

Quectel EC20 R2.0

IoT/M2M-optimized LTE Cat 4 Module



Cat 4
Max 150Mbps (DL)
Max 50Mbps (UL)



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



LCC Package



Embedded Abundant
Protocols



eCall*



Multi-constellation
GNSS



USB 2.0 High Speed
Interface



USB Drivers



Quectel Enhanced
AT Commands

Key Benefits

- ☞ LTE category 4 module optimized for M2M and IoT applications
- ☞ Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ☞ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ☞ Feature refinements: supports DFOTA*, eCall*, QuecLocator and DTMF
- ☞ MIMO technology meets demands for data rate and link reliability in modern wireless communication systems

LTE



Quectel EC20 R2.0 is a series of LTE category 4 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel. 11 LTE technology, it delivers 150Mbit/s downlink and 50Mbit/s uplink data rates. Designed in the compact and unified form factor, EC20 R2.0 is compatible with Quectel UMTS/HSPA+ UC20 module and multi-mode LTE EC20/EC21 module, which allows for flexible migration among them in design and manufacturing.

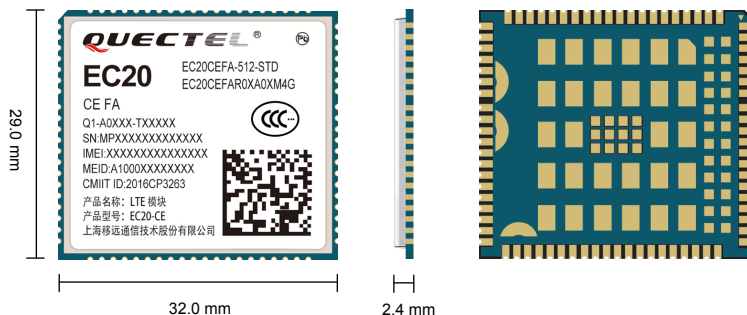
EC20 R2.0 contains 2 variants: EC20-C R2.0 and EC20-CE R2.0. This makes it backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 4G or 3G coverage.

EC20 R2.0 supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou, Galileo and QZSS). The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB drivers for Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows 10, Linux, Android/eCall*) extend the applicability of the module to a wide range of M2M and IoT applications such as industrial router, industrial PDA, rugged tablet PC, video surveillance, and digital signage.

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General Features

Frequency Bands	EC20-C R2.0	LTE FDD: B1/B3/B8 LTE TDD: B38/B39/B40/B41 TDSCDMA: B34/B39 WCDMA: B1/B8 GSM: 900/1800
	EC20-CE R2.0	LTE FDD: B1/B3/B8 LTE TDD: B38/B39/B40/B41 TDSCDMA: B34/B39 WCDMA: B1/B8 CDMA 1x/EVDO: BC0 GSM: 900/1800
LTE Version		3GPP E-UTRA Release 11
Bandwidth		1.4/3/5/10/15/20MHz
Antenna		Supports Rx-diversity
Supply Voltage Range		3.3V~4.3V, 3.8V Typ.
Operation Temperature		-40°C ~ +85°C
Dimensions		32.0mm × 29.0mm × 2.4mm
Package		LCC
Weight		Approx. 4.9g
Control via AT Commands		3GPP TS27.007 and enhanced AT Commands

Special Features

Drivers	USB Serial	Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows 10, Linux 2.6 or later, Android 4.0/4.2/4.4/5.0/5.1/6.0
	RIL	Android 4.0/4.2/4.4/5.0/5.1/6.0
	NDIS	Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows 10
	ECM	Linux 2.6 or later
	Gobinet	Linux 2.6 or later
	Linux qmi wwan	Linux 3.4 or later
DFOTA*		Delta firmware upgrade over the air
BT4.0*/Wi-Fi		Optional
GNSS		GPS/GLONASS/BeiDou/Galileo/QZSS

Interfaces

USB 2.0 Device	High Speed, 480Mbps
PCM	× 1, Digital Audio through PCM Interface (Optional)
USIM	1.8V/3V
NETLIGHT	× 2, NET_STATUS and NET_MODE
UART	× 1, UART
RESET	Active Low
PWRKEY	Active Low
Antenna	Pads for Primary, Rx-diversity and GNSS Antenna
ADC	× 2

Specifications

Data	LTE	LTE FDD: Max 150Mbps (DL) Max 50Mbps (UL) LTE TDD: Max 130Mbps (DL) Max 35Mbps (UL)
	DC-HSPA+	Max 42Mbps (DL) Max 5.76Mbps (UL)
	UMTS	Max 384Kbps (DL) Max 384Kbps (UL)
	TD-SCDMA	Max 4.2Mbps (DL) Max 2.2Mbps (UL)
	EDGE	Max 236.8Kbps (DL) Max 236.8Kbps (UL)
	GPRS	Max 85.6Kbps (DL) Max 85.6Kbps (UL)
Voice	Speech Codec Modes	HR, FR, EFR, AMR, AMR-WB
	Echo Arithmetic	Echo Cancellation Noise Reduction
eCall*		Accident, Emergency Services
VoLTE		Digital Audio and VoLTE (Voice over LTE) (Optional)
Protocols		TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/ NITZ/ CMUX/ HTTPS/ SMTP/ MMS/ FTPS/ SMTPS/ SSL/ FILE*

Electrical Characteristics

Output Power	Class 3 (23dBm±2dB) for LTE FDD Class 3 (23dBm±2dB) for LTE TDD Class 2 (24dBm +1/-3dB) for TD-SCDMA Class 3 (24dBm +1/-3dB) for WCDMA Class 3 (24dBm±1dB) for CDMA BC0 Class E2 (27dBm ±3dB) for EDGE 900MHz Class E2 (26dBm ±3dB) for EDGE 1800MHz Class 4 (33dBm ±2dB) for GSM 900MHz Class 1 (30dBm ±2dB) for GSM 1800MHz
Consumption	20uA @Power off 3mA @Sleep, Typ. 22mA @Idle
Sensitivity	FDD B1: -97dBm (10M) FDD B3: -95dBm (10M) FDD B8: -94dBm (10M) TDD B38: -97dBm (10M) TDD B39: -97dBm (10M) TDD B40: -97dBm (10M) TDD B41: -96dBm (10M) WCDMA B1: -111dBm WCDMA B8: -110dBm TDSCDMA B34: -109dBm TDSCDMA B39: -109dBm CDMA BC0: -109dBm GSM 900: -109dBm GSM 1800: -109dBm

Certification

Approval	CCC/ NAL/ TA
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* Under development

