

Quectel EC20

Multi-mode LTE Module



Cat3
Max. 100Mbps(DL)
Max. 50Mbps(UL)



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



LCC Package



Embedded Abundant
Protocols



eCall



GLONASS+GPS



USB 2.0 High Speed
Compliant Interface



USB Drivers



Quectel Enhanced
AT Commands

Key Benefits

- Worldwide LTE and UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- Minimal SMT form factor ideal for small end products with tight space and extended operating temperature range
- MIMO technology meets demands for data rate and link reliability in modem wireless communication systems
- GNSS receiver available for applications requiring fast and accurate fixes in any environments
- Simple migration from 3G to 4G with a flexible and scalable platform



EC20 series is the new generation of Quectel's LTE modules. Adopted the 3GPP Rel. 9 LTE technology, it delivers 100Mbps downlink and 50Mbps uplink data rates and is fallback compatible with Quectel UMTS/HSPA+UC20 module in the compact and unified form factor, providing a flexible and scalable platform for migrating from UMTS/HSPA+ to LTE. EC20 contains three variants EC20-A, EC20-C and EC20-E, which makes it backward-compatible with existing EDGE and GSM/GPRS networks to ensure that it can connect even in remote areas devoid of 4G or 3G coverage.

It supports Multiple-input multiple-output (MIMO) technology, a cutting edge antenna technology transmitting multiple data streams on multiple transmitters to multiple receivers. The antennas at each end of the communications circuit are combined to minimize errors and optimize data speed. It also combines high-speed wireless connectivity with embedded multi-constellation high-sensitivity positioning GPS+GLONASS receiver.

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, Linux, Android/eCall) extend the applicability of the module to a wide range of M2M applications such as CPE, router, data card, rugged tablet, automotive, security and industry PDA.

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General Features

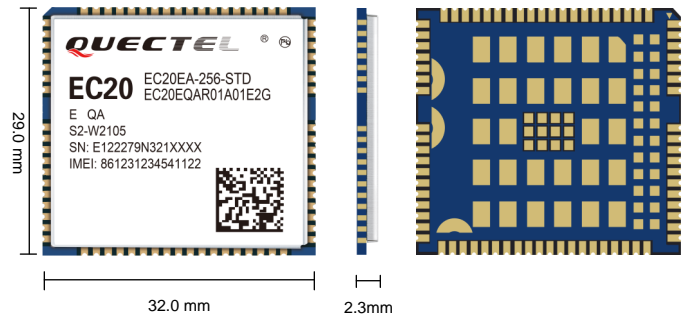
Frequency Bands	EC20-E FDD LTE: B1/B3/B5/B7/B8/B20 UMTS: B1/B5/B8 GSM: 850/900/1800/1900MHz
	EC20-A FDD LTE: B2/B4/B5/B12/B17 UMTS: B2/B4/B5 GSM: 850/1900MHz
	EC20-C FDD LTE: B1/B3/B8 TDD LTE: B38/B39/B40/B41 TDSCDMA: B34/B39 UMTS: B1/B8 GSM: 900/1800MHz
	LTE Version
Bandwidth	1.4/3/5/10/15/20MHz
Antenna	DL MIMO 2x2, supports Rx-diversity
Supply Voltage Range	3.3V~ 4.3V , 3.8V Typ.
Operation Temperature	-40 °C ~ +85 °C
Dimensions	32.0mm×29.0mm×2.3mm
Package	LCC
Weight	Approx. 4.6g
Control via AT commands	3GPP TS27.007 and enhanced AT Commands

Specifications

Data	LTE	LTE-FDD Max 100Mbps (DL) Max 50Mbps (UL) LTE-TDD Max 61Mbps (DL) Max18Mbps (UL)
	DC-HSPA+	Max 42Mbps (DL) Max5.76Mbps(UL)
Voice	UMTS	Max 384Kbps (DL) Max 384Kbps(UL)
	TD-SCDMA	Max 4.2Mbps (DL) Max 2.2Mbps(UL)
Voice	EDGE	Max 236.8Kbps (DL) Max 236.8Kbps(UL)
	GPRS	Max 85.6Kbps (DL) Max 85.6Kbps(UL)
	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*/SMTP*/MMS*/SSL*	

Special Features

Drivers	USB Serial	Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows CE5.0*/6.0*/7.0*, Linux 2.6 or later, Android 2.3 /4.0/4.2/4.4
	RIL	Windows CE6.0*,Windows Mobile 6.1*/6.5*, Android 2.3/4.0/4.2/4.4
DFOTA	NIDS	Windows XP, Windows Vista, Windows 7, Windows 8, Windows CE5.0*/6.0*/7.0*
	Firmware Update	Firmware Update via USB
GNSS*	GPS/GLONASS (Optional)	



Electrical Characteristics

Output Power	Class 3 (23dBm±2dB) for LTE FDD Class 3 (23dBm±2dB) for LTE TDD Class 3 (24dBm +1/-3dB) for TD-SCDMA Class 3 (24dBm +1/-3dB) for UMTS Class E2 (27dBm ±3dB) for EDGE 850/900MHz Class E2 (26dBm +3/-4dB) for EDGE 1800/1900MHz Class 4 (33dBm ±2dB) for GSM 850/900MHz Class 1 (30dBm ±2dB) for GSM 1800/1900MHz
Consumption	20uA@Power off 3mA@Sleep, Typ
Sensitivity	LTE B1: -97dBm(20M) LTE B3: -96dBm(20M) LTE B5: -99dBm(10M) LTE B7: -97dBm(20M) LTE B8: -98dBm(10M) LTE B20: -96dBm(20M) UMTS B1: -110dBm UMTS B5: -112dBm UMTS B8: -111dBm GSM 850: -111dBm GSM 900: -110dBm GSM 1800: -109dBm GSM 1900: -109dBm

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	×1UART
RESET	
PWRKEY	
Antenna	Pads for Primary, Rx-diversity and GNSS
ADC	×2

* Under development