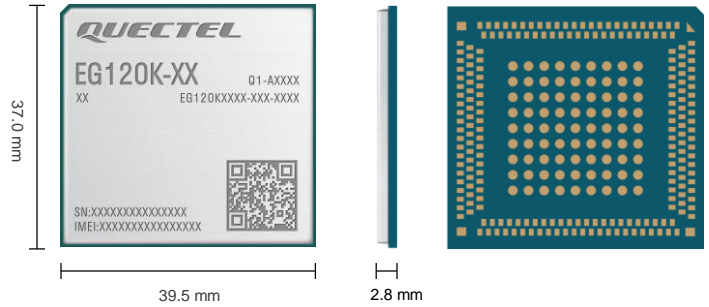




# Quectel EG120K Series

IoT/ M2M-optimized  
LTE-A Cat 12 LGA Module



Quectel EG120K is a series of LTE advanced Cat 12 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel-12 LTE technology, it delivers M2M-optimized speeds of 600 Mbps downlink and 150 Mbps uplink peak data rates. It contains 4 variants: EG120K-EA, EG120K-NA, EG120K-LA and EG120K-JP.

Designed in an LGA form factor, EG120K series is compatible with Quectel module EG06/ EG12/ EG18 (Cat 6/ 12/ 18), which will help customers to migrate between different categories.

EG120K 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 (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 laptops, rugged tablet PCs, video transmission and digital signage, etc.



## Key Features

- ✓ LTE-A Cat 12 module with an LGA form factor, optimized for M2M and IoT applications
- ✓ Supports LTE-A carrier aggregation
- ✓ 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 demands for data rate and link reliability in modem wireless communication systems

 Max. 600 Mbps (DL) Max. 150 Mbps (UL)	 Max. 42 Mbps (DL) Max. 5.76 Mbps (UL)	 LGA Package
 Embedded Abundant Protocols	 Voice over LTE (Optional)	 Multi-constellation GNSS (Optional)
 USB 2.0/ 3.0 Interface	 USB Drivers	 Quectel Enhanced AT Commands

Version: 1.3 | Status: Released

# Quectel EG120K Series

LTE Cat 12	EG120K-EA	EG120K-NA	EG120K-LA	EG120K-JP
Region/ Operator	EMEA, APAC <sup>①</sup> , Brazil	North America	Latin America <sup>②</sup>	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
Temperature Range				
Operating Temperature	-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
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/ 28 <sup>③</sup>
LTE-TDD	B38/ 40/ 41/ 42 <sup>④</sup> / 43 <sup>④</sup>	B41/ 48	B42/ 43	B41
LTE DL 4 × 4 MIMO	B1/ 3/ 7/ 38/ 40/ 41/ 42 <sup>④</sup>	B2/ 4/ 7/ 25/ 30/ 41/ 48/ 66	B2/ 4/ 7/ 25/ 42/ 66	B1/ 3/ 41
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
Certifications				
Regulatory	Europe: CE Australia/ New Zealand: RCM	Global: GCF North America: PTCRB America: FCC Canada: IC	TBD	TBD
Carrier	TBD	America: T-Mobile/ Verizon/ AT&T	TBD	TBD
Others	WHQL	WHQL	WHQL	WHQL
Data Rate (Max.)				
LTE-FDD (Mbps)	600 (DL) / 150 (UL)	600 (DL) / 150 (UL)	600 (DL) / 150 (UL)	600 (DL) / 150 (UL)
LTE-TDD (Mbps)	430 (DL) / 90 (UL)	430 (DL) / 90 (UL)	430 (DL) / 90 (UL)	430 (DL) / 90 (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
eSIM (Optional)	× 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)
SPI	× 1 (Master mode only)	× 1 (Master mode only)	× 1 (Master mode only)	× 1 (Master mode only)
PCM	× 1	× 1	× 1	× 1
PCIe	× 1 (RC: PCIe Gen 2, for Wi-Fi, Ethernet functions)	× 1 (RC: PCIe Gen 2, for Wi-Fi, Ethernet functions)	× 1 (RC: PCIe Gen 2, for Wi-Fi, Ethernet functions)	× 1 (RC: 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)
ADC	× 2	× 2	× 2	× 2
SDIO*	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1

## Notes:

- ①: Excl. China/ Japan.
- ②: Excl. Brazil.
- ③: UL: 715–748 MHz; DL: 770–803 MHz.
- ④: Optional.
- \*: Under development.

# Quectel EG120K Series

LTE Cat 12	EG120K-EA	EG120K-NA	EG120K-LA	EG120K-JP	
<b>Voice</b>					
<b>VoLTE (Optional)</b>	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)	
<b>Enhanced Features</b>					
<b>DTMF</b>	●	●	●	●	
<b>DFOTA</b>	●	●	●	●	
<b>QMI/ Rmnet</b>	●	●	●	●	
<b>MIMO (2 x 2, 4 x 2, 4 x 4, DL)</b>	●	●	●	●	
<b>(U)SIM Detection</b>	●	●	●	●	
<b>Software Features</b>					
<b>Protocols</b>	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	
<b>Drivers</b>	<b>RIL Driver</b>	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x
	<b>USB MBIM Driver</b>	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
	<b>USB NDIS Driver</b>	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
	<b>USB ECM Driver</b>	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5
	<b>USB GobiNet Driver</b>	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5
	<b>USB QMI_WWAN Driver</b>	Linux 3.4–6.5	Linux 3.4–6.5	Linux 3.4–6.5	Linux 3.4–6.5
	<b>USB Serial Driver</b>	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
<b>Electrical Features</b>					
<b>Supply Voltage Range</b>	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	
<b>Power Consumption (Typical)</b>	12 μA @ Power off 3.4 mA @ Sleep (LTE-FDD PF = 64) 1.9 mA @ Sleep (LTE-FDD PF = 128) 10.2 mA @ Idle (LTE-FDD PF = 64)	12 μA @ Power off 3.4 mA @ Sleep (LTE-FDD PF = 64) 1.9 mA @ Sleep (LTE-FDD PF = 128) 10.2 mA @ Idle (LTE-FDD PF = 64)	12 μA @ Power off 3.4 mA @ Sleep (LTE-FDD PF = 64) 1.9 mA @ Sleep (LTE-FDD PF = 128) 10.2 mA @ Idle (LTE-FDD PF = 64)	12 μA @ Power off 3.4 mA @ Sleep (LTE-FDD PF = 64) 1.9 mA @ Sleep (LTE-FDD PF = 128) 10.2 mA @ Idle (LTE-FDD PF = 64)	

Note:

- : supported.
- \*: under development.