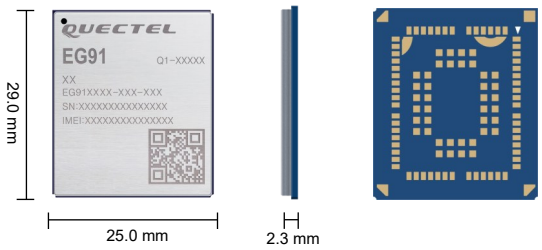
Quectel EG91 Series

IoT/M2M-optimized
LTE Cat 1 Modules



Quectel EG91 is a series of LTE category 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-NAL, 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, UMTS/HSPA UG95/UG96 modules and LPWA BG95 series/BG96/BC95-G 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 7/8/10, 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, security and alarm systems and so on.

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

LTE Cat 1
Max. 10 Mbps (DL)
Max. 5 Mbps (UL)

Max. 42 Mbps (DL)
Max. 5.76 Mbps (UL)

LGA Package

Embedded Abundant Protocols

Compact Size

Quectel Enhanced AT Commands

USB 2.0 High Speed Interface

USB Drivers

Rev.: 2.2 | Status: Released

Quectel EG91 Series

LTE Cat 1	EG91-NA	EG91-NAL	EG91-VX	EG91-NAX
Region/Operator	North America	North America	North America	North America
Dimensions (mm)	29.0 × 25.0 × 2.3	29.0 × 25.0 × 2.3	29.0 × 25.0 × 2.3	29.0 × 25.0 × 2.3
Temperature Range				
Operating Temperature	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C
Extended Temperature	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
Frequency Bands				
LTE-FDD	B2/B4/B5/B12/B13	B2/B4/B5/B12/B13	B4/B13	B2/B4/B5/B12/B13/B25/B26
WCDMA	B2/B4/B5	-	-	B2/B4/B5
GSM/EDGE	-	-	-	-
GNSS	GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)
Certifications				
Carrier	**America:** Verizon/AT&T/ T-Mobile/ U.S. Cellular **Canada:** Rogers/Telus	**America:** Verizon*/AT&T*	**America:** Verizon	**America:** Verizon/AT&T/Sprint
Regulatory	**Global:** GCF **America:** PTCRB/FCC **Canada:** IC	**Global:** GCF* **America:** PTCRB*/FCC **Canada:** IC	**Global:** GCF **America:** FCC	**Global:** GCF **America:** PTCRB/FCC **Canada:** IC
Others	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS
Data Transmission				
LTE-FDD Data Rates (Mbps)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)
DC-HSPA+ Data Rates (Mbps)	42 (DL)/5.76 (UL)	-	-	42 (DL)/5.76 (UL)
WCDMA Data Rates (kbps)	384 (DL)/384 (UL)	-	-	384 (DL)/384 (UL)
EDGE Data Rates (kbps)	-	-	-	-
GPRS Data Rates (kbps)	-	-	-	-
Interfaces				
(U)SIM	x 2	x 2	x 2	x 2
UART	x 2	x 2	x 2	x 2
USB 2.0	x 1	x 1	x 1	x 1
Audio Digital (PCM)	x 1	x 1	x 1	x 1
I2C	x 1	x 1	x 1	x 1
NETLIGHT	x 1	x 1	x 1	x 1
SPI	x 1	x 1	x 1	x 1
Main Antenna	x 1	x 1	x 1	x 1
Rx-diversity Antenna	x 1	x 1	x 1	x 1
GNSS Antenna	x 1	x 1	X 1	x 1
PWRKEY	x 1	x 1	x 1	x 1
RESET_N	x 1	x 1	x 1	x 1
USB_BOOT	x 1	x 1	x 1	x 1
Voice				
Speech Codec Modes	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB
Echo Arithmetic	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression
Audio	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)
Enhanced Features				
DTMF	●	●	●	●
DFOTA	●	●	●	●
QMI/RmNet	●	●	●	●
MIMO 2 x 2	●	●	●	●
Audio Playback*/ Audio Recording*	Optional	Optional	Optional	Optional
QuecOpen®	●	●	-	-
QuecLocator®	●	●	●	●
QuecFile®	●	●	●	●
Drivers				
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x
GNSS Driver	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x
RIL Driver	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x
USB NDIS Driver	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
USB MBIM Driver	Windows 8/8.1/10, Linux 3.18–5.12	Windows 8/8.1/10, Linux 3.18–5.12	-	-
USB GobiNet Driver	Linux 2.6–5.12	Linux 2.6–5.12	Linux 2.6–5.12	Linux 2.6–5.12
USB QMI_WWAN Driver	Linux 3.4–5.12	Linux 3.4–5.12	Linux 3.4–5.12	Linux 3.4–5.12
Electrical Features				
Supply Voltage Range	3.3–4.3V, 3.8V Typ.	3.3–4.3V, 3.8V Typ.	3.3–4.3V, 3.8V Typ.	3.3–4.3V, 3.8V Typ.
Power Consumption	13 μA @ Power off	13 μA @ Power off	13 μA @ Power off	13 μA @ Power off

Copyright © 2021 Quectel Wireless Solutions Co., Ltd. All Rights Reserved http://www.quectel.com
HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Tel: +86 21 51086236 Email: info@quectel.com

NOTE:
1. * : under development.
2. ● : supported.

Quectel EG91 Series

LTE Cat 1	EG91-NAXD (Data-only)	EG91-E	EG91-EX	EG91-AUX
Region/Operator	North America	EMEA	EMEA	Latin America/Australia & New Zealand
Dimensions (mm)	29.0 × 25.0 × 2.3	29.0 × 25.0 × 2.3	29.0 × 25.0 × 2.3	29.0 × 25.0 × 2.3
Temperature Range				
Operating Temperature	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C
Extended Temperature	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
Frequency Bands				
LTE-FDD	B2/B4/B5/B12/B13/B25/B26	B1/B3/B7/B8/B20/B28A	B1/B3/B7/B8/B20/B28	B1/B2/B3/B4/B5/B7/B8/B28/B66
WCDMA	B2/B4/B5	B1/B8	B1/B8	B1/B2/B5/B8
GSM/EDGE	-	B3/B8	B3/B8	B2/B3/B5/B8
GNSS	GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)	-	GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)	GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)
Certifications				
Carrier	**America:** Verizon/AT&T/ T-Mobile/Sprint	**Europe:** Deutsche Telekom	-	-
Regulatory	**Global:** GCF **America:** PTCRB/FCC **Canada:** IC	**Global:** GCF **Europe:** CE **Brazil:** Anatel **Australia & New Zealand:** RCM **Russia:** FAC	**Global:** GCF **Europe:** CE **Taiwan, China:** NCC **Australia & New Zealand:** RCM	**Europe:** CE **America:** FCC **Brazil:** Anatel **Australia & New Zealand:** RCM
Others	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS	WHQL/RoHS
Data Transmission				
LTE-FDD Data Rates (Mbps)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)
DC-HSPA+ Data Rates (Mbps)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
WCDMA Data Rates (kbps)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)
EDGE Data Rates (kbps)	-	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)
GPRS Data Rates (kbps)	-	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)
Interfaces				
(U)SIM	x 2	x 2	x 2	x 2
UART	x 2	x 2	x 2	x 2
USB 2.0	x 1	x 1	x 1	x 1
Audio Digital (PCM)	x 1	x 1	x 1	x 1
I2C	x 1	x 1	x 1	x 1
NETLIGHT	x 1	x 1	x 1	x 1
SPI	x 1	x 1	x 1	x 1
Main Antenna	x 1	x 1	x 1	x 1
Rx-diversity Antenna	x 1	x 1	x 1	-
GNSS Antenna	x 1	-	x 1	x 1
PWRKEY	x 1	x 1	x 1	x 1
RESET_N	x 1	x 1	x 1	x 1
USB_BOOT	x 1	x 1	x 1	x 1
Voice				
Speech Codec Modes	-	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB
Echo Arithmetic	-	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression
Audio	-	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)	Digital Audio and VoLTE (Voice over LTE) (Optional)
Enhanced Features				
DTMF	-	●	●	●
DFOTA	●	●	●	●
QMI/RmNet	●	●	●	●
MIMO 2 x 2	●	●	●	-
Audio Playback*/Audio Recording*	Optional	Optional	Optional	Optional
QuecOpen®	-	●	-	-
QuecLocator®	●	-	●	●
QuecFile®	●	●	●	●
(U)SIM Card Detection	●	●	●	●
Drivers				
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 2.6–5.12, Android 4.x–11.x
GNSS Driver	Android 4.x–11.x	-	Android 4.x–11.x	Android 4.x–11.x
RIL Driver	Android 4.x–10.x	Android 4.x–10.x	Android 4.x–10.x	Android 4.x–10.x
USB NDIS Driver	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
USB MBIM Driver	-	Windows 8/8.1/10, Linux 3.18–5.12	-	-
USB GobiNet Driver	Linux 2.6–5.12	Linux 2.6–5.12	Linux 2.6–5.12	Linux 2.6–5.12
USB QMI_WWAN Driver	Linux 3.4–5.12	Linux 3.4–5.12	Linux 3.4–5.12	Linux 3.4–5.12
Electrical Features				
Supply Voltage Range	3.3–4.3V, 3.8V Typ.	3.3–4.3V, 3.8V Typ.	3.3–4.3V, 3.8V Typ.	3.3–4.3V, 3.8V Typ.
Power Consumption	13 μA @ Power off	13 μA @ Power off	13 μA @ Power off	13 μA @ Power off

Copyright © 2021 Quectel Wireless Solutions Co., Ltd. All Rights Reserved http://www.quectel.com
HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Tel: +86 21 51086236 Email: info@quectel.com

NOTE:
1. * : under development.
2. ● : supported.