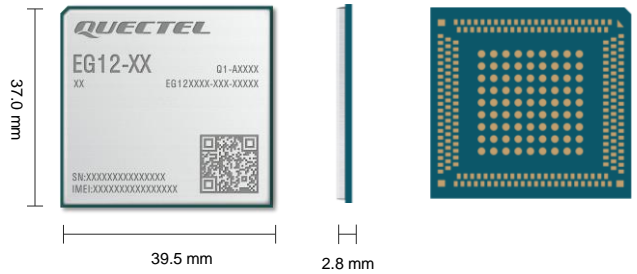


Quectel EG12 Series

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



Quectel EG12-EA is a series of LTE Advanced category 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. Designed in an LGA form factor, EG12 series is compatible with Quectel Cat 6/ 18 module series EG06/ EG18, which will help customers to migrate between different categories.

EG12 series supports Qualcomm® IZat™ location technology Gen9HT-Lite (GPS, GLONASS, BDS, 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 8.1/ 10/ 11, Linux, Android) extend the applicability of the module to a wide range of M2M and IoT applications such as 4G router, CPE, wireless POS terminal, consumer laptop, industrial PDA, rugged tablet PC and video transmission.



Key Features

- ✓ LTE-A Cat 12 module with LGA form factor, optimized for M2M and IoT applications
- ✓ Support DL 3CA, 256QAM and 4 x 4 MIMO
- ✓ 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 12
Max 600 Mbps (DL)
Max 150 Mbps (UL)



Max 42 Mbps (DL)
Max 11.2 Mbps (UL)



LGA Package



Embedded Abundant
Protocols



USB/ PCIe Drivers



Multi-constellation GNSS
(Optional)



USB 3.0/ PCIe High
Speed Interface



Voice over LTE
(Optional)



Quectel Enhanced
AT Commands

Quectel EG12 Series

LTE Cat 12		EG12-EA	EG12-GT	
Region/ Operator		EMEA/ APAC ^① / Brazil	Global	
Package		LGA	LGA	
Dimensions (mm)		37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8	
Weight		9.0 g	9.0 g	
Temperature Range				
Operation Temperature		-30 °C to +75 °C	-30 °C to +75 °C	
Extended Temperature		-40 °C to +85 °C	-40 °C to +85 °C	
Frequency Bands				
	LTE-FDD	B1/ 3/ 5/ 7/ 8/ 20/ 28	-	
	LTE-TDD	B38/ 40/ 41	B42/ 43/ 48	
	UL 2CA	B3+B3; B7+B7; B38+B38; B40+B40; B41+B41	B42+B42	
	DL 2CA	B1+B1/ 3/ 5/ 7/ 8/ 20/ 28/ 38/ 40/ 41; B3+B3/ 5/ 7/ 8/ 20/ 28/ 38/ 40/ 41; B7+B5/ 7/ 8/ 20/ 28; B20+B38/ 40; B38+B38; B40+B40; B41+B41	B42+B42; B48+B48	
LTE	DL 3CA	B1+B3+B3/ 5/ 7/ 8/ 20/ 28/ 38/ 41; B1+B40+B40; B1+B41+B41; B1+B7+B20; B3+B3+B7/ 20/ 28; B3+B7+B7/ 8/ 20/ 28; B3+B40+B40; B3+B41+B41; B7+B7+B20/ 28; B40+B40+B40; B41+B41+B41		B42+B42+B42; B48+B48+B48
	DL 4 × 4 MIMO	LTE-FDD: B1/ 3/ 7	LTE-FDD: B42/ 48	
	DL 256QAM	Supported	Supported	
UMTS	WCDMA	B1/ 3/ 5/ 8	-	
GNSS (Optional)		GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	
Certifications				
Regulatory		Global: GCF Europe: CE Australia/ New Zealand: RCM	America: FCC	
Carrier		-	-	
Others		RoHS	RoHS	
Data Rate (Max.)				
LTE	LTE-FDD	600 Mbps (DL)/ 150 Mbps (UL)	-	
	LTE-TDD	430 Mbps (DL)/ 90 Mbps (UL)	430 Mbps (DL)/ 90 Mbps (UL)	
	DC-HSDPA	42 Mbps (DL)	-	
UMTS	DC-HSUPA	11.2 Mbps (UL)	-	
	WCDMA	384 kbps (DL)/ 384 kbps (UL)	-	
Enhanced Features				
MIMO: DL 4 × 4, 4 × 2, 2 × 2		●	●	
eCall: Emergency Service		●	●	
(U)SIM Card Detection		●	●	
DTMF		●	●	
DFOTA: Delta Firmware Over-the-Air		●	●	
GNSS		○	○	

NOTE:

- ①: : Excl. China and Japan.
- *: Under development/In progress.
- : Supported; ○: Optional.

Quectel EG12 Series

LTE Cat 16	EG12-EA	EG12-GT	
SMS			
Point-to-point MO and MT	•	•	
SMS Cell Broadcast	•	•	
Text and PDU Mode	•	•	
Software Features			
3GPP	3GPP E-UTRA Release 12	3GPP E-UTRA Release 12	
AT Command	3GPP TS27.007 and 27.005 Quectel Enhanced AT Commands	3GPP TS27.007 and 27.005 Quectel Enhanced AT Commands	
Protocols	QMI/ MBIM/ NITZ/ HTTP/ HTTPS/ FTP/ LwM2M/ PING	QMI/ MBIM/ NITZ/ HTTP/ HTTPS/ FTP/ LwM2M/ PING	
Drivers	MBIM Driver	Windows 8.1/ 10/ 11 Linux 3.18–6.7	Windows 8.1/ 10/ 11 Linux 3.18–6.7
	USB Serial Driver	Windows 8.1/ 10/ 11 Linux 2.6–6.7 Android 4.x–13.x	Windows 8.1/ 10/ 11 Linux 2.6–6.7 Android 4.x–13.x
	RIL Driver	Android 4.x–13.x	Android 4.x–13.x
	NDIS Driver	Windows 8.1/ 10/ 11	Windows 8.1/ 10/ 11
	ECM Driver*	Linux 2.6–6.7	Linux 2.6–6.7
	Gobinet Driver	Linux 2.6–6.7	Linux 2.6–6.7
	QMI_WWAN Driver	Linux 3.4–6.7	Linux 3.4–6.7
Interfaces			
(U)SIM Interfaces (1.8/3.0 V)	× 2	× 2	
USB 2.0/ 3.0, supporting Master and Slave Mode	× 1	× 1	
UART	× 3	× 3	
SPI	× 1 (multiplexed from BT UART interface)	× 1 (multiplexed from BT UART interface)	
I2C	× 1	× 1	
ADC	× 2	× 2	
PCIe*	× 1	× 1	
GPIO	× 5	× 5	
SDIO*	× 1	× 1	
RFFE*	× 1	× 1	
USB_BOOT	× 1	× 1	
Antenna Interfaces	× 4 (Main, Rx-diversity, GNSS, MIMO1, MIMO2)	× 4 (Main, Rx-diversity, GNSS, MIMO1, MIMO2)	
Electrical Features			
Supply Voltage Range	3.3–4.3 V, typ. 3.8 V	3.3–4.3 V, typ. 3.8 V	
Transmitting Power	Class 3 (23 dBm ±2 dB) for LTE-FDD Class 3 (23 dBm ±2 dB) for LTE-TDD Class 3 (23 dBm ±2 dB) for WCDMA	Class 3 (23 dBm ±2 dB) for LTE-TDD	
Power Consumption	20 µA @ Power off 4.39 mA @ Sleep 24.97 mA @ Idle	20 µA @ Power off 2.54 mA @ Sleep 24.65 mA @ Idle	

NOTE:

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