

Quectel EC20

Multi-mode LTE Module

LTE



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



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



LCC Package



Embedded Abundant
Protocols



eCall



GLONASS+GPS



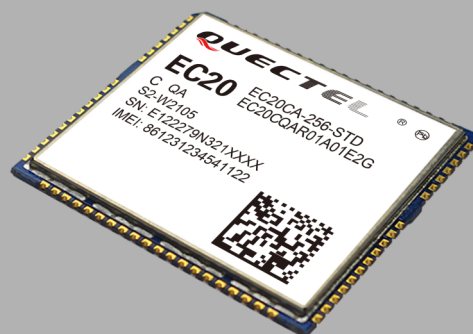
USB 2.0 High Speed
Compliant Interface



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

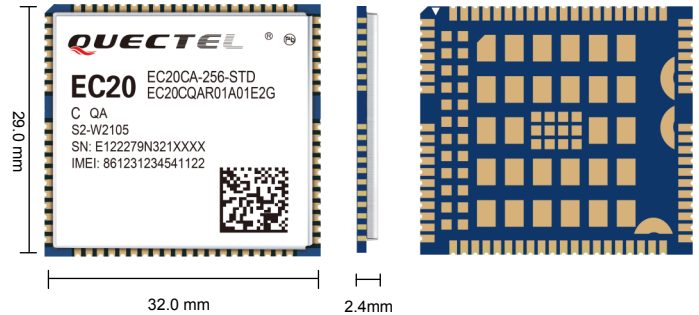
EC20 series is the new generation of Quectel's LTE modules. Adopted the 3GPP Rel. 9 LTE technology, it delivers 100Mbps downlink and 50Mbps uplink data rates, and is fallback compatible with Quectel UMTS/HSPA+UC20 module in the compact and unified form factor, providing a flexible and scalable platform for migrating from UMTS/HSPA+ to LTE. EC20 contains four variants EC20-A, EC20-C, EC20-CE 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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Multi-mode LTE Module



General Features

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
Frequency Bands	FDD LTE: B1/B3/B8 TDD LTE: B38/B39/B40/B41 TDSCDMA B34/B39
EC20-C	UMTS: B1/B8 GSM: 900/1800MHz
EC20-CE	FDD LTE: B1/B3 TDD LTE: B38/B39/B40/B41 TDSCDMA: B34/B39 WCDMA: B1 CDMA2000 1x/EVDO: BC0 GSM: 900/1800MHz
LTE Version	3GPP E-UTRA Release 9
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	32.0mmx29.0mmx2.4mm
Package	LCC
Weight	Approx. 4.6g
Control via AT commands	3GPP TS27.007 and enhanced AT Commands

Special Features

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 /5.0
RIL	Android 2.3/4.0/4.2/4.4/5.0
Drivers	NIDS Windows XP, Windows Vista, Windows 7, Windows 8/8.1 ECM Linux2.6 or later Gobinet Linux2.6 or later Linux qmi wwan Linux3.4or later
DFOTA	Firmware updated via the air
Firmware Update	Firmware Update via USB
GNSS	GPS/GLONASS

Interfaces

USB 2.0 Device	High Speed, 480Mbps
PCM	x1,Digital Audio through PCM Interface (Optional)
USIM	1.8V/3V
NETLIGHT	x2, NET_STATUS and NET_MODE
UART	x1UART
RESET	
PWRKEY	
Antenna	Pads for Primary, Rx-diversity and GNSS
ADC	x2

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	FDD B1: -97dBm(20M) FDD B2: -96dBm(20M) FDD B3: -96dBm(20M) FDD B4: -96dBm(20M) FDD B5: -99dBm(10M) FDD B7: -97dBm(20M) FDD B8: -98dBm(10M) FDD B12: -99dBm(20M) FDD B17: -99dBm(20M) FDD B20: -96dBm(20M) TDD B38: -94dBm(20M) TDD B39: -94dBm(20M) TDD B40: -94dBm(20M) TDD B41: -93.5dBm(20M) WCDMA B1: -110dBm WCDMA B2: -111dBm WCDMA B4: -111dBm WCDMA B5: -112dBm WCDMA B8: -111dBm TDSCDMA B34: -110dbm TDSCDMA B39: -110dbm CDMA BC0: -108dbm GSM 850: -111dBm GSM 900: -110dBm GSM 1800: -109dBm GSM 1900: -109dBm

Specifications

LTE	LTE-FDD Max 100Mbps (DL) Max 50Mbps (UL) LTE-TDD Max 61Mbps (DL) Max18Mbps (UL)
DC-HSPA+	Max 42Mbps(DL) Max5.76Mbps(UL)
UMTS	Max 384Kbps (DL) Max 384Kbps(UL)
Data	TD-SCDMA Max 4.2Mbps (DL) Max 2.2Mbps(UL) CDMA Max 5.4Mbps (DL) Max 14.7Mbps(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/SMTP*/MMS*/NTP/ PING/DTMF/FILE*/CMUX*/QMI

Certification

Approval	CCC/CE/NAL/TA/KC*/SKT*/NCC*/ICASA*
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* Under development

