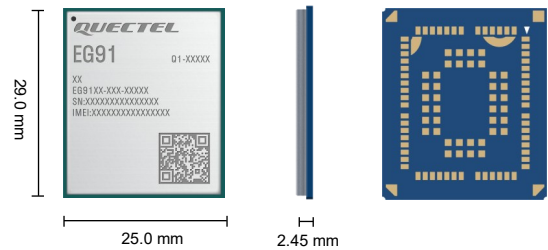


Quectel EG91 Series

IoT/M2M-optimized
LTE Cat 1 Modules



Quectel EG91 is a series of LTE Cat 1 modules optimized specially for M2M and IoT applications. Adopting 3GPP Rel-11 LTE technology, it delivers maximum data rates up to 10 Mbps downlink and 5 Mbps uplink. These make EG91 series an ideal solution for numerous IoT applications that are not reliant on high speed connectivity but require the longevity and reliability of LTE network.

EG91 series contains 8 variants: EG91-NA, EG91-JP, EG91-VX, EG91-NAX, EG91-NAXD, EG91-E, EG91-EX and EG91-AUX. EG91 series is pin-to-pin compatible with Quectel GSM M95 module and LPWA BG95 series/BG96 modules. It is backward-compatible with existing GSM/GPRS and UMTS/HSPA(+) networks, ensuring that it can be connected even in remote areas devoid of 4G network coverage.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB serial drivers for Windows 8.1/10/11, Linux and Android, etc.) extend the applicability of the module to a wide range of M2M and IoT applications such as smart metering, wearable devices, environmental monitoring, asset tracking, fleet management, smart safety and alarm systems.



Key Features

- ✓ Cost-effective and low-power LTE connectivity optimized for broadband IoT applications
- ✓ Multi-band LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage
- ✓ Compact SMT form factor ideal for size-constrained applications with extended operation temperature range
- ✓ Embedded power management unit (PMU) featuring ultra-low deep-sleep current consumption
- ✓ Simple migration from 2G/3G to 4G with a flexible and scalable platform

 4G LTE LTE Cat 1 Max. 10 Mbps (DL) Max. 5 Mbps (UL)	 3G HSPA+ Max. 42 Mbps (DL) Max. 5.76 Mbps (UL)	 LGA LGA Package
 Embedded Abundant Protocols	 Compact Size	 AT Quectel Enhanced AT Commands
 USB 2.0 High Speed Interface	 USB Drivers	

Quectel EG91 Series

LTE Cat 1	EG91-NA	EG91-NAXD (Data-only)	EG91-VX	EG91-NAX
Region/Operator	North America	North America	North America	North America
Dimensions (mm)	29.0 × 25.0 × 2.45	29.0 × 25.0 × 2.45	29.0 × 25.0 × 2.45	29.0 × 25.0 × 2.45
Temperature Range				
Operating Temperature	-35 to +75 °C	-35 °C to +75 °C	-35 to +75 °C	-35 to +75 °C
Extended Temperature	-40 to +85 °C	-40 °C to +85 °C	-40 to +85 °C	-40 to +85 °C
Frequency Bands				
LTE-FDD	B2/4/5/12/13	B2/4/5/12/13/25/26	B4/13	B2/4/5/12/13/25/26
WCDMA	B2/4/5	B2/4/5	-	B2/4/5
GSM/EDGE	-	-	-	-
GNSS (Optional)	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
Certifications				
Carrier	America: Verizon/AT&T/T-Mobile/U.S. Cellular Canada: Rogers/Telus	America: Verizon/AT&T/T-Mobile/ Sprint/U.S. Cellular Canada: Rogers/Telus	America: Verizon	America: Verizon/AT&T/Sprint Canada: Rogers/Telus
Regulatory	Global: GCF North America: PTCRB America: FCC Canada: IC	Global: GCF North America: PTCRB America: FCC Canada: IC	Global: GCF America: FCC	Global: GCF North America: PTCRB America: FCC Canada: IC
Others	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS
Max. Data Transmission Rates				
LTE-FDD (Mbps)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)
DC-HSPA+ (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)
EDGE (kbps)	-	-	-	-
GPRS (kbps)	-	-	-	-
Interfaces				
(U)SIM	× 2	× 2	× 2	× 2
UART	× 2	× 2	× 2	× 2
USB 2.0	× 1	× 1	× 1	× 1
Audio Digital (PCM)	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1
NETLIGHT	× 1	× 1	× 1	× 1
SPI	× 1	× 1	× 1	× 1
Main Antenna	× 1	× 1	× 1	× 1
Rx-diversity Antenna	× 1	× 1	× 1	× 1
GNSS Antenna	× 1	× 1	× 1	× 1
PWRKEY	× 1	× 1	× 1	× 1
RESET_N	× 1	× 1	× 1	× 1
USB_BOOT	× 1	× 1	× 1	× 1
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
Audio (Optional)	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	●	●	●	●
Audio Playback*/ Audio Recording*	Optional	Optional	Optional	Optional
QuecOpen®	●	-	-	-
QuecFile®	●	●	●	●
SMS	●	●	●	●
eSIM*①	●	●	●	●
Drivers				
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	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
GNSS Driver	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x
RIL Driver	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x
USB NDIS Driver	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11
USB MBIM Driver	Windows 8.1/10/11, Linux 3.18–6.7	Windows 8.1/10/11, Linux 3.18–6.7	Windows 8.1/10/11, Linux 3.18–6.7	Windows 8.1/10/11, Linux 3.18–6.7
USB GobiNet Driver	Linux 2.6–6.7	Linux 2.6–6.7	Linux 2.6–6.7	Linux 2.6–6.7
USB QMI_WWAN Driver	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7
Electrical Features				
Supply Voltage Range	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.
Power Consumption	13 µA @ Power off 1.0 mA @ Sleep, Typ. 15 mA @ Idle	9 µA @ Power off 1.1 mA @ Sleep, Typ. 16.7 mA @ Idle	7.6 µA @ Power off 0.95 mA @ Sleep, Typ. 16.5 mA @ Idle	9 µA @ Power off 1.1 mA @ Sleep, Typ. 16.7 mA @ Idle

NOTE:
 1. *: Under development.
 2. ●: Supported.
 3. ①: eSIM function can be supported by software, but an external eSIM chip is required.

Quectel EG91 Series

LTE Cat 1	EG91-AUX	EG91-E ^②	EG91-EX	EG91-JP
Region/Operator	Latin America/Australia & New Zealand	EMEA	EMEA	Japan
Dimensions (mm)	29.0 × 25.0 × 2.45	29.0 × 25.0 × 2.3	29.0 × 25.0 × 2.45	29.0 × 25.0 × 2.45
Temperature Range				
Operating Temperature	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C	-35 °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	B1/2/3/4/5/7/8/28/66	B1/3/7/8/20/28A	B1/3/7/8/20/28	B1/3/8/18/19/26
WCDMA	B1/2/5/8	B1/8	B1/8	-
GSM/EDGE	B2/3/5/8	B3/8	B3/8	-
GNSS (Optional)	GPS/GLONASS/BDS/Galileo/QZSS	-	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
Certifications				
Carrier	Australia: Telstra ^①	Europe: Deutsche Telekom	Europe: Deutsche Telekom Australia: Telstra	Japan: NTT DOCOMO/KDDI/SoftBank*
Regulatory	Global: GCF North America: PTCRB Europe: CE America: FCC Brazil: Anatel Australia & New Zealand: RCM	Global: GCF Europe: CE The UK: UKCA Brazil: Anatel Australia & New Zealand: RCM	Global: GCF Europe: CE The UK: UKCA Taiwan, China: NCC Australia & New Zealand: RCM	Japan: JATE/TELEC
Others	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS
Max. Data Transmission Rates				
LTE-FDD (Mbps)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)
DC-HSPA+ (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)	-
EDGE (kbps)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	-
GPRS (kbps)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	-
Interfaces				
(U)SIM	× 2	× 2	× 2	× 2
UART	× 2	× 2	× 2	× 2
USB 2.0	× 1	× 1	× 1	× 1
Audio Digital (PCM)	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1
NETLIGHT	× 1	× 1	× 1	× 1
SPI	× 1	× 1	× 1	× 1
Main Antenna	× 1	× 1	× 1	× 1
Rx-diversity Antenna	-	× 1	× 1	× 1
GNSS Antenna	× 1	-	× 1	× 1
PWRKEY	× 1	× 1	× 1	× 1
RESET_N	× 1	× 1	× 1	× 1
USB_BOOT	× 1	× 1	× 1	× 1
GRFC (Optional)	× 2	-	-	× 2
Voice				
Speech Codec Modes	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	AMR/AMR-WB
Echo Arithmetic	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression
Audio (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	●	●	●	●
Audio Playback*/Audio Recording*	Optional	Optional	Optional	Optional
QuecOpen[®]	-	●	-	-
QuecFile[®]	●	●	●	●
(U)SIM Card Detection	●	●	●	●
SMS	●	●	●	●
eSIM^③	●	-	●	●
Drivers				
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	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
GNSS Driver	Android 4.x–13.x	-	Android 4.x–13.x	Android 4.x–13.x
RIL Driver	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x	Android 4.x–13.x
USB NDIS Driver	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11
USB MBIM Driver	Windows 8.1/10/11, Linux 3.18–6.7	Windows 8.1/10/11, Linux 3.18–6.7	Windows 8.1/10/11, Linux 3.18–6.7	Windows 8.1/10/11, Linux 3.18–6.7
USB GobiNet Driver	Linux 2.6–6.7	Linux 2.6–6.7	Linux 2.6–6.7	Linux 2.6–6.7
USB QMI_WWAN Driver	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7
Electrical Features				
Supply Voltage Range	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.
Power Consumption	10 μA @ Power off 1.1 mA @ Sleep, Typ. 23 mA @ Idle	13 μA @ Power off 1.1 mA @ Sleep, Typ. 19 mA @ Idle	15 μA @ Power off 1.3 mA @ Sleep, Typ. 21 mA @ Idle	10 μA @ Power off 0.8 mA @ Sleep 14.6 mA @ Idle

NOTE:

- *: Under development.
- : Supported.
- ①: Certified with EG91-AUX data-only version.
- ②: Thickness of EG91-E module is 2.3 mm, whereas that of EG91-NA/NAX/NAXD/VX/AUX/EX/JP module is 2.45 mm.
- ③: eSIM function can be supported by software, but an external eSIM chip is required.